NAS1-99000

SOLICITATION, OFFER AND AWARD

1. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 700)	RATING	PAGE	OF	PAGE(S)
	DO - C9	1		

2. CONTRACT NO	3. SOLICITATION NO.	4. TYPE OF SOLICITATION	5. DATE ISSUED	6. REQUISITION/PURCHASE NO.
NAS1-99000	1-135-GI.2166	☐ SEALED BID (IFB) ☒ NEGOTIATED (RFP)	FEB 10 1999	GI.2166

7. ISSUED BY	CODE	8. ADDRESS OFFER TO *(If other than Item 7)*
National Aeronautics and Space Administration Langley Research Center Hampton, VA 23681-2199		9A Langley Boulevard, Building 1195B, Room 125 NASA, Langley Research Center Hampton, VA 23681-2199

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder"

SOLICITATION

9. Sealed offers in original and 8 copies for furnishing the supplies or services in the Schedule will be received at the place specified in Item 8, or if handcarried, in the depository located in 9A Langley Boulevard, Building 1195B, Room 125 until 4:00 PM local time March 29, 1999

All offers are subject to all terms and conditions contained in this solicitation.

10. FOR INFORMATION CALL:	A. NAME	B. TELEPHONE NO. *(NO COLLECT CALLS)*			C. E-MAIL ADDRESS
		AREA CODE	NUMBER	EXT.	
	Tracy M. Spruill	757	864-2538		t.m.spruill@larc.nasa.gov

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(x)	SEC.	DESCRIPTION	PAGE(S)	(x)	SEC.	DESCRIPTION	PAGE(S)
		PART I - THE SCHEDULE				**PART II - CONTRACT CLAUSES**	
X	A	SOLICITATION/CONTRACT FORM		X	I	CONTRACT CLAUSES	
X	B	SUPPLIES OR SERVICES AND PRICE/COST				**PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACH.**	
X	C	DESCRIPTION/SPECS./WORK STATEMENT		X	J	LIST OF ATTACHMENTS	
X	D	PACKAGING AND MARKING				**PART IV - REPRESENTATIONS AND INSTRUCTIONS**	
X	E	INSPECTION AND ACCEPTANCE		X	K	REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF OFFERORS	
X	F	DELIVERIES OR PERFORMANCE					
X	G	CONTRACT ADMINISTRATION DATA		X	L	INSTRS., CONDS., AND NOTICES TO OFFERORS	
X	H	SPECIAL CONTRACT REQUIREMENTS		X	M	EVALUATION FACTORS FOR AWARD	

OFFER *(Must be fully completed by offeror)*

NOTE: Item 12 does not apply if the solicitation includes the provisions at 52.214-16, Minimum Bid Acceptance Period.

12. In compliance with the above, the undersigned agrees, if this offer is accepted within 120 calendar days *(60 calendar days unless a different period is inserted by the offeror)* from the date for receipt of offers specified above, to furnish any or all items upon which prices are offered at the price set opposite each item, delivered at the designated point(s), within the time specified in the schedule.

13. DISCOUNT FOR PROMPT PAYMENT *(See Section I, Clause No. 52.232-8)*	10 CALENDAR DAYS (%)	20 CALENDAR DAYS (%)	30 CALENDAR DAYS (%)	CALENDAR DAYS (%)
	%	%	%	%

14. ACKNOWLEDGMENT OF AMENDMENTS *(The offeror acknowledges receipt of amendments to the SOLICITATION for offerors and related documents numbered and dated:*	AMENDMENT NO.	DATE	AMENDMENT NO.	DATE

15A. NAME AND ADDRESS OF OFFEROR	CODE	FACILITY	16. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER *(Type or print)*

15B. TELEPHONE NUMBER			☐ 15C. CHECK IF REMITTANCE ADDRESS IS DIFFERENT FROM ABOVE - ENTER SUCH ADDRESS IN SCHEDULE.	17. SIGNATURE	18. OFFER DATE
AREA CODE	NUMBER	EXT.			

AWARD *(To be completed by Government)*

19. ACCEPTED AS TO ITEMS NUMBERED	20. AMOUNT	21. ACCOUNTING AND APPROPRIATION

22. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION:	23. SUBMIT INVOICES TO ADDRESS SHOWN IN (4 copies unless otherwise specified)	ITEM
☐ 10 U.S.C. 2304(c) ( ) ☐ 41 U.S.C. 253(c) ( )		

24. ADMINISTERED BY (If other than Item 7)	CODE	25. PAYMENT WILL BE MADE BY	CODE
		Financial Management Office, MS 175 Langley Research Center Hampton, VA 23681-2199	

26. NAME OF CONTRACTING OFFICER (Type or print)	27. UNITED STATES OF AMERICA *(Signature of Contracting Officer)*	28. AWARD DATE

IMPORTANT: Award will be made on this Form, or on Standard Form 26, or by other authorized official written notice.

NASA

National Aeronautics and Space Administration

Langley Research Center
Hampton, Virginia 23681-2199

SOLICITATION

1-135-GI.2166

REQUIREMENT: FACILITIES AND EQUIPMENT SUPPORT SERVICES (FESS)

1. Section L, Clause L.13, contains important information on proposal preparation. Section M sets forth the evaluation factors for award. Note that all volumes of your proposal are due 45 days after release of this final RFP.
2. The Government intends to award the contract resulting from this solicitation without discussions. See Section L provision entitled INSTRUCTIONS TO OFFERORS—COMPETITIVE ACQUISITION (FAR 52.215-1) (OCT 1997). To facilitate this process, we would like to avoid situations where proposals include substantive exceptions to the proposed contract terms and conditions which might be unacceptable to the Government and, therefore, preclude award. Therefore, it is requested and strongly recommended that you bring to the Government's attention prior to receipt of proposals any exceptions, questions, or additions you have to the proposed contract terms and conditions. The resolution of any exceptions to terms and conditions prior to receipt of proposals will aid the Government in its intention to award without discussions and thus streamline the procurement process.
3. This follow-on procurement will consolidate three LaRC contracts into a single, integrated work activity that will provide for greater overall work efficiencies. The current efforts being consolidated are: NAS1-20243, Facilities and Equipment Support Services; NAS1-19834, Operation of Steam and Compressed Gas Utility Systems (Steam Plant Only); and NAS1-20277, Elevator and Crane Maintenance and Repair Service.
4. This requirement is not a small business set-aside; however, the Contracting Officer has established SDB participation target and small business subcontracting goals. See L.11.
5. Note: Evaluation Criteria and ISO Requirements have changed. See H.8, L.13 and M.3
6. Every effort has been made to annotate significant changes from the Draft RFP to the final RFP by a bar in the margin. However, you are cautioned to carefully review the final RFP. Note for Attachment J, only those sections that contain revisions are being re-released. Changes made to B.5, Price Schedule, and Attachment 2, Bid Schedule, are not annotated. Extensive changes were made to these schedules, review carefully.
7. Information related to the CMMS (i.e. Project Management Plan) can be found at the following web-site ftp://fsed-ftp.larc.nasa.gov/pub/cmms/ .

A link to the above web-site will be identified at the FESS solicitation web-site. It is the offeror's responsibility to check the above CMMS web-site for changes. The solicitation web-site will not notify offerors of updates.

NOTICE: FOR BID RESULTS, ADDITIONAL PROCUREMENT OPPORTUNITIES AND OTHER NOTICES, CALL **1-800-PUR-NASA.**

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NAS1-99000	1-135-GI.2166	☐ SEALED BID (IFB) ☒ NEGOTIATED (RFP)	2/10/99	GI.2166

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National Aeronautics and Space Administration Langley Research Center Hampton, VA 23681-2199		9A Langley Boulevard, Building 1195B, Room 125 NASA, Langley Research Center Hampton, VA 23681-2199

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22. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION:	23. SUBMIT INVOICES TO ADDRESS SHOWN IN (4 copies unless otherwise specified) ▶	ITEM
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24. ADMINISTERED BY (If other than Item 7)	CODE	25. PAYMENT WILL BE MADE BY	CODE
		Financial Management Office, MS 175 Langley Research Center Hampton, VA 23681-2199	

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	(Signature of Contracting Officer)	

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PART I - THE SCHEDULE

SECTION B - SUPPLIES OR SERVICES AND PRICES/COSTS

B.1 SUPPLIES AND/OR SERVICES TO BE FURNISHED

The Contractor shall, to the extent specified herein, furnish all personnel, facilities, services, supplies, equipment and materials necessary to provide complete performance of Facilities and Equipment Support Services (FESS) as described in Section C, Description/Specifications/Work Statement.

B.2 GENERAL

The terms and conditions of this contract obtain facilities and equipment support services for Langley Research Center by means of a combination of Firm Fixed Price and Indefinite Delivery/Indefinite Quantity work with an Award Fee provision as defined below:

a. Firm Fixed Price Work

Work that can be identified in advance, in both sufficient detail and quantities, and for which a fair and reasonable price can be obtained is to be priced as Firm Fixed Price (FFP). All FFP work is identified in Section C. The FFP work is subject to the Exhibit I, Schedule of Deductions, as determined by the Exhibit G, Performance Requirements Summary (PRS), in conjunction with the "Consequences of Contractor's Failure to Perform Required Services for Firm Fixed Price Work" Clause in Section E.2. The firm fixed price for the contract base and each option year is located in Section B.5.

b. Indefinite Delivery Indefinite Quantity (IDIQ) Work

Work that is of a nonrecurring nature and cannot be sufficiently identified, predetermined, or quantified in advance is identified as IDIQ work. IDIQ work is identified in Section C. IDIQ work will be issued as either Unit Priced Tasks or Unit Priced Labor through Work/Service Requests (WSRs). IDIQ work may also be issued by facsimile, or by electronic commerce methods. IDIQ work shall be ordered in accordance with clause "Indefinite Delivery Indefinite Quantity Work" of this section, Section I clauses entitled "Ordering," "Order Limitations," and "Indefinite Quantity Work," and Section C.13. The IDIQ work is subject to the "Consequences of Contractor's Failure to Perform Required Services for IDIQ Work" Clause in Section E.3. IDIQ price schedules for the contract base and each option year is located in Section B.5.

c. Award Fee

An award fee provision is included in this contract to incentivize the Contractor's technical and business management of the contract, safety performance and extent of SDB participation and subcontracting with small business concerns. The award fee criteria and method of determination are identified in Section I clause "Award Fee for Service Contracts" and in the Government Performance Evaluation Plan.

d. Deductions

This contract is performance based and utilizes various means to calculate deductions if the Contractor fails to perform required services. The Exhibit I, Schedule of Deductions, the Contractor's Self-Evaluation of Performance, and the PRS will be used to assess the Contractor's performance and to determine deductions pursuant to the "Consequences of Contractor's Failure to Perform Required Services" Clauses in Section E.

B.3 INDEFINITE DELIVERY INDEFINITE QUANTITY WORK

a. The guaranteed minimum quantity of work which will be ordered under the IDIQ portion of this contract shall be $3,000,000 per contract year. The maximum amount of IDIQ work the Government may order is the IDIQ ceiling dollar value for the contract and shall not exceed $20,000,000 per contract year.

b. The Government is not obligated to place any orders under this contract for IDIQ work except for the guaranteed minimum stated above. If the Government orders supplies or services in excess of the minimum but not up to the maximum, this circumstance shall not constitute the basis for an equitable price adjustment.

B.4 AWARD FEE

a. The maximum available award fee for this contract is $400,000.

b. The award fee available for the base period is $400,000. The award fee available for each evaluation period is as follows:

Period	Available Award Fee	Earned Award Fee	Unearned Award Fee
September 1, 1999 – February 28, 2000	$ 75,000	TBD	TBD
March 1, 2000 – August 31, 2000	$125,000	TBD	TBD
September 1, 2000 – February 28, 2001	$ 75,000	TBD	TBD
March 1, 2001 – August 31, 2001	$125,000	TBD	TBD

c. In the event the Government elects to exercise its option(s) pursuant to the terms of this contract, the award fee available for each option shall be $200,000. The award fee for each evaluation period is as follows:

Period	Available Award Fee	Earned Award Fee	Unearned Award Fee
Option One			
September 1, 2001 – February 28, 2002	$ 75,000	TBD	TBD
March 1, 2002 – August 31, 2002	$125,000	TBD	TBD
Option Two			
September 1, 2002 – February 28, 2003	$ 75,000	TBD	TBD
March 1, 2003 – August 31, 2003	$125,000	TBD	TBD
Option Three			
September 1, 2003 – February 28, 2004	$ 75,000	TBD	TBD
March 1, 2004 – August 31, 2004	$125,000	TBD	TBD

B.5 PRICE SCHEDULE

a. The total dollar value for the FFP work for the contract is identified in the price schedule for each of the two base years and each of the three option years. The FFP total dollar value is for all work specified in the contract, except for work specifically identified as being included in the IDIQ portions of the contract. For the purposes of adjusting the fixed price in accordance with the Variation In Quantity, Section H clauses, the base period is reflected annually.

b. The Government intends to purchase its requirements for IDIQ work under this contract at the unit prices identified in the price schedules for the two base years and each of the three option years. The price schedules identify Straight Time (ST) and Overtime (OT) unit prices for IDIQ Unit Priced Labor.

PRICE SCHEDULE 1: BASE PERIOD - SEPTEMBER 1, 1999 Through AUGUST 31, 2000

Item No.	Description Of Services/Supplies	Unit	Unit Price
100	**PHASE-IN PERIOD (PIP)**		
	Total Price for Line Item 100	**Lot**	**$**
101	**FIRM FIXED-PRICE (FFP) WORK:**		
	Preventive Maintenance Work	Yr.	$
	Other Recurring Work	Yr.	$
	Trouble Call Work	Yr.	$
	Total Price for Line Item 101		**$**
	Total Price for Line Items 100 and 101		**$**
102	**INDEFINITE QUANTITY WORK - UNIT PRICED TASKS:**		
102-19	Calibration, Testing and Component Verification		
102-19.1	Fabrication of Hoses (See Clause C.19.j.)		
A	1" Synflex	Ln. Ft.	$
B	1" Single Braided Stainless Steel	Ln. Ft.	$
C	1" Double Braided	Ln. Ft.	$
D	3/4" Synflex	Ln. Ft.	$
E	3/4" Single Briaded	Ln. Ft.	$
F	3/4" Double Braided	Ln. Ft.	$
G	1/2" Synflex	Ln. Ft.	$
H	1/2" Single Braided	Ln. Ft.	$
I	1/2" Double Braided	Ln. Ft.	$
J	3/8" Synflex	Ln. Ft.	$
K	3/8" Single Braided	Ln. Ft.	$
L	3/8" Double Braided	Ln. Ft.	$
M	1/4" Synflex	Ln. Ft.	$
N	1/4" Single Braided	Ln. Ft.	$
O	1/4" Double Braided	Ln. Ft.	$
P	1/4" Air Hose	Ln. Ft.	$
Q	3/8" Air Hose	Ln. Ft.	$
R	1/2" Air Hose	Ln. Ft.	$
102-21	Buildings and Structures Maintenance and Repair		
102-21.1	Flooring Replacement (See Clause C.21.h.(1)(a))		
A	Resilient Tiles, 12"X12", 1/8" Thick	Sq. Ft.	$
B	Linoleum Sheet Flooring	Sq. Ft.	$
C	Vinyl Sheet Flooring	Sq. Ft.	$
D	Finished Wood Flooring	Sq. Ft.	$
E	Metal Flooring	Sq. Ft.	$
F	Elevated (Raised Computer) Flooring	Sq. Ft.	$
G	Patching Concrete Floors	Sq. Ft.	$
H	Replacing Vinyl Baseboards	Ln. Ft.	$
I	Ceramic Tile	Sq. Ft.	$
102-21.2	Ceiling Tile Replacement (See Clause C.21.h.(1)(b))		
A	Acoustical Ceiling Tile, 2'X4' and 2'X2', 5/8" Thick	Sq. Ft.	$
102-21.3	Roofing Replacement (See Clause C.21.h.(2)(c))		
A	Asphalt Shingle Roofing	Sq. Ft.	$
B	Modified Bituminous/Single Ply Membrane	Sq. Ft.	$
C	Built-up Roofing, 4-Ply	Sq. Ft.	$
D	Slate Roofing	Sq. Ft.	$
E	Corrugated Fiberglass	Sq. Ft.	$
F	Copper Flashing	Sq. Ft.	$
102-21.4	Painting (See Clause C.21.i.)		
A	Interior Painting, Gypsum Wallboard, One Coat	Sq. Ft.	$
B	Interior Painting, Concrete/Concrete Block, One Coat	Sq. Ft.	$
C	Interior Painting, Ferrous Surfaces, One Coat	Sq. Ft.	$
D	Interior Painting, Wood Trim, One Coat	Ln. Ft.	$
102-25	Fire Protection and Life Safety System Maintenance and Repair		
102-25.1	Replace Fire Hydrant (See Clause C.25.g.(2))	Each	$

Item No.	Description Of Services/Supplies	Unit	Unit Price
102-27	Roads and Other Surfaced Areas Maintenance and Repair		
102-27.1	Concrete Curb and Gutter (See Clause C.27.f(2)(b))	Ln. Ft.	$
102-27.2	Replacement of Wheel Stops in Parking Areas (See Clause C.27.f(2)(c))	Each	$
102-27.3	Sealing Concrete Joints and Cracks (See Clause C.27.f(2)(f))	Ln. Ft.	$
102-27.4	Pavement Striping and Stenciling (See Clause C.27.h.(2)		
A	Roadway Striping - White or Yellow Reflective	Ln. Ft.	$
B	Parking Lot Striping - White	Ln. Ft.	$
C	Pavement Crosswalks - White Reflective	Ln. Ft.	$
D	Pavement Stop Bars - White Reflective	Ln. Ft.	$
E	Traffic Letters and Numbers - White	Each	$
F	Handicap Symbols - Blue Box, White Symbol & Border	Each	$
G	Parking Stall Letters and Numbers	Each	$
H	Curb Painting - Yellow, Red or Blue (Or as Directed by CO)	Ln. Ft.	$
I	Curb Stenciling - White or Black	Each	$
102-27.5	Snow Plowing/Removal (See Clause C.27.i) - Roads and Parking Lots		
A	Up to Four (4) inches	Sq. Yd.	$
B	Four (4) to & Including Eight (8) inches	Sq. Yd.	$
C	Eight (8) to & Including Fourteen (14) inches	Sq. Yd.	$
D	Greater than 14 inches	Sq. Yd.	$
102-27.6	Ice Treatment (See Clause C.27.i)		
A	Sand Applied	Ton	$
B	Salt Applied	Ton	$
C	Other Chemicals Applied	Ton	$
102-27.7	Snow Plowing/Removal - Sidewalks and Entrances		
A	Up to Four (4) inches	Sq. Yd.	$
B	Four (4) to & Including Eight (8) inches	Sq. Yd.	$
C	Eight (8) to & Including Fourteen (14) inches	Sq. Yd.	$
D	Greater than 14 inches	Sq. Yd.	$

Item No.	Description Of Services/Supplies	Unit	ST Unit Price	OT Unit Price
103	**INDEFINITE QUANTITY WORK- UNIT PRICED LABOR**			
103-13.1	Davis-Bacon Act (DBA) Trades (These labor rates are subject to the DBA and General Decision (GD) VA980035 Building unless otherwise indicated.)			
	Bricklayer (Mason)	Hr.	$	$
	Carpenter	Hr.	$	$
	Cement Mason	Hr.	$	$
	Electrician	Hr.	$	$
	Front End Loader Operator	Hr.	$	$
	HVAC/R Mechanic	Hr.	$	$
	Insulator/Coveror	Hr.	$	$
	Ironworker	Hr.	$	$
	Laborer	Hr.	$	$
	Millwright	Hr.	$	$
	Painter	Hr.	$	$
	Painter - GD VA980018-Heavy	Hr.	$	$
	Plumber/Pipefitter	Hr.	$	$
	Power Equipment Operator, Crane	Hr.	$	$
	Roofer	Hr.	$	$
	Welder	Hr.	$	$
103-13.2	Service Contract Act (SCA) Trades. (These labor rates are subject to the SCA.)			
	Asbestos Worker	Hr.	$	$
	Asphalt Worker	Hr.	$	$
	Backhoe Operator	Hr.	$	$
	Bricklayer (Mason)	Hr.	$	$
	Carpenter	Hr.	$	$

Item No.	Description Of Services/Supplies	Unit	ST Unit Price	OT Unit Price
	Concrete Worker	Hr.	$	$
	Crane Mechanic	Hr.	$	$
	Drafter 1	Hr.	$	$
	Drywall Finisher/Taper	Hr.	$	$
	Drywall Installer/Lather	Hr.	$	$
	Electrician, Fire Alarm Systems	Hr.	$	$
	Electrician, High Voltage	Hr.	$	$
	Electrician	Hr.	$	$
	Electronics Technician	Hr.	$	$
	Elevator Mechanic	Hr.	$	$
	Engineer, Steam Stationary	Hr.	$	$
	Fire Sprinkler Technician	Hr.	$	$
	Front End Loader Operator	Hr.	$	$
	HVAC/R Mechanic	Hr.	$	$
	HVAC/R Technician	Hr.	$	$
	Insulator/Coveror	Hr.	$	$
	Laborer	Hr.	$	$
	Machinist, Precision	Hr.	$	$
	Machinist, Repairman	Hr.	$	$
	Mechanic, Calibration A	Hr.	$	$
	Mechanic, Calibration B	Hr.	$	$
	Mechanic, Equipment	Hr.	$	$
	Millwright, Maintenance	Hr.	$	$
	Operator, Boiler	Hr.	$	$
	Oxygen Cleaning Technician	Hr.	$	$
	Painter, Maintenance	Hr.	$	$
	Person, Utility	Hr.	$	$
	Pipefitter, Maintenance	Hr.	$	$
	Plant Technician	Hr.	$	$
	Power Equipment Operator, Crane*	Hr.	$	$
	Rigger, Maintenance	Hr.	$	$
	Roofer	Hr.	$	$
	Sheet Metal Worker	Hr.	$	$
	Steamfitter	Hr.	$	$
	Water Treatment Analysis	Hr.	$	$
	Welder	Hr.	$	$

			Unit Rate
104	**MATERIAL TO SUPPORT UNIT PRICED LABOR:** Material Fully Burdened Rate	$1.00	_____%
105	**EQUIPMENT TO SUPPORT UNIT PRICED LABOR:** Equipment Fully Burdened Rate	$1.00	_____%

PRICE SCHEDULE 2: BASE PERIOD - SEPTEMBER 1, 2000 Through AUGUST 31, 2001

Item No.	Description Of Services/Supplies	Unit	Unit Price
201	**FIRM FIXED-PRICE (FFP) WORK:**		
	Preventive Maintenance Work	Yr.	$
	~~Other Recurring Work~~	Yr.	$
	Trouble Call Work	Yr.	$
	Total Price for Line Item 201		$
202	**INDEFINITE QUANTITY WORK - UNIT PRICED TASKS:**		
202-19	Calibration, Testing and Component Verification		
202-19.1	Fabrication of Hoses (See Clause C.19.j.)		
A	1" Synflex	Ln. Ft.	$
B	1" Single Braided Stainless Steel	Ln. Ft.	$
C	1" Double Braided	Ln. Ft.	$
D	3/4" Synflex	Ln. Ft.	$
E	3/4" Single Briaded	Ln. Ft.	$
F	3/4" Double Braided	Ln. Ft.	$
G	1/2" Synflex	Ln. Ft.	$
~~H~~	~~1/2" Single Braided~~	Ln. Ft.	$
I	1/2" Double Braided	Ln. Ft.	$
J	3/8" Synflex	Ln. Ft.	$
K	3/8" Single Braided	Ln. Ft.	$
L	3/8" Double Braided	Ln. Ft.	$
M	1/4" Synflex	Ln. Ft.	$
N	1/4" Single Braided	Ln. Ft.	$
O	1/4" Double Braided	Ln. Ft.	$
P	1/4" Air Hose	Ln. Ft.	$
Q	3/8" Air Hose	Ln. Ft.	$
R	1/2" Air Hose	Ln. Ft.	$
202-21	Buildings and Structures Maintenance and Repair		
202-21.1	Flooring Replacement (See Clause C.21.h.(1)(a))		
A	Resilient Tiles, 12"X12", 1/8" Thick	Sq. Ft.	$
B	Linoleum Sheet Flooring	Sq. Ft.	$
C	Vinyl Sheet Flooring	Sq. Ft.	$
D	Finished Wood Flooring	Sq. Ft.	$
E	Metal Flooring	Sq. Ft.	$
F	Elevated (Raised Computer) Flooring	Sq. Ft.	$
G	Patching Concrete Floors	Sq. Ft.	$
H	Replacing Vinyl Baseboards	Ln. Ft.	$
I	Ceramic Tile	Sq. Ft.	$
202-21.2	Ceiling Tile Replacement (See Clause C.21.h.(1)(b))		
A	~~Acoustical Ceiling Tile, 2'X4' and 2'X2', 5/8" Thick~~	~~Sq. Ft.~~	~~$~~
202-21.3	Roofing Replacement (See Clause C.21.h.(2)(c))		
A	Asphalt Shingle Roofing	Sq. Ft.	$
B	Modified Bituminous/Single Ply Membrane	Sq. Ft.	$
C	Built-up Roofing, 4-Ply	Sq. Ft.	$
D	Slate Roofing	Sq. Ft.	$
E	Corrugated Fiberglass	Sq. Ft.	$
F	Copper Flashing	Sq. Ft.	$
202-21.4	Painting (See Clause C.21.i.)		
A	Interior Painting, Gypsum Wallboard, One Coat	Sq. Ft.	$
B	Interior Painting, Concrete/Concrete Block, One Coat	Sq. Ft.	$
C	Interior Painting, Ferrous Surfaces, One Coat	Sq. Ft.	$
D	Interior Painting, Wood Trim, One Coat	Ln. Ft.	$
202-25	Fire Protection and Life Safety System Maintenance and Repair		
202-25.1	~~Replace Fire Hydrant (See Clause C.25.g.(2))~~	Each	$
202-27	Roads and Other Surfaced Areas Maintenance and Repair		
202-27.1	Concrete Curb and Gutter (See Clause C.27.f(2)(b))	Ln. Ft.	$
202-27.2	Replacement of Wheel Stops in Parking Areas (See Clause C.27.f(2)(c))	Each	$

Item No.	Description Of Services/Supplies	Unit	Unit Price
202-27.3	Sealing Concrete Joints and Cracks (See Clause C.27.f(2)(f))	Ln. Ft.	$
202-27.4	Pavement Striping and Stenciling (See Clause C.27.h.(2)		
A	Roadway Striping - White or Yellow Reflective	Ln. Ft.	$
B	Parking Lot Striping - White	Ln. Ft.	$
C	Pavement Crosswalks - White Reflective	Ln. Ft.	$
D	Pavement Stop Bars - White Reflective	Ln. Ft.	$
E	Traffic Letters and Numbers - White	Each	$
F	Handicap Symbols - Blue Box, White Symbol & Border	Each	$
G	Parking Stall Letters and Numbers	Each	$
H	Curb Painting - Yellow, Red or Blue (Or as Directed by CO)	Ln. Ft.	$
I	Curb Stenciling - White or Black	Each	$
202-27.5	Snow Plowing/Removal (See Clause C.27.i) - Roads and Parking Lots		
A	Up to Four (4) inches	Sq. Yd.	$
B	Four (4) to & Including Eight (8) inches	Sq. Yd.	$
C	Eight (8) to & Including Fourteen (14) inches	Sq. Yd.	$
D	Greater than 14 inches	Sq. Yd.	$
202-27.6	Ice Treatment (See Clause C.27.i)		
A	Sand Applied	Ton	$
B	Salt Applied	Ton	$
C	Other Chemicals Applied	Ton	$
202-27.7	Snow Plowing/Removal - Sidewalks and Entrances		
A	Up to Four (4) inches	Sq. Yd.	$
B	Four (4) to & Including Eight (8) inches	Sq. Yd.	$
C	Eight (8) to & Including Fourteen (14) inches	Sq. Yd.	$
D	Greater than 14 inches	Sq. Yd.	$

Item No.	Description Of Services/Supplies	Unit	ST Unit Price	OT Unit Price
203	**INDEFINITE QUANTITY WORK- UNIT PRICED LABOR**			
203-13.1	Davis-Bacon Act (DBA) Trades (These labor rates are subject to the DBA and General Decision (GD) VA980035 Building unless otherwise indicated.)			
	Bricklayer (Mason)	Hr.	$	$
	Carpenter	Hr.	$	$
	Cement Mason	Hr.	$	$
	Electrician	Hr.	$	$
	Front End Loader Operator	Hr.	$	$
	HVAC/R Mechanic	Hr.	$	$
	Insulator/Coveror	Hr.	$	$
	Ironworker	Hr.	$	$
	Laborer	Hr.	$	$
	Millwright	Hr.	$	$
	Painter	Hr.	$	$
	Painter - GD VA980018 - Heavy	Hr.	$	$
	Plumber/Pipefitter	Hr.	$	$
	Power Equipment Operator, Crane	Hr.	$	$
	Roofer	Hr.	$	$
	Welder	Hr.	$	$
203-13.2	Service Contract Act (SCA) Trades (These labor rates are subject to the SCA.)			
	Asbestos Worker	Hr.	$	$
	Asphalt Worker	Hr.	$	$
	Backhoe Operator	Hr.	$	$
	Bricklayer (Mason)	Hr.	$	$
	Carpenter	Hr.	$	$
	Concrete Worker	Hr.	$	$
	Crane Mechanic	Hr.	$	$
	Drafter 1	Hr.	$	$
	Drywall Finisher/Taper	Hr.	$	$

Item No.	Description Of Services/Supplies	Unit	ST Unit Price	OT Unit Price
	Drywall Installer/Lather	Hr.	$	$
	Electrician, Fire Alarm Systems	Hr.	$	$
	Electrician, High Voltage	Hr.	$	$
	Electrician	Hr.	$	$
	Electronics Technician	Hr.	$	$
	Elevator Mechanic	Hr.	$	$
	Engineer, Steam Stationary	Hr.	$	$
	Fire Sprinkler Technician	Hr.	$	$
	Front End Loader Operator	Hr.	$	$
	HVAC/R Mechanic	Hr.	$	$
	HVAC/R Technician	Hr.	$	$
	Insulator/Coveror	Hr.	$	$
	Laborer	Hr.	$	$
	Machinist, Precision	Hr.	$	$
	Machinist, Repairman	Hr.	$	$
	Mechanic, Calibration A	Hr.	$	$
	Mechanic, Calibration B	Hr.	$	$
	Mechanic, Equipment	Hr.	$	$
	Millwright, Maintenance	Hr.	$	$
	Operator, Boiler	Hr.	$	$
	Oxygen Cleaning Technician	Hr.	$	$
	Painter, Maintenance	Hr.	$	$
	Person, Utility	Hr.	$	$
	Pipefitter, Maintenance	Hr.	$	$
	Plant Technician	Hr.	$	$
	Power Equipment Operator, Crane	Hr.	$	$
	Rigger, Maintenance	Hr.	$	$
	Roofer	Hr.	$	$
	Sheet Metal Worker	Hr.	$	$
	Steamfitter	Hr.	$	$
	Water Treatment Analysis	Hr.	$	$
	Welder	Hr.	$	$

			Unit Rate
204	**MATERIAL TO SUPPORT UNIT PRICED LABOR:** Material Fixed Burdened Rate	$1.00	_____%
205	**EQUIPMENT TO SUPPORT UNIT PRICED LABOR:** Equipment Fixed Burdened Rate	$1.00	_____%

PRICE SCHEDULE 3: OPTION PERIOD 1 - SEPTEMBER 1, 2001 Through AUGUST 31, 2002

Item No.	Description Of Services/Supplies	Unit	Unit Price
301	**FIRM FIXED-PRICE (FFP) WORK:**		
	Preventive Maintenance Work	Yr.	$
	Other Recurring Work	Yr.	$
	Trouble Call Work	Yr.	$
	Total Price for Contract Line Item 301		$
302	**INDEFINITE QUANTITY WORK - UNIT PRICED TASKS:**		
302-19	Calibration, Testing and Component Verification		
302-19.1	Fabrication of Hoses (See Clause C.19.j.)		
A	1" Synflex	Ln. Ft.	$
B	1" Single Braided Stainless Steel	Ln. Ft.	$
C	1" Double Braided	Ln. Ft.	$
D	3/4" Synflex	Ln. Ft.	$
E	3/4" Single Briaded	Ln. Ft.	$
F	3/4" Double Braided	Ln. Ft.	$
G	1/2" Synflex	Ln. Ft.	$
H	1/2" Single Braided	Ln. Ft.	$
I	1/2" Double Braided	Ln. Ft.	$
J	3/8" Synflex	Ln. Ft.	$
K	3/8" Single Braided	Ln. Ft.	$
L	3/8" Double Braided	Ln. Ft.	$
M	1/4" Synflex	Ln. Ft.	$
N	1/4" Single Braided	Ln. Ft.	$
O	1/4" Double Braided	Ln. Ft.	$
P	1/4" Air Hose	Ln. Ft.	$
Q	3/8" Air Hose	Ln. Ft.	$
R	1/2" Air Hose	Ln. Ft.	$
302-21	Buildings and Structures Maintenance and Repair		
302-21.1	Flooring Replacement (See Clause C.21.h.(1)(a))		
A	Resilient Tiles, 12"X12", 1/8" Thick	Sq. Ft.	$
B	Linoleum Sheet Flooring	Sq. Ft.	$
C	Vinyl Sheet Flooring	Sq. Ft.	$
D	Finished Wood Flooring	Sq. Ft.	$
E	Metal Flooring	Sq. Ft.	$
F	Elevated (Raised Computer) Flooring	Sq. Ft.	$
G	Patching Concrete Floors	Sq. Ft.	$
H	Replacing Vinyl Baseboards	Ln. Ft.	$
I	Ceramic Tile	Sq. Ft.	$
302-21.2	Ceiling Tile Replacement (See Clause C.21.h.(1)(b))		
A	Acoustical Ceiling Tile, 2'X4' and 2'X2', 5/8" Thick	Sq. Ft.	$
302-21.3	Roofing Replacement (See Clause C.21.h.(2)(c))		
A	Asphalt Shingle Roofing	Sq. Ft.	$
B	Modified Bituminous/Single Ply Membrane	Sq. Ft.	$
C	Built-up Roofing, 4-Ply	Sq. Ft.	$
D	Slate Roofing	Sq. Ft.	$
E	Corrugated Fiberglass	Sq. Ft.	$
F	Copper Flashing	Sq. Ft.	$
302-21.4	Painting (See Clause C.21.i.)		
A	Interior Painting, Gypsum Wallboard, One Coat	Sq. Ft.	$
B	Interior Painting, Concrete/Concrete Block, One Coat	Sq. Ft.	$
C	Interior Painting, Ferrous Surfaces, One Coat	Sq. Ft.	$
D	Interior Painting, Wood Trim, One Coat	Ln. Ft.	$
302-25	Fire Protection and Life Safety System Maintenance and Repair		
302-25.1	Replace Fire Hydrant (See Clause C.25.g.(2))	Each	$
302-27	Roads and Other Surfaced Areas Maintenance and Repair		
302-27.1	Concrete Curb and Gutter (See Clause C.27.f(2)(b))	Ln. Ft.	$
302-27.2	Replacement of Wheel Stops in Parking Areas (See Clause C.27.f(2)(c))	Each	$

Item No.	Description Of Services/Supplies	Unit	Unit Price
302-27.3	Sealing Concrete Joints and Cracks (See Clause C.27.f(2)(f))	Ln. Ft.	$
302-27.4	Pavement Striping and Stenciling (See Clause C.27.h.(2)	Ln. Ft.	
A	Roadway Striping - White or Yellow Reflective	Ln. Ft.	$
B	Parking Lot Striping - White	Ln. Ft.	$
C	Pavement Crosswalks - White Reflective	Ln. Ft.	$
D	Pavement Stop Bars - White Reflective	Ln. Ft.	$
E	Traffic Letters and Numbers - White	Each	$
F	Handicap Symbols - Blue Box, White Symbol & Border	Each	$
G	Parking Stall Letters and Numbers	Each	$
H	Curb Painting - Yellow, Red or Blue (Or as Directed by CO)	Ln. Ft.	$
I	Curb Stenciling - White or Black	Each	$
302-27.5	Snow Plowing/Removal (See Clause C.27.i) - Roads and Parking Lots		
A	Up to Four (4) inches	Sq. Yd.	$
B	Four (4) to & Including Eight (8) inches	Sq. Yd.	$
C	Eight (8) to & Including Fourteen (14) inches	Sq. Yd.	$
D	Greater than 14 inches	Sq. Yd.	$
302.27.6	Ice Treatment (See Clause C.27.i)		
A	Sand Applied	Ton	$
B	Salt Applied	Ton	$
C	Other Chemicals Applied	Ton	$
302-31	Research Facility Mechanical, Electrical and Fluid Systems Maintenance and Repair		
302-27.7	Snow Plowing/Removal - Sidewalks and Entrances		
A	Up to Four (4) inches	Sq. Yd.	$
B	Four (4) to & Including Eight (8) inches	Sq. Yd.	$
C	Eight (8) to & Including Fourteen (14) inches	Sq. Yd.	$
D	Greater than 14 inches	Sq. Yd.	$

Item No.	Description Of Services/Supplies	Unit	ST Unit Price	OT Unit Price
303	**INDEFINITE QUANTITY WORK - UNIT PRICED LABOR**			
303-13.1	Davis-Bacon Act (DBA) Trades (These labor rates are subject to the DBA and General Decision (GD) VA980035 Building unless otherwise indicated.)			
	Bricklayer (Mason)	Hr.	$	$
	Carpenter	Hr.	$	$
	Cement Mason	Hr.	$	$
	Electrician	Hr.	$	$
	Front End Loader Operator	Hr.	$	$
	HVAC/R Mechanic	Hr.	$	$
	Insulator/Coveror	Hr.	$	$
	Ironworker	Hr.	$	$
	Laborer	Hr.	$	$
	Millwright	Hr.	$	$
	Painter	Hr.	$	$
	Painter - GD VA980018 Heavy	Hr.	$	$
	Plumber/Pipefitter	Hr.	$	$
	Power Equipment Operator, Crane	Hr.	$	$
	Roofer	Hr.	$	$
	Welder	Hr.	$	$
303-13.2	Service Contract Act (SCA) Trades (These labor rates are subject to the SCA.)			
	Asbestos Worker	Hr.	$	$
	Asphalt Worker	Hr.	$	$
	Backhoe Operator	Hr.	$	$
	Bricklayer (Mason)	Hr.	$	$
	Carpenter	Hr.	$	$
	Concrete Worker	Hr.	$	$
	Crane Mechanic	Hr.	$	$

PRICE SCHEDULE 4: OPTION PERIOD 2 - SEPTEMBER 1, 2002 Through AUGUST 31, 2003

Item No.	Description Of Services/Supplies	Unit	Unit Price
401	**FIRM FIXED-PRICE (FFP) WORK:**		
	Preventive Maintenance Work	Yr.	$
	Other Recurring Work	Yr.	$
	Trouble Call Work	Yr.	$
	Total Price for Contract Line Item 401		$
402	**INDEFINITE QUANTITY WORK - UNIT PRICED TASKS:**		
402-18	Rigging and Hauling Services		
402-18.1	Rigging Truck & tools with Supervisor (See Clause C.18)		
A	Five Riggers	Hour	$
B	Four Riggers	Hour	$
C	Three Riggers	Hour	$
D	Two Riggers	Hour	$
402-19	Calibration, Testing and Component Verification		
402-19.1	Fabrication of Hoses (See Clause C.19.j.)		
A	1" Synflex	Ln. Ft.	$
B	1" Single Braided Stainless Steel	Ln. Ft.	$
C	1" Double Braided	Ln. Ft.	$
D	3/4" Synflex	Ln. Ft.	$
E	3/4" Single Briaded	Ln. Ft.	$
F	3/4" Double Braided	Ln. Ft.	$
G	1/2" Synflex	Ln. Ft.	$
H	1/2" Single Braided	Ln. Ft.	$
I	1/2" Double Braided	Ln. Ft.	$
J	3/8" Synflex	Ln. Ft.	$
K	3/8" Single Braided	Ln. Ft.	$
L	3/8" Double Braided	Ln. Ft.	$
M	1/4" Synflex	Ln. Ft.	$
N	1/4" Single Braided	Ln. Ft.	$
O	1/4" Double Braided	Ln. Ft.	$
P	1/4" Air Hose	Ln. Ft.	$
Q	3/8" Air Hose	Ln. Ft.	$
R	1/2" Air Hose	Ln. Ft.	$
402-21	Buildings and Structures Maintenance and Repair		
402-21.1	Flooring Replacement (See Clause C.21.h.(1)(a))		
A	Resilient Tiles, 12"X12", 1/8" Thick	Sq. Ft.	$
B	Linoleum Sheet Flooring	Sq. Ft.	$
C	Vinyl Sheet Flooring	Sq. Ft.	$
D	Finished Wood Flooring	Sq. Ft.	$
E	Metal Flooring	Sq. Ft.	$
F	Elevated (Raised Computer) Flooring	Sq. Ft.	$
G	Patching Concrete Floors	Sq. Ft.	$
H	Replacing Vinyl Baseboards	Ln. Ft.	$
I	Ceramic Tile	Sq. Ft.	$
402-21.2	Ceiling Tile Replacement (See Clause C.21.h.(1)(b))		
A	Acoustical Ceiling Tile, 2'X4' and 2'X2', 5/8" Thick	Sq. Ft.	$
402-21.3	Roofing Replacement (See Clause C.21.h.(2)(c))		
A	Asphalt Shingle Roofing	Sq. Ft.	$
B	Modified Bituminous/Single Ply Membrane	Sq. Ft.	$
C	Built-up Roofing, 4-Ply	Sq. Ft.	$
D	State Roofing	Sq. Ft.	$
E	Corrugated Fiberglass	Sq. Ft.	$
F	Copper Flashing	Ln. Ft.	$
402-21.4	Painting (See Clause C.21.i.)		
A	Interior Painting, Gypsum Wallboard, One Coat	Sq. Ft.	$
B	Interior Painting, Concrete/Concrete Block, One Coat	Sq. Ft.	$
C	Interior Painting, Ferrous Surfaces, One Coat	Sq. Ft.	$
D	Interior Painting, Wood Trim, One Coat	Sq. Ft.	$

Item No.	Description Of Services/Supplies	Unit	Unit Price
402-25	Fire Protection and Life Safety System Maintenance and Repair		
402-25.1	Replace Fire Hydrant (See Clause C.25.g.(2))	Each	$
402-27	Roads and Other Surfaced Areas Maintenance and Repair		
402-27.1	Concrete Curb and Gutter (See Clause C.27.f(2)(b))	Ln. Ft.	$
402-27.2	Replacement of Wheel Stops in Parking Areas (See Clause C.27.f(2)(c))	Each	$
402-27.3	Sealing Concrete Joints and Cracks (See Clause C.27.f(2)(f))	Ln. Ft.	$
402-27.4	Pavement Striping and Stenciling (See Clause C.27.h.(2)	Ln. Ft.	
A	Roadway Striping - White or Yellow Reflective	Ln. Ft.	$
B	Parking Lot Striping - White	Ln. Ft.	$
C	Pavement Crosswalks - White Reflective	Ln. Ft.	$
D	Pavement Stop Bars - White Reflective	Ln. Ft.	$
E	Traffic Letters and Numbers - White	Each	$
F	Handicap Symbols - Blue Box, White Symbol & Border	Each	$
G	Parking Stall Letters and Numbers	Each	$
H	Curb Painting - Yellow, Red or Blue (Or as Directed by CO)	Ln. Ft.	$
I	Curb Stenciling - White or Black	Each	$
402-27.5	Snow Plowing/Removal (See Clause C.27.i) - Roads and Parking Lots		
A	Up to Four (4) inches	Sq. Yd.	$
B	Four (4) to & Including Eight (8) inches	Sq. Yd.	$
C	Eight (8) to & Including Fourteen (14) inches	Sq. Yd.	$
D	Greater than 14 inches	Sq. Yd.	$
402.27.6	Ice Treatment (See Clause C.27.i)		
A	Sand Applied	Ton	$
B	Salt Applied	Ton	$
C	Other Chemicals Applied	Ton	$
402-27.7	Snow Plowing/Removal - Sidewalks and Entrances		
A	Up to Four (4) inches	Sq. Yd.	$
B	Four (4) to & Including Eight (8) inches	Sq. Yd.	$
C	Eight (8) to & Including Fourteen (14) inches	Sq. Yd.	$
D	Greater than 14 inches	Sq. Yd.	$

Item No.	Description Of Services/Supplies	Unit	ST Unit Price	OT Unit Price
403	**INDEFINITE QUANTITY WORK - UNIT PRICED LABOR**			
403-13.1	Davis-Bacon Act (DBA) Trades (These labor rates are subject to the DBA and General Decision (GD) VA980035 Building unless otherwise indicated.)			
	Bricklayer (Mason)	Hr.	$	$
	Carpenter	Hr.	$	$
	Cement Worker	Hr.	$	$
	Electrician	Hr.	$	$
	Front End Loader Operator	Hr.	$	$
	HVAC/R Mechanic	Hr.	$	$
	Insulator/Coveror	Hr.	$	$
	Ironworker	Hr.	$	$
	Laborer	Hr.	$	$
	Millwright	Hr.	$	$
	Painter	Hr.	$	$
	Painter - GD VA980018 - Heavy	Hr.	$	$
	Plumber/Pipefitter	Hr.	$	$
	Power Equipment Operator, Crane	Hr.	$	$
	Roofer	Hr.	$	$
	Welder	Hr.	$	$
403-13.2	Service Contract Act (SCA) Trades (These labor rates are subject to the SCA.)			
	Asbestos Worker	Hr.	$	$
	Asphalt Worker	Hr.	$	$
	Backhoe Operator	Hr.	$	$

Item No.	Description Of Services/Supplies	Unit	ST Unit Price	OT Unit Price
	Bricklayer (Mason)	Hr.	$	$
	Carpenter	Hr.	$	$
	Concrete Worker	Hr.	$	$
	Crane Mechanic	Hr.	$	$
	Drafter 1	Hr.	$	$
	Drywall Finisher/Taper	Hr.	$	$
	Drywall Installer/Lather	Hr.	$	$
	Electrician, Fire Alarm Systems	Hr.	$	$
	Electrician, High Voltage	Hr.	$	$
	Electrician	Hr.	$	$
	Electronics Technician	Hr.	$	$
	Elevator Mechanic	Hr.	$	$
	Engineer, Steam Stationary	Hr.	$	$
	Fire Sprinkler Technician	Hr.	$	$
	Front End Loader Operator	Hr.	$	$
	HVAC/R Mechanic	Hr.	$	$
	HVAC/R Technician	Hr.	$	$
	Insulator/Coveror	Hr.	$	$
	Laborer	Hr.	$	$
	Machinist, Precision	Hr.	$	$
	Machinist, Repairman	Hr.	$	$
	Mechanic, Calibration A	Hr.	$	$
	Mechanic, Calibration B	Hr.	$	$
	Mechanic, Equipment	Hr.	$	$
	Millwright, Maintenance	Hr.	$	$
	Operator, Boiler	Hr.	$	$
	Oxygen Cleaning Technician	Hr.	$	$
	Painter, Maintenance	Hr.	$	$
	Person, Utility	Hr.	$	$
	Pipefitter, Maintenance	Hr.	$	$
	Plant Technician	Hr.	$	$
	Power Equipment Operator, Crane	Hr.	$	$
	Rigger, Maintenance	Hr.	$	$
	Roofer	Hr.	$	$
	Sheet Metal Worker	Hr.	$	$
	Steamfitter	Hr.	$	$
	Water Treatment Analysis	Hr.	$	$
	Welder	Hr.	$	$

			Unit Price
404	**MATERIAL TO SUPPORT UNIT PRICED LABOR:** Material Fixed Burdened Rate	$1.00	_____%
405	**EQUIPMENT TO SUPPORT UNIT PRICED LABOR:** Equipment Fixed Burdened Rate	$1.00	_____%

PRICE SCHEDULE 5: OPTION PERIOD 3 - SEPTEMBER 1, 2003 Through AUGUST 31, 2004

Item No.	Description Of Services/Supplies	Unit	Unit Price
501	**FIRM FIXED-PRICE (FFP) WORK:**		
	Preventive Maintenance Work	Yr.	$
	Other Recurring Work	Yr.	$
	Trouble Call Work	Yr.	$
	Total Price for Line Item 501		**$**
502	**INDEFINITE QUANTITY WORK - UNIT PRICED TASKS:**		
502-19	Calibration, Testing and Component Verification		
502-19.1	Fabrication of Hoses (See Clause C.19.j.)		
A	1" Synflex	Ln. Ft.	$
B	1" Single Braided Stainless Steel	Ln. Ft.	$
C	1" Double Braided	Ln. Ft.	$
D	3/4" Synflex	Ln. Ft.	$
E	3/4" Single Briaded	Ln. Ft.	$
F	3/4" Double Braided	Ln. Ft.	$
G	1/2" Synflex	Ln. Ft.	$
H	1/2" Single Braided	Ln. Ft.	$
I	1/2" Double Braided	Ln. Ft.	$
J	3/8" Synflex	Ln. Ft.	$
K	3/8" Single Braided	Ln. Ft.	$
L	3/8" Double Braided	Ln. Ft.	$
M	1/4" Synflex	Ln. Ft.	$
N	1/4" Single Braided	Ln. Ft.	$
O	1/4" Double Braided	Ln. Ft.	$
P	1/4" Air Hose	Ln. Ft.	$
Q	3/8" Air Hose	Ln. Ft.	$
R	1/2" Air Hose	Ln. Ft.	$
502-21	Buildings and Structures Maintenance and Repair		
502-21.1	Flooring Replacement (See Clause C.21.h.(1)(a))		
A	Resilient Tiles, 12"X12", 1/8" Thick	Sq. Ft.	$
B	Linoleum Sheet Flooring	Sq. Ft.	$
C	Vinyl Sheet Flooring	Sq. Ft.	$
D	Finished Wood Flooring	Sq. Ft.	$
E	Metal Flooring	Sq. Ft.	$
F	Elevated (Raised Computer) Flooring	Sq. Ft.	$
G	Patching Concrete Floors	Sq. Ft.	$
H	Replacing Vinyl Baseboards	Ln. Ft.	$
I	Ceramic Tile	Sq. Ft.	$
502-21.2	Ceiling Tile Replacement (See Clause C.21.h.(1)(b))		
A	Acoustical Ceiling Tile, 2'X4' and 2'X2', 5/8" Thick	Sq. Ft.	$
502-21.3	Roofing Replacement (See Clause C.21.h.(2)(c))		
A	Asphalt Shingle Roofing	Sq. Ft.	$
B	Modified Bituminous/Single Ply Membrane	Sq. Ft.	$
C	Built-up Roofing, 4-Ply	Sq. Ft.	$
D	Slate Roofing	Sq. Ft.	$
E	Corrugated Fiberglass	Sq. Ft.	$
F	Copper Flashing	Sq. Ft.	$
502-21.4	Painting (See Clause C.21.i.)		
A	Interior Painting, Gypsum Wallboard, One Coat	Sq. Ft.	$
B	Interior Painting, Concrete/Concrete Block, One Coat	Sq. Ft.	$
C	Interior Painting, Ferrous Surfaces, One Coat	Sq. Ft.	$
D	Interior Painting, Wood Trim, One Coat	Ln. Ft.	$
502-25	Fire Protection and Life Safety System Maintenance and Repair		
502-25.1	Replace Fire Hydrant (See Clause C.25.g.(2))	Each	$
502-27	Roads and Other Surfaced Areas Maintenance and Repair		
502-27.1	Concrete Curb and Gutter (See Clause C.27.f(2)(b))	Ln. Ft.	$
502-27.2	Replacement of Wheel Stops in Parking Areas (See Clause C.27.f(2)(c))	Each	$

Item No.	Description Of Services/Supplies	Unit	Unit Price
502-27.3	Sealing Concrete Joints and Cracks (See Clause C.27.f(2)(f))	Ln. Ft.	$
502-27.4	Pavement Striping and Stenciling (See Clause C.27.h.(2)		
A	Roadway Striping - White or Yellow Reflective	Ln. Ft.	$
B	Parking Lot Striping - White	Ln. Ft.	$
C	Pavement Crosswalks - White Reflective	Ln. Ft.	$
D	Pavement Stop Bars - White Reflective	Ln. Ft.	$
E	Traffic Letters and Numbers - White	Each	$
F	Handicap Symbols - Blue Box, White Symbol & Border	Each	$
G	Parking Stall Letters and Numbers	Each	$
H	Curb Painting - Yellow, Red or Blue (Or as Directed by CO)	Ln. Ft.	$
I	Curb Stenciling - White or Black	Each	$
502-27.5	Snow Plowing/Removal (See Clause C.27.i) - Roads and Parking Lots		
A	Up to Four (4) inches	Sq. Yd.	$
B	Four (4) to & Including Eight (8) inches	Sq. Yd.	$
C	Eight (8) to & Including Fourteen (14) inches	Sq. Yd.	$
D	Greater than 14 inches	Sq. Yd.	$
502.27.6	Ice Treatment (See Clause C.27.i)		
A	Sand Applied	Ton	$
B	Salt Applied	Ton	$
C	Other Chemicals Applied	Ton	$
502-27.7	Snow Plowing/Removal - Sidewalks and Entrances		
A	Up to Four (4) inches	Sq. Yd.	$
B	Four (4) to & Including Eight (8) inches	Sq. Yd.	$
C	Eight (8) to & Including Fourteen (14) inches	Sq. Yd.	$
D	Greater than 14 inches	Sq. Yd.	$

Item No.	Description Of Services/Supplies	Unit	ST Unit Price	OT Unit Price
503	**INDEFINITE QUANTITY WORK - UNIT PRICED LABOR**			
503-13.1	Davis-Bacon Act (DBA) Trades (These labor rates are subject to the DBA and General Decision (GD) VA980035 Building unless otherwise indicated.)			
	Bricklayer (Mason)	Hr.	$	$
	Carpenter	Hr.	$	$
	Cement Mason	Hr.	$	$
	Electrician	Hr.	$	$
	Front End Loader Operator	Hr.	$	$
	HVAC/R Mechanic	Hr.	$	$
	Insulator/Coveror	Hr.	$	$
	Ironworker	Hr.	$	$
	Laborer	Hr.	$	$
	Millwright	Hr.	$	$
	Painter	Hr.	$	$
	Painter - GD VA 980018 Heavy	Hr.	$	$
	Plumber/Pipefitter	Hr.	$	$
	Roofer	Hr.	$	$
	Welder	Hr	$	$
503-13.2	Service Contract Act (SCA) Trades (These labor rates are subject to the SCA.)			
	Asbestos Worker	Hr.	$	$
	Asphalt Worker	Hr.	$	$
	Backhoe Operator	Hr.	$	$
	Bricklayer (Mason)	Hr.	$	$
	Carpenter	Hr.	$	$
	Concrete Worker	Hr.	$	$
	Crane Mechanic	Hr.	$	$
	Drafter 1	Hr.	$	$
	Drywall Finisher/Taper	Hr.	$	$
	Drywall Installer/Lather	Hr.	$	$

Item No.	Description Of Services/Supplies	Unit	ST Unit Price	OT Unit Price
	Electrician, Fire Alarm Systems	Hr.	$	$
	Electrician, High Voltage	Hr.	$	$
	Electrician	Hr.	$	$
	Electronics Technician	Hr.	$	$
	Elevator Mechanic	Hr.	$	$
	Engineer, Steam Stationary	Hr.	$	$
	Fire Sprinkler Technician	Hr.	$	$
	Front End Loader Operator	Hr.	$	$
	HVAC/R Mechanic	Hr.	$	$
	HVAC/R Technician	Hr.	$	$
	Insulator/Coveror	Hr.	$	$
	Laborer	Hr.	$	$
	Machinist, Precision	Hr.	$	$
	Machinist, Repairman	Hr.	$	$
	Mechanic, Calibration A	Hr.	$	$
	Mechanic, Calibration B	Hr.	$	$
	Mechanic, Equipment	Hr.	$	$
	Millwright, Maintenance	Hr.	$	$
	Operator, Boiler	Hr.	$	$
	Oxygen Cleaning Technician	Hr.	$	$
	Painter, Maintenance	Hr.	$	$
	Person, Utility	Hr.	$	$
	Pipefitter, Maintenance	Hr.	$	$
	Plant Technician	Hr.	$	$
	Power Equipment Operator, Crane	Hr.	$	$
	Rigger, Maintenance	Hr.	$	$
	Roofer	Hr.	$	$
	Sheet Metal Worker	Hr.	$	$
	Steamfitter	Hr.	$	$
	Water Treatment Analysis	Hr.	$	$
	Welder	Hr.	$	$

Item No.	Description Of Services/Supplies	Unit	Unit Rate
504	**MATERIAL TO SUPPORT UNIT PRICED LABOR:**		
	Material Fixed Burdened Rate	$1.00	_____%
505	**EQUIPMENT TO SUPPORT UNIT PRICED LABOR:**		
	Equipment Fixed Burdened Rate	$1.00	_____%

SECTION C - DESCRIPTION/SPECIFICATIONS/WORK STATEMENT

STATEMENT OF WORK-- FACILITIES AND EQUIPMENT SUPPORT SERVICES (FESS)

The Description/Specification/Statement of Work, entitled "Facilities and Equipment Support Services (FESS), is contained herein.

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C.1 GENERAL INTENTION

The intention of this statement of work is to obtain operations, maintenance, and repair of facilities, facilities systems and equipment, and construction services at Langley Research Center (LaRC) by means of a combination firm fixed-price and indefinite quantity (IQ) contract.

END OF SUBSECTION C.1

C.2 SCOPE OF WORK

The Contractor shall furnish labor, supervision, tools, materials, equipment, engineering, transportation, and management necessary for the maintenance and repair of buildings and structures, research facilities such as wind tunnels, and related systems and equipment. The Contractor shall also furnish specified systems operations services, construction and subcontract administration services, and other miscellaneous services as indicated herein. Attachment J-C1 describes the facilities, systems, equipment, and personal property to be maintained in this contract. (When Attachments in Section J are referenced herein, that reference includes all attachments under that heading. For example; reference to attachment J-C9 includes J-C9-21, J-C9-22, J-C9-23, and so forth.) The Government makes no representation or guarantee as to the condition of facilities on the start date of the contract, and no adjustments will be made in contract price relative to facilities condition after contract award. The firm fixed-price work includes contract management, the performance of trouble call work, recurring work such as preventive maintenance, other scheduled maintenance and repair (M&R) work, and specified facilities operations. The indefinite quantity (IQ) work items include repairs exceeding trouble call limits, Replacement of Obsolete Items (ROI), service request, minor construction and work required on an unscheduled or irregular frequency. Work required by this contract is continuous and repetitive in nature, is accomplished within the framework of comprehensive and detailed short and long term schedules, and requires diligent and continuous program management by the Contractor. Attachment J-2 identifies commonly used Acronyms. Exhibit G, Performance Requirements Summary will be used for Contractor performance evaluation.

END OF SUBSECTION C.2

C.3 LIMITATIONS

The following buildings are on the LaRC Closure List. Only response to emergency Trouble Calls and Fire Systems Maintenance and Repair are required at these facilities:

583	584	585	640	641**
643*	720	720A	720B	1120
1157	1207	1229B	1247G	1249
1270	1270A	1270B	1270C	1272
1274	1278	1279		

* There is a service air compressor in this facility that shall be maintained and repaired under this contract. The compressor and related equipment is listed in J-C1 and is included in the Preventive Maintenance program.

Buildings 1310 (Credit Union) and 1312 (Air Force Liaison Office) require response to emergency Trouble Calls, and also require Preventive Maintenance on emergency lighting and fire suppression equipment.

Building 647 is shared with the United States Air Force. The Contractor will be required to respond for services requested by NASA LaRC personnel occupying the first and third floor.

The following systems are maintained and serviced outside this contract:

1. The phone system switching equipment and the supporting uninterruptable power supplies in the following facilities 1201, 1211and 641** switch room.

2. The emergency diesels located at Buildings 1268 and 1213.

END OF SUBSECTION C.3

**Although building closed, Contractor has responsibility for switch room.

C.4 DEFINITIONS - TECHNICAL

As used throughout this contract, the following terms shall have the meaning set forth below. See also the "DEFINITIONS" clause in Sec. I.

1. Where "as shown," "as indicated," "as detailed," or words of similar import are used, it shall be understood that reference is made to this specification and the drawings accompanying this specification unless stated otherwise.

2. Where "as directed," "as required," "as permitted," "approval," "acceptance," or words of similar import are used, it shall be understood that direction, requirement, permission, approval, or acceptance of the Contracting Officer is intended unless stated otherwise.

3. Adjust. To regulate, settle, or bring to a more satisfactory state of normal operating condition.

4. Alteration. Work that changes the configuration of a facility (not Maintenance or repairs) but that does not increase the value of the facility: for example, moving a door or electrical outlet.

5. Apprentice. An individual who is serving an apprenticeship or equivalent training period (usually four years or more) in a designated field, craft, or trade. A reputable organization or trade school program shall document apprentice training.

6. Backlogged Trouble Calls. A routine trouble call issued during the previous contract which was not completed for any reason, or maintenance and repair requirements which may be identified during lapses, if any, in services between this contract and the previous contract.

7. Blanket Work Order. The document (referred to in Section J-C8) directing a contractor to perform recurring work on a scheduled basis on the previous contract, NAS1-20243. It contains all of the information included on a normal work request.

8. Building. The classification "Building" includes the basic structure, capital improvements and fixed equipment that are normally required for the functional use of the building and becomes permanently attached to and made a part of the building and that cannot be removed without cutting into the walls, ceilings, or floors, such as plumbing, heating, and lighting equipment; elevators; central air-conditioning systems; and built-in safes and vaults. (Also includes unique equipment related to research test facilities such as large drive motors, large oil and hydraulic systems and high pressure/high volume gas systems such as methane, air, nitrogen, oxygen and hydrogen.)

9. Check. Check includes examination and the performance of parts replacement, lubrication, adjustment, calibration, cleaning, repair, etc.

10. Clean. "Clean" is defined as free of dirt, dust, spots, streaks, stains, smudges, litter, debris, and other residue.

11. Collateral Equipment. Encompasses building-type equipment, built-in equipment, and large, substantially affixed equipment/property and is normally acquired and installed as part of a facility project as described below:

    Building-Type Equipment. A term used in connection with facility projects to describe equipment which is normally required to make a facility useful and operable. It is built in or affixed to the facility in such a manner that removal would impair the usefulness, safety, or environment of the facility. Such equipment includes elevators; heating, ventilating and air-conditioning systems; transformers; compressors; and other like items generally accepted as being an inherent part of a building or structure and essential to its utility. Such equipment also includes

general building systems and subsystems such as electrical, plumbing, pneumatic, fire protection and control and monitoring systems.

Built-in or Large, Substantially Affixed Equipment. A term used in connection with facility projects of any type other than building-type equipment that is to be built in, affixed to, or installed in real property in such manner that the installation cost, including special foundations or unique utilities service, or the facility restoration work required after its removal, is substantial.

12. Component Part. Any part of any item or system which is detachable or removable from the main body or main assembly of the item or system; a constituent part or an essential part necessary to the performance of the system.

13. Computerized Maintenance Management System (CMMS). A CMMS is a set of computer software modules and equipment databases containing facility data with the capability to process the data for facilities maintenance management functions. These maintenance-related functions typically include: facility/equipment inventory and history, work input control, job estimating, work scheduling and tracking, preventive and predictive maintenance, facility inspection and assessment, material management, and utilities' management.

14. Contracting Officer. The Contracting Officer is a NASA LaRC civil service employee with the authority to enter into, administer, and/or terminate contracts and make related determinations and findings. The term includes certain authorized representatives of the Contracting Officer acting within the limits of their authority as delegated by the Contracting Officer as a Contracting Officer's Technical Representative (COTR).

15. Contractor. The term Contractor as used herein refers to both the prime Contractor and any subcontractors. The prime Contractor shall ensure that subcontractors comply with the provisions of this contract.

16. Contractor Quality Control (QC). A method used by the Contractor to control the quality of goods and services produced.

17. Control. A mechanism used to regulate or guide the operation of a machine, apparatus, or system.

18. Critical Reserve Items. Selected items that are essential or critical to the operation of a facility and/or are long lead-time parts and materials, which must be maintained in stock at a minimum level to support maintenance and operations of a specific facility.

19. Equipment Cost. Equipment costs for recurring work shall be included in the firm fixed-price proposal. For IQ work, equipment costs will be established pursuant to Subsection C. 13.

20. Facility. A term used to encompass land, buildings, structures and other real property improvements, including utility systems and collateral equipment. The term does not include operating materials, supplies, special tooling, special test equipment, nor capitalized equipment. (See *NASA Financial Management Manual (FMM)* 9250-32 for criteria for capitalized equipment.) The term facility is used in connection with land, buildings (facilities having the basic function to enclose usable space), structures (facilities having the basic function of a research or operational activity), and other real property improvements.

21. Facility Condition Assessment. Facility condition assessment is a standardized survey conducted of facilities by experienced facilities maintenance personnel to observe the material condition of each facility in order to determine the overall average condition of each Center. The surveys encompass the different components of the facilities, such as roofs, pumps, air conditioning condensers, interior and exterior finishes, electrical motors and system. Assessment also includes the Center's

infrastructure, such as roads, storage tanks, grounds, sidewalks, drainage structures, and utility systems.

22. Facility Coordinator. The individual who assists the Facility Safety Head in achieving safe operations and serves as the focal point at the designated facility, building, or apparatus. A summary of the responsibilities of the Facility Coordinator is provided in LMI 1700.2, Safety Assignments.

19. Facility Safety Head. The individual who serves as the on-site manager of the safety program at the facility, building, or apparatus. The responsibilities of Facility Safety Heads are defined in LMI 1700.2, Safety Assignments.

24. Fixed Burden Rate (FBR). The material and/or equipment handling rate (cost) plus any associated indirect costs and profit. This is expressed as a percent to be applied to the applicable base.

25. Fluid. A liquid or gas including compressed air.

26. Fluid system. A system that generates, compresses, pumps, distributes, delivers, and/or reclaims gases or liquids.

27. Frequency of Service.

    a. *Annual (A)* - Services performed once during each 12-month period of the contract.
    b. *Semiannual (SA)* - Services performed twice during each 12-month period of the contract at intervals of 160 to 200 calendar days.
    c. *Quarterly (Q)* - Services performed four times during each 12-month period of the contract at intervals of 80 to 100 calendar days.
    d. *Monthly (M)* - Services performed 12 times during each 12-month period of the contract at intervals of 28 to 31 calendar days.
    e. *Semimonthly (SM)* - Services performed 24 times during each 12-month period of the contract at intervals of 14 to 16 calendar days.
    f. *Weekly (W)* - Services performed 52 times during each 12-month period of the contract at intervals of six to eight calendar days.
    g. *Twice weekly (2W)*. Services performed twice a week, such as Monday and Thursday or Tuesday and Friday.
    h. *Three times weekly (3W)*. Services performed three times a week, such as Monday, Wednesday and Friday.
    i. *Daily (D5)* - Services performed once each day, Monday through Friday, including holidays unless otherwise noted.

28. Government Quality Assurance (QA). Methods used by the Government to determine the quality and acceptability of purchased goods and services. In accordance with the FAR 52.246-4, "INSPECTION OF SERVICES - FIXED PRICE" clause, Section I, each phase of the services rendered under this contract is subject to Government inspection, during the Contractor's operations and after completion of the tasks.

29. Hazardous Waste. Waste materials that are toxic or poisonous, oxidizers, corrosive, irritating or sensitizing, radioactive, biologically infectious, explosive, flammable, or that presents a significant hazard to human health and the environment as determined by Federal, State or Local regulatory authorities, or that are listed in Federal or State regulations. Special handling procedures and facilities are required in their disposal.

30. Incidental Engineering. Incidental engineering is the performance of limited engineering analyses and activities on certain maintenance related tasks as indicated in this specification. Examples include the evaluation of the LaRC Facilities Preventive Maintenance and Repair program and development of the Annual Work Plan as required in Subsection C.8.a.(2)(d); evaluation and recommendations regarding the Energy Management and Control System equipment described in

Subsection C.15.f; performing evaluations and making recommendations during troubleshooting and repair of specialized mechanical or electrical equipment; evaluation of mechanical or electrical systems for code compliance during certain repair or new construction activities; development or approval of complex scaffolding systems; and development and testing of specialized lifting devices and testing apparatus. Incidental engineering does not generally include professional design services such as those which would be performed by a professional Architectural and Engineering firm during the development of an engineered construction project.

31. Indefinite Quantity. In Section C, indefinite quantity (IQ) is the same as indefinite delivery indefinite quantity (IDIQ) as used in the Federal Acquisition Regulation, and elsewhere in this contract.

32. Institutional Facility. A facility that provides office, medical, cafeteria, shop or warehouse type space for the scientific, engineering and technical workforce at NASA LaRC.

33. Journeyman. An experienced reliable person who has completed a required apprenticeship or equivalent experience (six years or more) that can be documented in a designated field, craft, or trade.

34. Labor Hour Performance Guide. A set of standards for assessing the average time necessary for a qualified craftsman working at a normal pace, following acceptable trade methods, receiving capable supervision, and experiencing normal delays to perform defined amounts of work of a specified quality. Labor hour estimates are included in the R. S. Means® Maintenance and Repair Cost Data.

35. Maintenance. The recurring day-to-day, periodic, or scheduled work required to preserve or restore a facility to such a condition that it may be effectively utilized for its designated purpose. The term includes work undertaken to prevent damage to a facility that otherwise would be more costly to restore.

36. Maintenance Zone. One of seven zones at LaRC. Each zone is a collection of buildings or apparatus grouped together as to their function. Major wind tunnels are grouped together in a zone, laboratories in another zone, administration buildings in another zone, etc. The zones are as follows:

    1, 2, and 3 – Research Facilities
    4 –Research Laboratories/Shops
    5 – Major Utilities
    6 –Institutional Building/Facilities
    0 – Other Center Wide Systems

37. Material Costs. Material costs for recurring work shall be included in the firm fixed-price proposal. For IQ work, material costs will be established pursuant to Subsection C. 13.

38. Minor Construction. A minor construction project is defined as a single undertaking at a NASA installation that includes all construction necessary to produce a complete and usable facility or a complete and usable improvement to an existing facility and has an approved cost not in excess of $500,000.

39. Non-Recurring Work. Non-recurring work is included in the indefinite quantity (IQ) portion of the contract and will be performed as specified in Work/Service Requests.

40. Operator Maintenance. Operator Maintenance is the examination, trouble shooting, lubrication, minor repairs (no larger in scope than Trouble Calls), and adjustments of equipment and systems to be performed by the assigned operator. Repairs performed under this category do not qualify as trouble calls.

41. Personal Property.- Property of any kind, including equipment, materials, and supplies, but excluding real property.

42. Phase-in Period. The phase-in period of the contract is that period of time between the contract award and start date during which the Contractor performs all necessary activities to ensure the continuity of services to the Government during the transition between the existing and the new contract. During the phase-in period, the Government will provide orientation to the Contractor's key management and supervisory personnel performing under the contract.

43. Pre-expended bin materials and supplies. The minor materials and supplies that are incidental to a job, and for which the total direct cost of any one material line item shown on the material estimate is $10.00 or less. Examples include solder, lead, flux, electrical tape, fuses, nails, screws, bolts, nuts, washers, spacers, masking tape, sand paper, solvent, cleaners, lubricants, grease, oil, rags, mops, glue, epoxy, spackling compound, joint tape, gases, refrigerants, refrigeration fittings, plumbers tape and compound, clips, welding rods, heat sinks, touch up paint, and plumbing fittings.

44. Predictive Testing & Inspection (PT&I). PT&I is the use of advanced technology to assess machinery condition, and is often substituted for time-based maintenance in order to perform more effective maintenance activities. This category of work is also referred to as condition monitoring or predictive maintenance. Results of PT&I information collection and analysis are used to schedule preventive maintenance, repair, replacement, validate other maintenance and repair efforts, verify new installations, and determine overall material condition of systems and equipment. Common PT&I technologies include vibration analysis, infrared thermography, and lubricating oil analysis.

45. Preventive Maintenance (PM). Preventive Maintenance is also known as periodic maintenance, time-based maintenance, or interval-based maintenance. PM is the planned, scheduled, periodic inspection, adjustment, cleaning, lubrication, parts replacement, and minor repair of systems and equipment (See Subsection C.12). See also Predictive Test & Inspection (PT&I).

46. Proactive Maintenance. Also referred to as "root-cause analysis," proactive maintenance is the further application of predictive maintenance technologies toward extending machinery life. It seeks to reduce the need for maintenance through better design, better installation, precision balance and alignment, and root-cause failure analysis.

47. Programmed Maintenance (PGM). NASA LaRC maintenance category for work items whose maintenance cycle is undefined and which are performed on an "as-needed" basis.

48. Quality Assurance Evaluator (QAE). A NASA LaRC employee responsible for the evaluation of Contractor performance.

49. Reactive Maintenance. Often called breakdown maintenance or "run to failure (RTF)." Reactive maintenance or equipment repairs are performed only when the deterioration in a machine's condition causes a functional failure.

50. Real Property. Any interest in land and anything permanently attached to it, including structures, fixtures, and their improvements.

51. Recurring Work. Recurring work is a part of the firm fixed-price portion of the Contract and is identified in various Subsections of this specification. Recurring work includes providing the management and administration of this contract, providing the LaRC Duty Officer (See Subsection C.8, *Management*), furnishing various plant/system operators (See Subsections C.15 *Energy Management* and C.24, *Steam Generation, Distribution System and Remote Heating Plant Operation, Maintenance and Repair)* and performing Trouble Call and Preventive Maintenance work.

52. Regular Working Hours. NASA LaRC regular (normal) working hours are from 7:00 AM to 4:30 PM Mondays through Fridays except (a) Federal Holidays and (b) other days specifically designated by the Contracting Officer. Some research facilities also have a second shift until normally 3:30 to 12:00 midnight, and/or a third shift normally 12:00 midnight to 8:00 AM.

53. Reliability Centered Maintenance (RCM). RCM is a maintenance strategy that logically incorporates the optimum mix of preventive, predictive, reactive, and proactive maintenance practices. These maintenance practices are integrated to take advantage of their respective strengths in order to maximize facility and equipment operability and efficiency while minimizing life cycle costs, and are not generally applied independently.

54. Repair. That facility work required to restore a facility or component thereof, to a condition substantially equivalent to its originally intended and designed capacity, efficiency or capability or as currently required. It includes the substantially equivalent replacements of building utility systems and equipment necessitated by incipient or actual breakdown.

55. Replacement of Obsolete Items (ROI). There are many components of a facility that should be programmed for replacement as a result of becoming obsolete, not meeting electrical or building codes, or being unsafe. For example:

    Electric switchgear, breakers, and motor starters.
    Elevators.
    Control systems.
    Boiler and central HVAC systems and controls.
    Fire detection systems.
    Cranes and hoists.
    A/ C systems using CFC refrigerants
    Roofs

    This is a NASA LaRC maintenance category, which is one element of long term planned maintenance. Replacement of Obsolete Items is not part of the firm fixed-price work.

56. Research Facility. LaRC Research Facility include subsonic, transonic, supersonic and hypersonic wind tunnels, structural and materials research laboratories and other unique, high energy and high technology facilities. A brief functional description of each major facility is included in Attachment J-CI-21B. Most of those have unique structural, mechanical and electrical features, such as wind tunnel main drive systems, research equipment vacuum and hydraulic systems, special test platforms and struts, and shop equipment which are to be maintained under this contract.

57. Response Time. Response time is defined as the time allowed the Contractor after initial notification of a work requirement to be physically on the premises at the work site with appropriate tools, equipment, and materials, ready to perform the work required. Response times are designated in the appropriate technical clauses in Section C.

58. Service Requests. Service requests are requests for facilities-related work that is new in nature as opposed to maintenance and repair work

59. Supplies. See pre-expended bin materials and supplies.

60. Travel Time. Time expended between shop and the job site; waiting for vehicle; getting in and out of vehicle; loading and carrying a tool box; vehicle travel; unloading, walking from vehicle to job site; opening and closing door; walking up and down stairs; using elevators; and access to secure or controlled areas.

61. Trouble Calls. Trouble calls are reactive maintenance work that is generally called in by occupants of a facility. See Subsection C.11 for further definition.

62. Unit Priced Labor. A Unit price labor is the price bid by the Contractor to provide one performance standard hour of effort. The unit price includes all direct and indirect costs and profit associated with performing a standard hour of work.

63. Unit Priced Task. A unit priced task is the price bid by the Contractor to perform the specified task. The unit price includes all direct and indirect costs and profit associated with performing the specific task.

64. Work Request. Work Request are request for facility related repair work exceeding trouble call limits.

65. Work/Service Request (WSR). A document that is further detailed as a Work Request or Service Request.

66. Zone Maintenance Manager (ZMM) or Assistant Zone Maintenance Manager (AZMM). The NASA LaRC individual who is the focal point for maintenance, repair, and construction activities within a specific maintenance zone.

END OF SUBSECTION C.4

C.5. GOVERNMENT FURNISHED PROPERTY AND SERVICES

In accordance with the "INSTALLATION ACCOUNTABLE GOVERNMENT PROPERTY " clause in Section I, the Government will provide the Contractor the use of certain Government owned facilities, equipment, and materials for use only in connection with this contract. The use of Government furnished property and services for other purposes is prohibited. All such facilities, equipment, and materials will be provided in "as is" condition.

a. Government Furnished Facilities (GFF). The Government will furnish or make available to the Contractor the facilities described in Attachment J-C2. Services by others will also be performed in these facilities, including emergency response, janitorial, refuse, grounds maintenance, and pest control. The Contractor shall obtain written approval from the Contracting Officer prior to making any modifications or alterations to the facilities. All facilities shall be returned to the Government in the same condition as received at the completion of the contract, except for reasonable wear and tear and approved modifications and alterations. The Contractor will be held responsible for the cost of any repairs caused by negligence or abuse by the Contractor or its employees.

b. Installation Accountable Government Property (IAGP). The Government will provide the Contractor the use of existing and available Government owned tools and equipment in the performance of the contract. Such Government furnished tools and equipment are listed in Attachment J-C3. Additional IAGP, is listed in Sections G.2 and G3 of the contract.

(1) The Contractor shall perform periodic servicing, maintenance, and repairs on IAGP chosen for use under this contract. Periodic servicing and maintenance shall be performed as part of the firm fixed price work with the exception of the Government furnished vehicles listed in Attachment J-C3 - 5D. The Government will provide periodic servicing and maintenance of the vehicles listed in Attachment J-C3 -5D. In the case of the UCS and EMCS equipment addressed in C.15 Energy Management and listed in Attachment J-C27, replacement of equipment (except as indicated under operator maintenance) will be the responsibility of the Government. Repairs shall be performed in accordance with the requirements in Subsection C.11 *Trouble Calls*. The Contractor will be held responsible for the cost of any repairs caused by negligence or abuse by the Contractor or its employees. If replacement of IAGP is required because of Contractor negligence, abuse, or loss, the Contractor shall reimburse the Government for the replacement equipment. The total or partial breakdown or failure of the IAGP does not relieve the Contractor of the responsibility to fully perform the work of this contract. Upon completion or termination of the contract, all Government furnished tools and equipment shall be returned to the Government in the same condition as received, except for normal wear and tear.

During the performance of this contract, IAGP that is damaged beyond repair or worn out, due to normal use, shall be returned to the Government. If such equipment is needed for the performance of this contract, their replacement shall be the responsibility of the Contractor and the equipment will remain Contractor property.

The Government will provide gasoline and diesel fuel (propane will not be furnished) required for operation of vehicles and equipment used in the performance of this contract. The Contractor shall keep a record of gasoline used by each vehicle and all major equipment for the Contracting Officer's periodic review.

(2) The Contractor and the Contracting Officer shall conduct a joint inventory during the phase-in period of this contract to determine the exact number and serviceability of Government furnished tools and equipment chosen by the Contractor. The Contractor shall then certify the findings of this inventory, assume accounting responsibility, and subsequently report inventory discrepancies to the Contracting Officer. Government furnished items shall not be

removed from Langley Research Center unless approved in advance by the Contracting Officer in writing.

c. Government Furnished Material (GFM). The Government will not provide any Government furnished materials except for critical reserve items. Experience has shown that selected items that are essential or critical to the operation of a facility and/or are long lead time parts and materials must be stocked to insure repair of critical equipment in the event of failure. A list of these critical reserve items and minimum stocking levels is contained in Attachment J-C4. The Government will provide the Contractor an initial issue of items in at least the minimum quantities listed in Attachment J-C4. The Contractor shall conduct an inventory (utilizing the Government's inventory of the materials) during the phase-in period of this contract to confirm the exact number of critical reserve items. The Contractor shall then certify the findings of this inventory and assume accounting responsibility for all the critical reserve items. The Contractor shall maintain at least the minimum quantity of all the items specified. These items shall be used by the Contractor in the maintenance and repair of the facilities/systems only as follows:

(1) Critical reserve items shall be used on the systems, facilities, or IAGP with which they are associated as shown in Attachment J-C4 unless directed otherwise by the Contracting Officer.

(2) A replacement critical reserve item shall be ordered within three working days after the use of any critical reserve item that causes the total quantity on hand to fall below the minimum specified level.

(3) On completion or termination of the contract, all critical reserve items shall be returned to the Government in at least the minimum specified quantities.

d. Availability of Utilities. The Government will furnish the utility services at existing outlets for the Contractor's use in those facilities provided by the Government for the work performed under the contract, including electricity, data and voice communications, steam, natural gas, potable water, sewage service, and refuse collection (from existing collection points). The Contractor shall provide and maintain the necessary service lines from the existing Government outlets to the work site.

(1) Utilities specified above will be furnished at no cost to the Contractor.

(2) Existing Telephones for Contractor use will be furnished by the Government. The Contractor shall use Government telephones for official contract business only.

(3) Existing Electronic data connections will be furnished by the Government. The Contractor shall use Government electronic data connections for official contract business only.

(4) The Government will provide internal (within the Center) mail service.

END OF SUBSECTION C.5

C.6. CONTRACTOR FURNISHED ITEMS

Except for items listed in Subsection C.5, *Government Furnished Property and Services*, the Contractor shall provide all facilities, equipment, materials, and services to perform the requirements of this contract.

a. Parts, Components, and Materials/Supplies. The Contractor shall provide new or factory reconditioned parts and components when providing maintenance, repair, and minor construction services as described herein. All replacement units, parts, components and materials/supplies used in the performance of the contract shall be compatible with the existing equipment on which it is to be used; shall be of equal or better quality than original equipment specifications; and shall comply with the applicable contract specifications.

The Contractor shall ensure that any safety - and/or mission-critical materials and products provided by the Contractor comply with the standard or specifications to which it was purchased. The Contractor shall maintain documented evidence of their receipt-inspections which shall be subject to review, upon request, by the Government. Documented evidence shall include Contractor inspection and manufacture certification as appropriate. Safety critical materials and products include: high-strength (Grade 8) fasteners; high-pressure fittings; metal plates and shapes; and electrical/electronic parts. Mission-critical materials and products are all materials and products that, in the event of failure, could injure personnel or jeopardize the operational mission to which it is applied.

Parts and components, once installed in the Government facility, become Government property. Items not listed in the technical specifications shall be of acceptable industrial grade and quality. If the original manufacturer has updated the quality of parts for current production, parts supplied under this contract shall equal or exceed the updated quality. The Contractor shall retain the parts replaced for at least 10 working days after completion of the job and make these parts readily available for inspection by the Contracting Officer upon request. The Contractor shall obtain and maintain manufacturer's operating instructions and maintenance manuals on all new equipment installed by the Contractor. These documents shall become property of the Government and shall be turned into the Contracting Officer within five working days after completion or termination of the contract.

b. Equipment. New, replacement and rebuilt equipment shall conform to the applicable contract specifications. When purchasing equipment, the Contractor's equipment procurement specification shall include the applicable clauses from Attachment J-C33.

c. Phase-In Period Materials Option. At the start of this contract the Government may have some materials other than critical reserve items available from the previous contract. Within five (5) calendar days from start of the phase-in period, the Government will make available to the Contractor an inventory of these materials including the stock number, item description, quantity, and the Government's acquisition cost. The Contractor shall have the option of purchasing this material at the Government's acquisition cost shown on the inventory. No later than fifteen (15) calendar days prior to start of the contract the Contractor shall provide the Contracting Officer a list of the material items the Contractor will purchase. The items not purchased by the Contractor will be removed and disposed of by the Government prior to the start of the base period of the contract. The total purchase price of the materials to be purchased by the Contractor will be deducted from the first billing period.

d. Contractor Mobile Communications. The Contractor shall provide communications equipment required to perform the requirements of this contract and shall obtain FCC licenses and frequencies for the equipment. Attachment J-C3-6B provides, for information purposes only, a listing of the types and quantities of communications equipment used on the previous contract.

e. Contractor Furnished Vehicles. In accordance with contract NAS1-20243 (with the incumbent contractor), clause H.8, the successor Contractor may purchase from the incumbent contractor

any contractor-provided vehicles purchased for and used in performance of contract NAS1-20243. The contract clause further provides that the incumbent contractor agrees to sell the vehicles to a successor contractor at their depreciated value based on the Contractor's depreciation schedule. The available vehicles and their depreciated value are listed in Attachment J-C3-6A. The Government will not perform maintenance or repair on any Contractor furnished vehicles. The Contractor agrees to utilize any vehicles purchased under the above-cited option solely in performance of this contract. Further, all costs of purchasing and maintaining such vehicles shall be included in the firm fixed price.

END OF SUBSECTION C.6

C.7. GENERAL REQUIREMENTS AND PROCEDURES

a. Licenses and Certification. Licenses required of the Contractor to conduct business (i.e. local or state business licenses) shall be obtained prior to beginning work on this contract. Personnel licensing and certification shall be complete before that individual performs any work under this contract. The Contractor shall submit verification of all licensing and certifications to the Contracting Officer within 30 days after contract award and within one (1) day upon any personnel change thereafter. All licenses and certificates shall be current and shall be kept current throughout the contract period.

b. Staffing. The Contractor shall provide personnel that have the appropriate skill for that trade. The degree of skill of individuals shall be commensurate with that required for the work. All apprentices shall be supervised and have all work checked by the applicable lead journeyman in their particular field. This requirement applies to all crafts. It is the Contractor's responsibility to provide training for worker qualification or re-certification. Journeymen requirements are defined in Subsection C.4, Definitions.

(1) Heating, Ventilating, Air Conditioning, and Refrigeration (HVAC/R). All mechanical work shall be performed by mechanical tradesmen who have in their possession a current Apprentice, Journeyman, or Master's mechanical license card, as issued by the state of Virginia or who have six years documented experience in the trade. When mechanical tradesmen do not have such a Virginia card or license, the Contractor shall submit for approval, evidence that such tradesmen have the required six years experience. Mechanics or technicians performing work on refrigerated circuits and refrigerant containing devices shall be EPA certified per Section 608 of the Clean Air Act, and shall provide certification that all service practices maximize recycling of ozone-depleting compounds for recovery and containment of refrigerants and will be followed per set requirements.

(2) Plumbing Work All plumbing work shall be performed by plumbing tradesmen who have in their possession a current Apprentice, Journeyman, or Master's plumbing license card, as issued by the state of Virginia or who have six years documented experience in the trade. When plumbing tradesmen do not have such a Virginia card or license, the Contractor shall submit for approval, evidence that such tradesmen have the required six years experience.

(3) Electrical Work All electrical work shall be performed by electrical tradesmen who have in their possession a current Apprentice, Journeyman, or Master's Electrical License Card, as issued by the State of Virginia, except as indicated below under requirements for those working on the Centers high voltage electrical distribution system (2,200 volts and above). When electrical tradesmen do not have such a Virginia license, the Contractor shall submit for approval evidence that such tradesmen have equivalent permits issued by other Governmental jurisdictions. Such equivalency submittals shall include documentation defining the criteria required for licensing by the involved jurisdiction, so that the Contracting Officer can determine that valid equivalency exists. Electrical technicians working on the Centers high voltage electrical distribution system (2,200 volts and above) shall be journeymen technicians or mechanics. They shall have two (2) years experience with high voltage systems and equipment or an equivalent level of training in the high voltage area that is acceptable to the Government. Apprentices and helpers working on the high voltage electrical distribution system shall be under the supervision and work only in the direct presence of a journeyman technician or mechanic.

(4) Alarm Systems. Personnel performing work on fire protection systems shall be journeyman level workers holding current Original Equipment Manufacturer (OEM) training certificate for all fire alarm and gas detection systems being inspected, tested, repaired, modified or maintained. All electricians and technicians shall be trained and certified in writing as qualified to work on systems or electrical devices. A technician certified on the

system being worked on shall be present and in charge during all inspections, testing, and any authorized maintenance and repairs.

(5) Utility Control System (UCS).

(a) Operators. The Contractor shall provide individuals with a minimum of three (3) years working experience in the energy management field and at least one year experience with expertise using software provided and equipment used at LaRC (See Attachment J-C27-15B).

(b) Technicians. Technicians shall be proficient in three areas – field, console, and repair. The "field" workers shall have extensive experience in all end item devices such as duct sensor, wall sensor, pressure sensors, and variable air volume systems. Technicians shall have demonstrated proficiency in programming UCS related computers, Field Interface Devices (FID), and other standard control devices. Technicians shall be competent to perform trouble shooting of end item hardware, including communication modem problems and configuration of the field end devices. The "field" workers shall also be competent to support installation and checkout of newly constructed systems. The "repair" workers must be able to repair control cards, field sensors, FID, and some breadboard of new techniques.

(6) Corrosion Control The Contractor's manager or field supervisor shall currently possess a National Association of Corrosion Engineers (NACE) certification which is considered a professional recognition through the NACE International Coating Inspector Training and Certification Program. This manager or field supervisor shall also have at least five years of past proven experience on containment assembly, scaffolding assembly, lead abatement, and leadership skills.

(7) Crane and Lifting Systems The Contractor shall be licensed by the State of Virginia to provide the maintenance, inspecting, testing and repair services specified on crane systems. All work shall be performed by journeyman crane mechanics specifically qualified, trained, experienced, and certified as critical lifting operators and high workers as defined in LHB 1740.6, Personnel Safety Certification, to work on crane systems and related equipment.

(8) Elevator Maintenance and Repair. The Contractor shall be licensed by the State of Virginia to provide elevator maintenance and repair services. All work shall be performed by journeyman elevator mechanics specifically qualified and trained to work on elevator, dumbwaiter, and manlift systems and equipment.

(9) Rigging and Hauling Services. Personnel operating hauling/rigging vehicles or equipment such as flat bed trucks, cranes, cars, forklifts, closed vans, portable cranes, etc. must have a valid Virginia State driver's license for the type of equipment being operated. Contractor personnel involved in lifting operations (both riggers and equipment operators) at LaRC shall have received training and certification that meets the minimal requirements defined in LAPG 1740.6, Personnel Safety Certification, included in the LaRC Safety Manual.

c. Safety Requirements and Reports.

(1) Safety. The Contractor shall provide all safety equipment required to perform the work specified in this contract, except as specified herein. All work shall be conducted in a safe manner in accordance with the LaRC *Safety Manual* including LHB 1740.2, *Facility Safety Requirements and* LHB 1740.1, *Training and Certification of Operators and Riggers to Perform Lifting Operation at LaRC*, and shall comply with all OSHA, state, and local regulations. The Contractor shall demonstrate proactive and innovative safety practices on a continual basis throughout the contract period.

(2) Safety Clearance Procedures (Red Tag). The Contractor shall provide certified Safety Operators to perform Safety Clearance Procedures in accordance with policies and procedures in LAPG (Langley Procedures and Guidelines) 1710.10, *Safety Clearance Procedures (Red Tag)*, as specified in Paragraphs (a) and (b) below:

(a) The Contractor shall perform red tagging procedures to secure systems and equipment in the performance of this contract. Included are electrical systems up to 115,000 volts, high-pressure systems up to 12,000 PSI, and various mechanical systems and equipment including for example those involving hydraulics and high vacuum. This tagging is considered to be a part of the PM, Service Request, Work Request, or Trouble Call being performed by the Contractor.

(b) The Contractor shall perform specific tagging, as requested by the Government, to secure the systems and equipment in (a) above for access by other contractors and Government personnel. This tagging service is IDIQ work and shall be handled in accordance with Subsection C.13., *General Requirements and Procedures for Non-recurring (Indefinite Quantity) Work.*

(3) Accidents. The Contractor shall report to the Contracting Officer, exposure from any hazardous substance, possible exposure from any hazardous substance, and all accidents resulting in death, trauma, occupational disease, serious bodily injury, or environmental damage. All accidents shall be reported to the Contracting Officer as soon as practicable, but no later than 4 hours of occurrence during regular working hours, or no later than 24 hours of occurrence after regular working hours. The Contractor must complete a NASA LaRC mishap report.

(4) Damage. In the event of damage to Government property, equipment, or the on-site environment by Contractor employees, the Contractor shall submit to the Contracting Officer a full report of the damage. All damage reports shall be submitted to the Contracting Officer by the next business day following of the occurrence.

d. Emergency Procedures. The Contractor shall ensure that Contractor employees have established procedures to report any accident, fire, toxic chemical, electrical, security, flooding, or police emergency.

e. References and Technical Documents. Publications and other pertinent documents referenced in this specification are indicated in Attachment J-H1.

f. Standards. All work shall meet the standards specified herein and shall be accomplished in conformance with approved and accepted standards of the industry; equipment manufacturers; all applicable LaRC, local, state, and federal standards; and all applicable facilities and safety codes. For construction projects and some repair work, NASA LaRC may choose to use the SPECSINTACT system (Attachment J-C30), which is an automated specification processing, storage and retrieval system for preparing contract documents.

(1) When the Contractor completes work on a facility, that facility shall be free of missing components or defects which would prevent it from functioning as originally intended and/or designed. Corrective or repair/replacement work shall be carried to completion including operational checks and cleanup of the job site. Except where otherwise noted, replacements shall match existing in dimensions, finish, color, and design.

(2) During and at the completion of work, debris shall not be allowed to spread unnecessarily into adjacent areas or accumulate in the work area itself. All such debris, excess material, and parts shall be cleaned up and removed at the completion of the job and/or at the end of each day work is in progress.

g. Not used.

h. Removal of Obsolete Equipment. Appropriate property disposal procedures required by NHB 4200.1, Equipment Management Manual must be followed (See Subsection C.7.t., *Housekeeping*). Unless directed otherwise by the Contracting Officer, the Contractor shall, when removing old or obsolete equipment, remove the electrical wiring, conduit, and control boxes from the equipment to the power source. The power source shall be de-energized and disconnected prior to disconnecting the load or cutting the cables in accordance with LAPG 1710.10, *Safety Clearance Procedures (Red Tag)* and Subsection C.7.c. (same title).

i. Equipment under Manufacturer's or Installer's Warranty. Equipment, components, and parts, other than those installed under this contract, shall not be removed or replaced or deficiencies corrected while still under warranty of the manufacturer or the installer without prior approval of the Contracting Officer. The Contractor shall be responsible for tracking equipment, component and part warranties on those items that are installed during the term of this contract and for which the Contractor shall become responsible after construction/installation is completed. All defects in material or workmanship, defective parts, or improper installation and adjustments found by the Contractor on equipment, components, and parts installed by others shall be reported to the Contracting Officer within three (3) working days from discovery so that necessary action may be taken.

j. As Built Drawings.

(1) Drawings of facility and associated equipment/systems are maintained in the LaRC Engineering Drawing Files, Building 1130T2. Copies of these drawings will be made available to the Contractor upon request.

(2) All changes or additions to facilities made by the Contractor shall be recorded and provided to the Contracting Officer within 30 calendar days of the completed work. These data shall include, but is not limited to, dimensioned drawings, red lined drawings, and/or sketches which shall depict the actual completed work.

(3) LHB 1740.3, Section 6, *Configuration Management Program*, lists 47 high-risk facilities/systems under configuration control. When the Contractor makes a change to one of these 47 facility/systems a Change Notification Sheet (CNS) shall be prepared and submitted to the Contracting Officer prior to completion of the change. See Attachment J-C7-31 for a copy of the Change Notification Sheet.

k. Interface With Government Personnel and Other Contractors.

(1) Facility Management. At Langley Research Center a seven (7) zone management structure has been established to assign facility maintenance management responsibility. The zones are as follows:

1, 2, and 3 – Research Facilities
4 –Research Laboratories/Shops
5 – Major Utilities
6 –Institutional Building/Facilities
0 – Other Center Wide Systems

(a) Zone Management Organization. Zones 1,2,3,4, and 6 have Zone Maintenance Managers (ZMM) and Assistant Zone Maintenance Managers (AZMM); and Zones 0 and 5 have a ZMM only. The ZMM and AZMM are Government employees who manage and coordinate all maintenance, repair and construction activities within the respective zone. The Contractor shall coordinate all facility and equipment related activities with the ZMM

or AZMM. The Contracting Officer will provide a list of ZMMs and AZMMs within ten calendar days following contract award.

(b) Facility Coordinator. The current list of Facility Coordinators will be made available to the Contractor. The Contractor shall notify the Facility Coordinator of any work to be performed in a building under the Coordinator's control. The Contractor shall notify the Coordinator at least two working days in advance of such scheduled work. Notification shall include the location of the work, type of work to be done, and the estimated completion date. The Contractor shall reschedule any work that the Contracting Officer deems necessary to avoid unacceptable disruptions in the Government's business.

(2) Cooperation with Other Contractors. Other contractors and/or Government personnel are engaged in similar and supporting work, requiring close cooperation. The Contractor for this contract shall cooperate with Government personnel and all other contractors and avoid conflicts with other's performance and work schedules. Under no circumstances shall additional work be performed at the request of unauthorized Government personnel or another contractor without proper approval of the Contracting Officer.

The Contractor shall be responsible to the Government for acts and omissions of its own employees and of subcontractors and their employees. The Contracting Officer will not undertake to settle any differences between the Contractor and his subcontractors, or between subcontractors. All business pertaining to the contract shall be conducted through the Contractor. If the Contractor specifically authorizes in writing a subcontractor to act as his agent, he shall state the specific authority conferred. The Contractor shall also be bound by any agreement made between the agent acting within the scope of his authority and the Government.

The Contractor shall afford other Contractors reasonable opportunity for the introduction and storage of their materials and equipment and the execution of their work. The Contractor shall conduct his work so as not to impede or interfere with the work of such other Contractors or persons engaged in or about the site. Whenever any work performed by the Contractor adjoins or affects any work by any other Contractor, the Contracting Officer will decide any disputes between the Contractor and such other Contractor. The Contracting Officer's decision, in writing, shall be final and conclusive upon both parties.

If the Contractor causes damage to the work or property of the Government or any other Contractor at LaRC, the Contractor shall, upon due notice, repair such damage or pay for such repair as directed by the Contracting Officer. If such other Contractor sues the Government on account of any damage alleged to have been so sustained, the Government will notify this Contractor who shall defend such proceeding, and if any judgment or award against the Government arises therefrom, this Contractor shall pay or satisfy it and shall reimburse the Government for all attorneys' fees and court costs which the Government has incurred.

The Contractor shall not endanger any work of any other Contractors by cutting, excavating or otherwise altering any work of any other Contractor, except with the written consent of the Contracting Officer.

In the event of conflicts with other Government personnel or contractors that cannot be satisfactorily resolved, the matter shall be referred to the Contracting Officer for decision.

l. Notice of Equipment Shutdowns. Prior approval shall be obtained from the Contracting Officer, except in emergencies, for work requiring shutdown of equipment. All such requests must be submitted at least 72 hours in advance. In cases where shutdown is urgent or an emergency, the Contractor shall coordinate the shutdown with the Facility Coordinator in the affected building.

m. Electrical Power, Steam and Water (Utilities) Outages. The Contractor shall shutdown, restart, and perform operational checks on all equipment affected by both scheduled and unscheduled utilities outages as a Trouble Call (See Subsection C.11). The historical data in Attachment J-C8 includes such instances of repair. The Contractor shall inform the Contracting Officer as far in advance as time permits of dates, times, facility(s), and equipment/system(s) that will be affected by such utilities outages. The Contractor shall coordinate all scheduled utility outages with the Facility Coordinator of affected facilities.

n. Damages Caused by Weather Conditions, Vandalism or Accidents. Work required to repair facilities or equipment damaged by weather conditions (See Disaster Preparedness, below), acts of vandalism and/or accidents shall be performed as a trouble call (See Subsection C.11). The historical data in Attachment J-C8 includes such instances of repair. Repairs exceeding TC limits shall be reported to the Contracting Officer for action.

o. Reporting System and Equipment Deficiencies. Any system or equipment deficiency noted by the Contractor during performance of operational checks, preventive maintenance, Trouble Calls, or service work shall be reported in writing to the Contracting Officer and recorded in the CMMS as stated below:

(1) Deficiencies discovered that could potentially jeopardize the operation of items of equipment in research facilities shall be reported to the Contractor's work control center by phone within one hour after discovery. Following conformation of the deficiency, the Contractor shall immediately notify the Contracting Officer by phone. Deficiencies noted that could potentially jeopardize the operation of equipment in all other facilities shall be reported to the Contractor's work control center and entered in the CMMS by 9:00 AM the following work day.

(2) All non-operation-threatening deficiencies noted shall be reported to the Contracting Officer within one work day of discovery. If non-operation-threatening deficiencies are discovered during operational checks, deficiencies shall be reported to the Contractor's work control center not later than 9:00 AM the following workday and recorded in the CMMS within five working days.

p. Freeze Protection. The Contractor shall provide freeze protection to winterize certain facilities in the fall and to reverse the process in the spring in accordance with the NASA LaRC Freeze Protection Program. The Preventive Maintenance (PM) program (Attachment J-C9) includes the Freeze Protection Program requirements. The Contractor shall be liable for correction of any and all damages incurred as a result of failure to adequately protect equipment under these conditions. The Contractor shall notify the Contracting Officer of any equipment or systems not included in the PM program for winterizing which requires such action to prevent freeze damage.

q. Disaster Preparedness. The Contractor shall provide support as required by LHB 1046.1, LaRC Emergency Plan, LHB 1047.1, Disaster Control Data, Hurricane and High Tides, and the General Requirements for Snow and Ice Removal, Subsection C.27.i. to maintain and protect LaRC facilities. Where facilities damage is sustained because of a disaster the contractor shall take appropriate immediate action to prevent/limit further damage in accordance with the LaRC Emergency Plan. All work associated with this disaster support, repairs and work associated with returning the center to normal operations is included in the indefinite quantity portion of the contract, Subsection C.13 unless within trouble call limits.

r. Hazardous Materials. The Contractor shall be responsible for handling, removing, working with, and/or packaging for disposal, hazardous materials including asbestos, polychlorinated biphenyls (PCBs), coatings and corrosion control waste, and contaminated waste oil as encountered in the performance of the requirements in Subsections C.15 through C.31 or as directed by work request. This work shall be performed in accordance with applicable OSHA, EPA, and state regulations. The requirement for the purchase of hazardous materials and hazardous materials

inventory are includes in LAPG 1710.12, Potentially Hazardous Materials, and LHB 8800.1, Environmental Program Manual. The Contractor shall have access to the LaRC internet for hazardous materials inventory and tracking purposes. The Government will provide e-mail accounts for all inventory managers. The Contractor may use Government furnished computer equipment to use the Chemical Materials Tracking System (CMTS). The minimum requirements can be found at http://osemant1.LaRC.nasa.gov/cmts/instruct/.

(1) Emergency Tasks. For emergencies and special circumstances the COTR may grant a waiver allowing the Contractor to purchase hazardous materials prior to obtaining approval through the Government process. The Contractor shall purchase only materials needed for the specific task and shall enter all approval forms required for the hazardous material purchase within three working days of the purchase.

(2) Removal and Disposal. In this contract, unit priced tasks do not include hazardous material removal. Disposal of hazardous waste will be by others.

s. Equipment Procurement and Servicing. Attachment J-C33 provides in-service and acceptance criteria for equipment being procured or serviced under the terms of this contract. The Contractor shall use these criteria (contract clauses) in procuring and accepting new, replacement, and/or reworked equipment and for PM and PT&I work where applicable in this contract.

t. Housekeeping. The Contractor is responsible for the cleanliness of all work areas, including the sweeping and mopping of floors. Waste materials, trash and other debris shall be removed from the job site on a daily basis, and the Contractor shall deposit such material in appropriate containers for disposal. Hazardous materials shall be handled as specified herein. Materials determined by the Government as having salvage value shall be removed from the facility and delivered by the Contractor to a location designated by the Contracting Officer for disposal or storage. The Contractor shall place all scrap metal in designated containers for disposal by the Government.

u. Handling/Protection Of Contractor Material And Equipment. All shipments shall be addressed to the Contractor and he shall be responsible for their receipt, unloading, handling, and storage at the site. The Government will not accept deliveries on behalf of the Contractor or his subcontractors, nor assume any responsibility for security of materials, equipment or supplies delivered to the site. The Contractor shall at all times protect and preserve all materials, supplies and equipment to be used in the performance of this contract. If, as determined by the Contracting Officer, material, equipment, supplies and work performed are not adequately protected by the Contractor, such property may be protected by the Government and the cost thereof will be charged to the Contractor.

END OF SUBSECTION C.7

C.8. MANAGEMENT

The Contractor shall manage the total effort associated with the recurring and non-recurring work, including operations, maintenance, repair, and all other services required in this Statement of Work to assure fully adequate and timely completion of services in this contract. Included in the firm fixed price portion of the contract is the management as described herein for the firm-fixed-price work and the guaranteed portion of the IQ work. (See B.3) Included in the management function is a full range of duties not specifically included elsewhere in Section C. These include but are not limited to such areas as payroll, purchasing, personnel, planning, scheduling, incidental engineering, estimating, cost accounting, subcontract administration, safety, Facility Coordinator, financial reporting, establishing and maintaining management records, and quality control. The Contractor shall provide an adequate staff of personnel with the necessary management expertise to assure the performance of the work in accordance with sound and efficient management practices, this contract and NHB 8831.2A, Facilities Maintenance and Energy Management Handbook.

a. Work Control. The Contractor shall implement all work control procedures necessary to ensure timely processing of work requirements, as well as to permit tracking of work in progress. Work Control shall include receipt and performance of trouble calls, recurring work identified in Section C (including PM), and non-recurring work from the Indefinite Delivery Indefinite Quantity portion of the Contract.

(1) Processing. The Contractor shall plan, estimate, and schedule all work to assure material, labor, and equipment are available to complete work requirements within the specified time limits and in conformance with the quality standards established herein. All Work/Service requests (WSR) and Trouble Calls shall be entered into the CMMS daily.

(2) Scheduling. The Contractor shall schedule and arrange work so as to cause the least interference with the normal occurrence of NASA LaRC operations. In those cases where some interference is unavoidable, the Contractor shall make every effort to minimize the impact of the interference and its effects on facility occupants or users. Except for the Annual Maintenance Shutdown (see below), the intent of the Government is to allow the Contractor to develop an optimal formal schedule rather than impose a fixed schedule which in some cases may not be appropriate or cost effective. However, one of the fundamental objectives of the Contractor's maintenance and repair program shall be to reduce facility downtime for the performance of both maintenance and repair related activities. In developing PM and other work schedules, the Contractor shall consider and rely on contract requirements, past Government records, the Contractor's own experience, and industry standards and guides. All work schedules required by this statement of work shall be entered in the CMMS and made available to the Contracting Officer. If the Contracting Officer determines that the Contractor's schedule conflicts with critical NASA LaRC operations, the Contractor shall modify the schedule as required.

(a) Annual Maintenance Shutdown. Annual facility shutdowns take facilities and associated systems and equipment out of service to perform preventive maintenance (PM) tasks, trouble calls (TC) which have been approved for delay, indefinite quantity repairs which have been identified and held for the shutdown, and modifications and new construction planned for the shutdown period. The Contractor, Government, and other contractor personnel will accomplish the shutdown work in a coordinated effort within the planned schedule. Occasionally two (2) and three- (3) shift work may be required to accomplish these shutdowns. The shutdown schedule is prepared by the Government and issued in September of each year for the following fiscal year. The shutdowns start in October and extend throughout the year and encompass almost all facilities at LaRC. See Attachment J-C 9-12A for the FY 1998 schedule.

NASA LaRC occasionally reschedules annual facility maintenance shutdowns due to unforeseen facility operational requirements. Accordingly, the Contractor is required to

revise its schedules to accommodate the changed schedule. The Contracting Officer may also request, in order to reduce a specific facility's downtime due to unforeseen facility operational requirements, that some or all of the Annual Maintenance Shutdown work be scheduled and performed at times when the facility is not operating, such as during scheduled repairs (by the Contractor or others), or during specified test article or test facility configuration changes. A list of typical facility shutdown period changes is included in attachment J-C9-12A. Notice of changes to the work planned for the Annual Maintenance Shutdown will be provided to the Contractor not less than 15 days before the scheduled event. These schedule changes, which may occur several times during the year, shall be performed at no additional cost to the Government.

(b) Monthly Work Schedule. The Contractor shall develop and follow a Monthly Work Schedule (MWS) for all work specified in this contract excluding Trouble Calls. The first MWS shall be available in the CMMS and one (1) legible hard copy provided to the Contracting Officer fifteen (15) working days prior to the start of the contract. The MWS for the second and following months shall be made available to the Contracting Officer in the CMMS along with one furnished hard copy no later than the 10th of the month prior to the month when the work is scheduled to be performed. The schedule shall include the planned PM work for each specific piece of equipment to satisfy the requirements shown in the LaRC PM program (Attachment J-C9), and shall also include IDIQ work by work /service request (WSR) number, and title. For all work, the MWS shall indicate the facility number; work to be performed, planned schedule and frequency if appropriate (e.g., monthly, weekly, etc.). Changes or additions to any job that prevent the Contractor from completing the work on time, which change the scope of the work or change the schedule, shall be reported to the Contracting Officer in the weekly update (see paragraph (c) below).

(c) Weekly Updates to the MWS. The Contractor shall develop weekly updates to its MWS for the purpose of addressing any changes, additions, or deletions to the planned work. Deviation from the MWS is permissible only when due to inclement weather, emergencies or issues beyond the Contractor's control, or by approval or direction of the Contracting Officer. The reason for any change to the MWS shall be included in the weekly updates. These updates shall be made to the MWS in the CMMS and discussed with the Contracting Officer weekly at a meeting to be held at a time mutually agreed upon by the Contractor and the Contracting Officer.

(d) Annual Work Plan. The Annual Work Plan will be used by NASA LaRC to budget and plan for maintenance, and provide an opportunity for the Contractor to identify trends and propose changes to the maintenance approach at NASA LaRC. The Contractor shall prepare the Annual Work Plan in two phases.

1 Phase One. In Phase One the Contractor shall assemble historical information (usually from the CMMS) in order to provide an accounting of work performed. One of the primary purposes of this report is to identify emerging trends. Data shall be provided for the entire report period and shall address work in each facility, area, structure, system or other category. The report shall also identify additions and deletions to the inventory of facilities to be maintained. The Phase One report shall be prepared in the contractor's format and submitted to the Contracting Officer for approval within 30 days after the end of each contract year.

2 Phase Two. The Phase Two report shall be a review of the maintenance approach and a proposal from the Contractor regarding implementation of possible changes to NASA LaRC maintenance program. When proposing changes to NASA LaRC maintenance approach, the Contractor shall use a Reliability Centered Maintenance (RCM) strategy. The RCM strategy provides an approach for determining the most effective maintenance mix and includes run-to-failure, condition-based maintenance,

and interval based (time, cycles, operating hours) maintenance. Developing an RCM program often includes performing statistical analyses of historical data related to failures and applying risk assessment techniques to identify those processes or systems that statistically exhibit the greatest chance of catastrophic failure and determine the optimal investment of maintenance resources. Some RCM program development and PT&I analysis has been performed by NASA LaRC and will be furnished to the Contractor for his evaluation within 180 days after the contract start date. The Contractor shall build upon and expand that work in the Phase Two report. The Government will consider all proposed maintenance program changes, even those changes that reduce the Contractor's recurring work load; provided the rationale for changes demonstrates that the resulting program will maintain or increase current facility reliability and availability. (Proposed changes that result in reducing the Contractor's recurring workload will be handled under the "Shared Savings Clause" in the contract.) The rationale to support changes to the maintenance program shall include such items as root cause failure analysis, material condition analysis, and other RCM analysis techniques. Proposed changes could include substitution of Predictive Testing and Inspection (PT&I) for time-based preventive maintenance. The report shall identify which facilities have been reviewed, inherent reliability problems, ineffective maintenance, and emerging maintenance issues. Proposed approaches shall include schedules that account for facility user requirements and the Annual Maintenance Shutdown schedule. The Phase Two report shall be prepared in the contractor's format and delivered to the Contracting Officer within 30 days after approval of the Phase One report.

3 Timeliness. Both phases of the plan shall be completed within the time frame stated above.

4 Quality. A complete plan encompasses all appropriate facilities and addresses all items identified in Phase One, and provides a technical rationale and identifies risk associated with all proposed changes (including probability of failure and effect on facility availability or safety).

b. Subcontract Administration (SA). SA services shall be furnished when facilities maintenance repair activities are subcontracted. See attachment J-C8 - 8 for historical information on tasks that have been subcontracted in the past. SA services include the preparation of bid packages, solicitation of bids, award and administration of subcontracts, oversight and management of construction activities, quality control and resolution of technical or warranty issues. Most projects requiring SA services deal with institutional facilities and equipment such as replacement of HVAC and cooling tower systems, resurfacing built-up roofs, repainting structures or facilities, and resurfacing asphalt roads. Occasionally, however, industrial type construction work may be required, such as work on structural, mechanical, or electrical equipment required in support of LaRC research facilities. SA projects are ordered in accordance with Subsection C.13, General Requirements and Procedures for Non-recurring (Indefinite Quantity) Work.

(1) Subcontract Administration Plan. The Contractor shall develop a SA Plan for providing subcontracted services at LaRC. The objective is to perform subcontracted services in accordance with written and bound procedures to ensure compliance with this specification, applicable codes, standards, regulations and acceptable industry practices. The procedures shall cover the receipt of work/service requests (WSR) considered for subcontracting, resource identification and approval, bid package processing and award, and job status reporting. Procedures shall also address record keeping and documentation, job coordination, Government progress reviews and approval, approach for resolving technical and warranty issues, and any other appropriate procedures for standardizing the furnishing of SA services. A draft initial plan shall be submitted to the Contracting Officer for approval within 90 days of the contract start date, and the final plan shall be submitted for approval within 45 days after the Contractor receives the Government's response to the initial plan,

unless otherwise noted. The Contractor shall review the Plan at least quarterly, make updates, and resubmit the updated Plan (or a written memorandum validating that the existing Plan is still accurate in all respects) to the Contracting Officer for approval by the third work day of the start of each quarter. Deviation from the approved standard operating procedures is acceptable only with the approval of the Contracting Officer.

(2) SA Documentation. A complete record of each subcontract shall be furnished within 45 days of project completion and Government acceptance of the work. The record shall comprise a history of the contract, including a copy of the contract, all original approvals (shop drawings, material samples, and tests), construction logs and photographs, vouchers, invoices, quality control documentation including Contractor's inspection records, dig permits, change orders, claims, warranties, certification and acceptance documents.

c. Data Management. The Contractor shall perform all data management required in this PWS. Many of the work elements of this solicitation can be effectively and efficiently performed through the CMMS. Data management includes maintenance work receipt and classifications, scheduling, material inventory control, labor scheduling, work completion records (to include labor and material reporting), work status, and report generation. Maintenance will be classified by the following NASA LaRC work elements: Preventive Maintenance, Predictive Testing & Inspection (PT&I), Programmed Maintenance, Repair, Trouble Calls (Routine and Emergency), Replacement of Obsolete Items, Work Request, and Service Request.

(1) Computerized Maintenance Management System (CMMS). NASA LaRC is in the process of developing and implementing, in phases, a new Computerized Maintenance Management System (CMMS). The first phase of the CMMS, projected for implementation in the spring of 1999, will include the equipment inventory, preventive maintenance program, and the trouble call and Work/Service Request (WSR) tracking system. A major element of the Government owned CMMS will be Maximo 4.0, a Project Software & Development, Inc. (PSDI) system which is described in Attachment J-C12. This CMMS system will be made available to the Contractor for the duration of the contract. The Contractor may utilize other electronic systems for its internal use if desired, but the CMMS data base must be kept current in accordance with this contract at all times. In this contract where requirements to enter data in the CMMS is not within the capabilities of Maximo other appropriate electronic format may be used. The CMMS database shall be populated and updated by the Contractor to reflect all work performed on facilities, systems and equipment at NASA LaRC. This database is intended to provide the Government a record of the execution of required maintenance tasks, of work tracking, reporting, and planning, and for recording historical information. The Government will be responsible for the system administration of the CMMS. All facility, system, and equipment records and reports maintained in the CMMS are Government property and shall be turned over to the Contracting Officer at the end of the Contract.

(2) Facility History Files. The Contractor shall establish Facility History Files for each facility listed in Attachment J-C1 - 21A. The purpose of the file is to serve as a repository for documentation related to work performed by the Contractor. The file shall include all associated drawings, manufacturer's literature, brochures and pamphlets, maintenance and operator's manuals, parts lists, warranty information and other pertinent documentation not included in the CMMS. Initial file assembly shall be completed within 90 days of the contract start. Once established, all documents from on-going work shall be placed in the Facility History File within 10 working days of the completed work. The Facility History File shall be submitted to the Contracting Officer at the completion of the contract.

(3) Records and Reports. The Contractor shall maintain management, operation, and maintenance records and prepare management, operation, and maintenance reports and submit them as set forth in Attachment J-C6, "LIST OF REQUIRED RECORDS AND REPORTS." All records and copies of reports shall be submitted to the Contracting Officer at contract completion unless otherwise stated in these specifications. The information shall be

submitted by electronic means where possible, and need not duplicate information already in the CMMS.

(4) Communications. For trouble calls, recurring and non-recurring work, the Contractor shall be responsible for sustaining feed back and direct contacts with all customers (See also Subsection C.7.k.). The Contractor shall ensure that in each case there is a complete mutual understanding of each WSR description of work, schedule, access requirements, and acceptance criteria. The Contractor shall keep the Contracting Officer advised of any interference problems or necessary changes in the work, preferably in advance, and shall notify the Facility Coordinator when the work in each facility is completed. If required by the Contracting Officer, a joint Contractor/Facility Coordinator final inspection of the work shall be performed.

(5) Replacement, Modernization, Renovation. The Contractor shall modify the CMMS database to add or remove equipment data as a result of equipment installation or removal activities. For equipment installed or removed by the Contractor, the data shall be entered into the CMMS within 30 days of completion of the work. For equipment installed or removed by others, it will be incumbent upon the Government through the COTR, to furnish the Contractor with a list of the equipment to be entered into the CMMS, including all attributes associated with the equipment. The Contractor shall enter the data into the CMMS within 30 days of receipt of the equipment information from the Government.

(6) Training. Personnel who will be updating and populating the Government's CMMS, must be trained before using the system. The Government will provide the initial training and any subsequent training, required when significant updates or changes are made to the CMMS.

d. Duty Officers. The Contractor shall provide personnel to serve as NASA LaRC Duty Officers. A NASA LaRC Duty Officer shall be headquartered in the Steam Plant, 14 West Taylor Street (Facility 1215). The duty officer shall be a qualified safety operator for electrical systems up to 600 volts, pressure systems up to 125 psi, and mechanical systems. This officer is the official contact point for the Center after normal day shift duty hours, and on weekends, Government holidays, and any other time NASA LaRC regular work is suspended for any reason.

(1) Timeliness. The Contractor shall furnish a Duty Officer 24 hours a day on weekends, holidays, and any time the Center's regular work is suspended for any reason. On normal work days the Contractor shall furnish a Duty Officer beginning at the Contractor's normal Close of Business (COB) time, but not later than 4:30 PM, and ending not earlier than 7:00 AM.

(2) Quality. The Duty Officer shall provide support services and shall resolve problems arising after LaRC normal duty hours in accordance with NASA Langley Duty Officer's Handbook, LHB 1040.2 and NASA Duty Officer LAPD, 1040.1, which contains detailed instructions for the Duty Officer.

e. Facility Coordinator. The Contractor shall provide a Facility Coordinator (See Subsection C.4, Definitions) for the Government furnished facilities occupied by the Contractor, identified in Attachment J-C2. In the past, this duty has been a collateral assignment for Contractor designated building occupants.

f. Facility Condition Assessment (FCA). The Contractor shall perform an annual Condition Assessment of the facilities as follows: Zone 1 facilities in contract year 1, Zone 2 facilities in contract year 2, Zone 3 facilities in contract option year 3, Zone 4 & 0 facilities in contract option year 4 and Zone 5 & 6 facilities in contract option year 5. It is not intended that performance of this activity be a discrete event; rather, the information can be gathered during the year, as maintenance and repair work is being performed. There are various sources of important facility condition information available to the Contractor, including historical records, feedback from

Facility Coordinators, Zone Maintenance Managers, Government and Contractor-generated PT&I data, trend and root cause failure analysis, and observations from the Contractor's day to day operations. The Contractor shall assess the condition of facility interiors, exteriors and major utility and mechanical systems using the format provided in Attachment J-C6-8A. The following examples are representative (but do not constitute a complete list) of the types of deficiencies that shall be identified by building so that remedial action can be planned:

Peeling and flaking paint
Abandoned-in-place conduit, pipes, and cables
Inoperable doors and windows
Platform structural defects, weakness
Stained or broken ceiling tile
Pattern surface wear through base material
Overheated motors or other electrical devices
Unsecured, damaged or deteriorated pipe insulation
Code compliance issues
Obsolete and ineffective lighting
Leaking Pump seals
Rust stains and corrosion
Failed asphalt paving
Spalling or scaling concrete
Leaking steam traps
Worn or broken floor tile
Carpet wear paths or ripples
Tripping hazards
Unusual mechanical noise
Broken welds

This Facility Condition Assessment shall include the Annual Roofing Inspection (See Subsection C.21.h.(2)(c), *Roofing*), Annual Corrosion Control Condition Assessment (See Subsection C.17.g.), and the annual roads and surface area inspections (See C.27.e.) but shall not duplicate them. The information obtained from the Condition Assessment shall be compiled into a prioritized list of needed repairs. The recommended priorities shall consider the type, age and condition of the building and the building use. The Contractor shall provide to the Contracting Officer the completed FCA annually (in the approved format) not later than March 1.

g. Government Quality Assurance (QA). In accordance with the FAR 52.246-4, "INSPECTION OF SERVICES - FIXED PRICE" clause, Section I, all services rendered under this contract are subject to Government inspection to the extent practicable at all times and places during the term of this contract. The Government's Quality Assurance Surveillance Program is not a substitute for Quality Control by the Contractor. All findings of unsatisfactory or non-performed work will be administered in accordance with the "Consequences of Contractor's Failure to Perform Required Services" clauses of Section E. All costs associated with rework are the responsibility of the Contractor. The Government reserves the right to choose the inspection methods, define its own Predictive Testing and Inspection (PT&I) program to be used in the implementing of its QA Program, and vary the inspection methods utilized during the work, without notice to the Contractor.

h. Site and Utility Distribution System Drawings. A list of site and utility distribution system drawings are provided in Attachment J-C13, for use in conjunction with historical workload data in planning travel time impact, accessibility, and relational distances on firm fixed price and indefinite quantity work described in Section C. Site, utility, and building information are available on the internet at http:/gis-www.LaRC.nasa.gov.

i. Historical Workload Data. Historical workload data related to the work of this contract is located in Attachment J-C8.

END OF SUBSECTION C.8

C.9. WORK OUTSIDE REGULAR WORKING HOURS

Work shall not be permitted to interrupt research facility operations, except in response to emergency trouble calls. Work that involves shutting off essential services in institutional facilities (including potable water and electrical power), except in response to emergency trouble calls, shall be performed after regular work hours, on weekends, or when the facilities are not in use.

Work performed on Saturday, Sunday, holidays or outside the Government's regular working hours (see subsection *C.4, Definitions*) requires the Contracting Officer's approval at least one business day prior to the scheduled work.

END OF SUBSECTION C.9

C.10. CONTINUITY OF SERVICES

To ensure continuity of essential services, the Contractor shall fully be prepared to commence work on the start date of this contract. However, during the phase-in period, the Government will provide orientation to the Contractor's key management and supervisory personnel performing under the contract.

a. Backlogged Trouble Calls. The Contractor shall be prepared to accept approximately 100 backlogged trouble calls, as defined in the Subsection C.11, on the contract start date. Work must be completed on all of these trouble calls within 30 calendar days after the contract start date. This work is to be included in the firm fixed-price bid.

b. Backlogged Non-Recurring Work. Non-recurring work will be performed in accordance with the provisions of Subsection C.13 *General requirements and Procedures for Non-recurring (Indefinite Quantity) Work.*

END OF SUBSECTION C.10

C.11. GENERAL REQUIREMENTS AND PROCEDURES FOR TROUBLE CALL WORK

The Contractor shall receive and respond to all Trouble Calls (TC) for discrepancies with facilities, systems and equipment listed in Attachment J-C1. Historical data on TC received and their classification are set forth in Attachment J-C8. This data includes the small systems TC referred to in Subsection C.2. TC are generally reported by telephone by occupants of a facility, but may be reported by other civil servant personnel, such as Facility Coordinators, Zone Managers or their Assistants, or Facility Safety Heads. The Contractor shall not generate TC, except in those areas where the Contractor serves as the Facility Coordinator. There are two types of trouble calls: routine calls and emergency calls. Trouble calls, including emergency calls, are part of the firm fixed-price portion of the Contract, and are subject to the Section H clause entitled VARIATION IN QUANTITY - TROUBLE CALLS. The actual scope of TC work may vary from this historical data. The Contractor shall propose an annual fixed-price for the specified number of TC based on a review of the historical data and the LaRC facilities, and utilizing the Contractor's maintenance approach, experience, and expertise. The historical data, shown in Attachment J-C8, for the number and scope of TC is based on a comprehensive and consistently performed LaRC PM program, and timely identification and execution of necessary repair work. The Contractor shall ensure TC work is given the priority and staffing resources necessary in order to accomplish all TC's within the specified times.

a. Emergency TC. Emergency TC are those calls which require immediate action to stabilize the situation (including Red-Tag), eliminate hazards to personnel or equipment, prevent loss of or damage to LaRC property, restore essential services that have been disrupted, and correct performance problems that affect the operation of essential utilities, research facilities, equipment or systems. Emergency TC are limited to 16-labor hours or a total of $2,000 labor, material, and equipment cost. The Contractor shall respond to all emergency TC in accordance with the requirements stated herein, and undertake stabilization and corrective efforts immediately. (Stabilization is defined as work required to eliminate imminent personnel hazards and/or further damage to the facility and its contents.) The Contractor shall advise the Contracting Officer immediately if efforts to perform stabilization and required emergency repairs are determined to be beyond the limits for TC labor, material, and equipment costs. In such cases, upon concurrence by the COTR that the work in question is beyond the trouble call limits, an IQ work request will be issued by the Contracting Officer under the indefinite quantity portion of the contract (see Subsection C.13 General Requirements and Procedures for Non Recurring (Indefinite Delivery Indefinite Quantity Work).

b. Routine TC. Routine TC are minor facility problems that are generally responded to by grouping according to craft and location and do not usually require individual job planning. A routine TC is limited to 16-labor hours or a total of $2,000 labor, material, and equipment cost. Routine TC shall be received, recorded/documented, scheduled, and managed in accordance with Subsection C.8., Management, and requirements set forth herein. The responsibility to perform routine work under a single TC ends when the work is completed or the Contractor notifies the Contracting Officer that the work is estimated to exceed the cost limitations specified for a TC. Any effort expended and costs incurred by the Contractor prior to such notification is considered part of the original TC and will not be applied toward any indefinite quantity work which may result.

c. Receipt of TC. The Contractor shall provide a single telephone number for receipt of all TC during normal work hours and a single telephone number for the Duty Officer for receipt of calls after normal work hours and on weekends and holidays. Trouble calls shall be considered received at the time the telephone call is received by the Contractor. An individual fully familiar with the Contractor's work control procedures and the scope of this contract shall answer all telephone calls within 30 seconds. If the Contractor determines that the TC work is unrelated to this contract (another Contractor is responsible for the equipment or project), the Contractor shall direct the call to the appropriate party or notify the COTR.

(1) TC During Regular Working Hours. All TC received by the Contractor during regular working hours will be classified as either routine or emergency by the NASA LaRC originator. If the TC does not qualify as an emergency as stated in paragraph a. above, the caller should be immediately advised. In the case of a continuing disagreement over classification, the caller shall be directed to notify the COTR for resolution. A description of the problem or requested work, date and time received, location (Building number, room number, or location and equipment number, if applicable), Contractor assigned control number and other appropriate information shall be recorded and processed by the Contractor. The Contractor shall enter the initial TC data in the Computerized Maintenance Management System (CMMS) on the day the TC is received, and shall enter the final data within two workdays of when the work is completed.

(2) TC After Regular Working Hours. The Duty Officer shall receive all TC between the Contractor's Close of Business (COB) hours and 7:00 a.m. on normal work days and 24 hours per day on weekends, and holidays. Calls shall be received and classified by the Contractor as emergency, or routine in accordance with the procedures provided above and responded to accordingly. If the call is classified as emergency, the Contractor shall record appropriate information including a description of the problem, date and time received, facility identification and location, and caller's name and telephone number. The Contractor shall enter the TC data in the CMMS during the next regular working day.

d. Response to TC. The Contractor shall have adequate procedures for responding to emergency and routine TC 24 hours per day, seven days a week, including weekends and holidays. The Contracting Officer may upgrade or downgrade the classification (emergency or routine) of any TC received by the Contractor, as appropriate.

(1) Response to Emergency TC

(a) During Regular Working Hours. The Contractor shall respond immediately and must be on the job site and working to stabilize the situation and restore essential services within 15 minutes after receipt of an emergency TC during regular working hours. The Contractor shall notify the Contracting Officer by phone, within 15 minutes from reception of the emergency TC, that a call has been received and is being responded to.

(b) After Regular Working Hours. The Contractor must be on the job site and working to stabilize the situation and restore essential services within two (2) hours of receipt of all emergency TC received after regular working hours. TC after regular working hours are received by the Duty Officer, who shall call the Contractor designated person immediately and make other appropriate notifications in accordance with LHB 1040.2, *NASA Langley Duty Officer's Handbook*. The Contractor shall provide the Contracting Officer a current list of Contractor personnel which will be called by the Duty Officer for TC response after regular working hours.

(c) Timeliness. The Contractor shall commence work on emergency TC within the time frame stated above, and shall continue working without interruption to arrest the emergency condition before departing the job site (e.g., shut off water, close a gas valve, temporarily patch a roof leak, etc.). If further labor and material (follow up work) are required to complete the repair, the emergency repair shall be stabilized and accomplished in accordance with Paragraph C.11.a, *Emergency Trouble Calls*.

(d) Quality Work. All work shall be performed in accordance with the standards specified in Subsections C.16 through C.31.

(e) Procedures. The Contractor shall follow the recording and notification procedures in this specification.

(2) Response to Routine TC.

(a) Timeliness. All routine TC except those related to quality of life issues (i.e. office HVAC problems) shall be completed within ten (10) working days of receipt unless otherwise approved by the Contracting Officer. Trouble calls affecting quality of life issues shall be completed within two working days of receipt of the call. Occasionally, the Contracting Officer will classify routine TC as urgent, particularly those related to research facility operations. An urgent TC will require an accelerated completion date, as negotiated between the Contractor and the COTR. Routine calls shall normally be accomplished during regular working hours, Monday through Friday.

(b) Quality Work. All work shall be performed in accordance with the standards specified in Subsections C.16 through C.31.

(c) Procedure. The Contractor shall follow the recording and processing procedures in this specification.

(3) Response to TC for Lighting. The Contractor shall respond to TC for replacing burned out lights or blinking interior light bulbs and tubes. Lighting calls will be considered routine unless circumstances require replacement earlier. Examples requiring earlier replacement would be safety situations, impairment of work, or if the Contracting Officer classifies the TC as an emergency. Historically, LaRC has experienced approximately 130 lighting calls per month. See Subsection C.21.g.(2), *Relamping*, for air traffic lighting requirements.

e. Work Beyond the Scope of TC. When the Contractor receives/responds to a routine TC and believes that the work is beyond the scope of a TC (as defined in a & b above) the Contracting Officer shall be advised that a TC viewed as exceeding TC limits has been received. The Contractor shall then prepare a document showing a summary of the work needed and a detailed estimate of labor hour and material requirements and submit it to the Contracting Officer. Any work accomplished prior to notification of the Contracting Officer is part of the firm fixed-price TC portion of the contract and shall not be included in the detailed estimate to be provided to the Contracting Officer. The Contracting Officer may waive the requirement to submit estimates in cases where the scope of work is clearly beyond that of a TC.

If the Contracting Officer agrees that the work required is beyond the scope of a TC, the scope of the work will either be reduced and a revised TC authorization issued by the Government or the original TC will be canceled. If the original TC is canceled, the work may be accomplished under the indefinite quantity portion of the contract or by means other than this contract. In either case, whether the TC scope is reduced or cancelled, the Contractor will be credited with one TC.

If the Contracting Officer determines that the work falls within the scope of a TC, the original work authorization will be returned to the Contractor, who shall complete the work within five (5) working days from the date of the Contracting Officer determination.

f. Documentation. The Contractor shall input the following information to the CMMS within two work days after performance of each TC:

1. Building number, room number, or location and equipment number, if applicable.
2. Date and time call received.
3. Description of work actually completed.
4. Control number.
5. Failure Code (See Attachment J-C11-11A and B).

6. Brief description of material and parts used, including quantities and cost.

7. Date and time work began.

8. Date and time work was completed.

9. Hours of labor (by craft) expended.

g. Materials and Equipment. The Contractor shall maintain sufficient materials and equipment on hand to support TC work requirements. Lack of availability of materials or equipment shall not relieve the Contractor from the requirement to complete TC work within the time limits specified above.

h. Historical Data. Attachment J-C8 contains TC historical data.

END OF SUBSECTION C.11

C.12. GENERAL REQUIREMENTS AND PROCEDURES FOR RECURRING WORK

The Contractor shall perform recurring work in accordance with the provisions of this Subsection. Recurring work is a part of the firm fixed-price portion of the Contract and is identified in various Subsections of this specification. Recurring work includes the Preventive Maintenance Program, which is subject to the Section II Clause entitled "Variation In Quantity - Preventive Maintenance." Recurring work also includes providing the LaRC Duty Officer (See Subsection C.8, *Management*), various plant/system operators (See Subsections C.*15, Energy Management* and C.24, *Steam Generation, Distribution System and Remote Heating Plant Operation, Maintenance and Repair*) as well as performing Trouble Call work (see Section *C.11, General Requirements and Procedures for Trouble Call Work*). Lack of availability of craft personnel, tools, supplies, materials and parts shall not relieve the Contractor from the requirement to complete work within the time requirements and quality standards specified herein.

a. Preventive Maintenance (PM) - Definition and Repair Limitation. The Contractor shall perform PM on the facilities, systems and equipment at NASA LaRC in accordance with the procedures specified in this subsection, applicable technical subsections, and the LaRC PM Program (Attachment J-C9). This PM work is a part of the firm fixed-price portion of the contract. PM is defined as routine, periodic maintenance and incidental repair requirements associated with facilities, facility systems, and dynamic equipment. PM is concerned primarily with facility systems and equipment that, if disabled, would interfere with an essential operation (including reliability and availability), endanger life and property, or involve high cost or long lead time for replacement. PM work includes, but is not limited to, visual and operational inspection, cleaning, corrosion removal and related painting, adjustment, alignments, lubrication, and replacement of switches, meters, contractors, fuses, filters, belts, fasteners, hoses, and other expendable items required to correct or minimize operational wear and deterioration of facility systems and equipment. PM work is continuous and repetitive in nature, and is accomplished within the framework of comprehensive and detailed short and long term PM schedules. The Contractor will be held liable for the full cost of repairs if the Government determines that the cause of system or equipment failure, malfunction, or damage was due to the Contractor's failure to perform required PM work.

(1) PM Incidental Repairs. The Contractor shall accomplish incidental repair of defective equipment or system components detected at the time of PM performance. The Contractor's repair work liability in this case is limited to 2 hours labor or $300 total cost for labor, materials, and equipment, but the work shall not be classified as a TC occurrence. Repair work exceeding this limit shall be accomplished in accordance with the TC requirements stated in Subsection C.11, *General Requirements and Procedures for Trouble Call Work.* Failure on the part of the Contractor to respond appropriately to PM incidental repair requirements will be considered failure to perform required PM work, and will be addressed as indicated in paragraph a above. The only exception will be for equipment items that are classified as run to failure (reactive maintenance).

(2) PM Scheduling. The Contractor shall strictly adhere to the PM program frequencies shown in Attachment J-C9 and schedule all PM work in the MWS (See Subsection C.8). Preventive maintenance tasks to be performed in a building where the building is not available during normal work hours shall be accomplished during the second or third shifts or on a weekend. If the Contractor finds it necessary to modify a PM task frequency, a written request shall be made to the Contracting Officer detailing the reasons for the proposed change at least five (5) working days prior to the originally scheduled PM date. The Contractor shall request Contracting Officer approval by telephone or in person and follow up the request in writing where circumstances do not permit prior written approval. No scheduled PM task frequencies shall be changed without prior approval of the Contracting Officer.

(3) Timeliness. PM work shall be performed in accordance with the Annual Maintenance Shutdown Schedule, and the frequencies identified in the LaRC PM program (Attachment J-C9).

(4) Quality. Quality PM shall be assured through the Contractor's Quality Control program. Workmanship and system performance shall be in accordance with the requirements specified in this subsection, applicable technical subsections (C.16 through C.31), and LaRC PM Program (Attachment J-C9). A part of quality PMs includes site clean up, removal of debris and documentation.

b. Documentation. Required records shall be maintained in a readable, complete, orderly, and accurate manner at all times. The Contractor shall include, for each piece of equipment, the following data in the appropriate PM record upon completion of the associated work items:

(1) The date(s) when the service(s) was performed.

(2) The nature and extent of all service and repair work performed by facility, including completed PM record cards, hours worked, condition code and deficiencies found, response to discovered deficiencies, tests and inspection results and response, trouble call work performed, materials used and cost.

(3) All required records shall be kept current in the CMMS (i.e., data is entered within two weeks of PM completion) and made available to the Government for examination and reproduction at any time.

(4) Documents shall be submitted to the Contracting Officer within five calendar days of expiration or termination of the contract.

c. Predictive Testing & Inspection (PT&I). The Government has an active PT&I program utilizing Government employees to perform the testing and inspection. The only Contractor recurring PT&I work is the collection of oil samples at the locations and frequencies specified in Attachment J-C10-12B following the procedures in Attachment J-C10-12A. Where Contractor support of other PT&I activity is required, an IQ WSR will be issued in accordance with Subsection C.13, *General Requirements and Procedures for Non-Recurring (Indefinite Delivery Indefinite Quantity)Work.*

d. Other Recurring Work. Other recurring work is a broad category for fixed scheduled work not in the PM category. This work is included in the technical Subsection C.8 and Subsections C.16 through C.31 for the various facility elements covered by the contract.

END OF SUBSECTION C.12

C.13. GENERAL REQUIREMENTS AND PROCEDURES FOR NON-RECURRING (INDEFINITE QUANTITY) WORK

Non-recurring work shall be performed as part of the indefinite quantity (IQ) portion of the contract, and includes unplanned maintenance activities, repairs exceeding trouble call limits, replacement of obsolete items, minor construction, and facility rehabilitation and modification. The work also includes non-recurring support services, such as oxygen and ultrasonic cleaning, industrial instrumentation support services, calibration, testing and component verification, rigging and hauling, and corrosion control. The Contractor will be issued a Work/Service Request (WSR) for all non-recurring work as specified in the following procedures.

a. Categories of Pre-Priced IQ Work. There are two categories of pre-priced IQ work included in the contract, unit priced tasks and unit priced labor.

(1) Unit Priced Tasks. Unit priced work items are included in the Schedule of Indefinite Quantity Work - Unit Priced Tasks, Section B, *Price Schedule*. The unit prices include all costs and profit necessary to perform the specified task. Unit priced tasks may be ordered to be accomplished as stand-alone services or in combination with unit priced labor and/or material and equipment requirements.

(2) Unit Priced Labor. Unit priced labor rates are set forth in the Schedule of Indefinite Quantity Work - Unit Priced Labor, Section B, *Price Schedule*. Material and equipment requirements associated with unit priced labor shall be proposed in accordance with the procedures specified in this subsection.

b. General Procedures.

(1) WSR Reporting. The Government will issue a WSR for all non-recurring IQ work. For each IQ WSR the Government will furnish the initial data as shown below and provide the WSR to the Contractor. (In the past there have been approximately 2,500 WSR issued per year.) The Contractor shall enter all appropriate information in the CMMS as shown in the list below to keep the WSR data up-to-date as work on the task progresses. An IQ WSR is not considered complete until all information is inputted.

1 Task Order Number (Government Provided)
2 Job Order Number (Government Provided)
3 Description of Task (Government Provided)
4 Facility, Location, & Equipment Number, If Applicable (Government Provided)
5 Additional Documentation Involved: (Government Provided)
6 Requester (Government Provided)
7 Required Completion Date (Government Provided)
8 Zone (Government Provided)
9 Not to Exceed Price (FP T&M WSR only)
10 Completed Work Acceptance by Government (Government Provided)
11 Crafts (ID Number of Crafts Working on Task)
12 Date WSR Entered in CMMS
13 Revised Completion Date
14 Actual Completion Date
15 Date Task Closed (All Actions Completed)
16 Negotiated Estimated Labor Hours
17 Negotiated Estimated Material Costs
18 Approved Task Order Price
19 Failure Code, if Applicable
20 Brief Description of Material and Parts Used
21 Actual Expended Hours by Craft (FPT&M WSR only)
22 Actual Material/Equipment Expenses, Including FBR (FPT&M WSR only)

23 Equipment Condition, if Applicable
24 Equipment Down Time, if Applicable

(2) WSR Types. The Government will provide the Contractor one of the following types of WSR when non-recurring IQ work is required:

(a) Fixed Price WSR. The Government will furnish a statement of work, including schedule requirements, for each fixed price WSR. The Contractor shall review the Government's technical requirements and either accept them or propose changes before proceeding with development of the proposed cost and performance schedule. Where changes to the technical requirements or performance schedule are requested, the Contractor shall indicate specific areas of disagreement and its recommended change. Upon agreement with the Government regarding the technical and schedule requirements, the Contractor shall develop and forward to the Contracting Officer a proposal to perform the work, including the proposed cost and performance schedule, WSR number, and signature of the responsible Contractor employee. The proposed cost shall be developed as specified below (*Preparation of Contractor's Proposal for Non-recurring Work).* The Contracting Officer will either accept the proposal or negotiate any areas of disagreement with the Contractor. The Contractor shall not perform any work on a WSR until authorized by the Contracting Officer. The Contracting Officer reserves the option to accomplish the work other than with this contract.

(b) Fixed Price Time-and-Materials (FPT&M) WSR The Contracting Officer will issue a WSR including a statement of work for services with the total "not to exceed" labor and material cost indicated. Work to be included in this type of WSR are those items which occur infrequently and have response time requirements which will not allow development of a detailed statement of work or a detailed cost and schedule proposal, or for which the scope of the requirements cannot be adequately defined in advance. The Unit Priced labor rates set forth in the Schedule of Indefinite Quantity Work - Unit Priced Labor in Section B will be utilized under this type of WSR. The Contractor will be reimbursed for all direct labor expended at the unit price for that type of labor, plus actual expenses for materials and equipment with fixed burden rates (within the "not to exceed" amount indicated on the WSR).

c. Documentation. In addition to documentation requirements stated in this Subsection, the Contractor shall furnish supporting technical documents such as shop drawings, vendors' literature, and specifications in accordance with the WSR. This documentation shall be added to the Facility History Files as appropriate.

d. Preparation of Contractor's Proposal for Non-recurring Work. The Government's statement of work will be provided on a WSR, NASA LaRC Form 69 (See Attachment J-C7-13 for a copy), and will include the work description, funding source or code, schedule, and signature of approving official. The Contractor shall develop and submit proposals for non-recurring work to the Contracting Officer within five (5) days of the original receipt of the request, unless otherwise directed or approved by the Contracting Officer. The complexity of the WSR will determine the level of detail required in the Contractor's proposal. Any portion of the work requirement proposed as a unit priced task or unit priced labor shall be priced using the unit prices set forth in the price schedule. Cost of work, other than unit priced tasks, shall be developed utilizing the labor, material and equipment requirements and cost described in Paragraphs 1 through 3 below.

(1) Labor Requirements.

(a) Establishing Labor Hour Quantity. The Contractor shall furnish a proposal that includes a detailed breakdown of labor hours for each craft performing work on each WSR. Proposed labor hour quantities shall be based on R. S. Means® Facilities Maintenance & Repair Cost Data. If the R. S. Means® Facilities Maintenance & Repair Cost Data does

not apply (as mutually agreed upon between the Contracting Officer and the Contractor), the proposed labor hour quantity shall be developed from historical data, or another appropriate industry standard labor hour performance guide. Note: All hours associated with overhead, supervision, clerical support and any other administrative activities shall have been included in determining the unit price labor, Schedule B, Price Schedule.

(b) Establishing Total Labor Costs. Proposed labor costs shall be determined by totaling the number of labor hours for each craft, and then multiplying by the appropriate unit price labor category from Section B, *Price schedule*. The unit price for categories of labor not addressed in Schedule B shall be as mutually agreed upon between the Contracting Officer and the Contractor.

(2) Material Requirements.

(a) Establishing Material Quantity. The Contractor shall furnish a proposal that includes a detailed breakdown of material required to perform work on each WSR. Proposed material requirements shall include a list of materials establishing the size, quality, and number of units. Pre-expended bin supplies and materials shall not be included in the list of materials since the cost for these items should have been included in the labor unit prices.

(b) Establishing Total Material Costs. Proposed material costs shall be based on the appropriate R. S. Means® Estimating Guide, adjusted to LaRC area. If the R. S. Means® Estimating Guide does not apply (as mutually agreed between the Contracting Officer and the Contractor), material costs shall be developed from vendor quotes, historical data, or another appropriate industry standard. Proposed material costs shall include applicable transportation charges and discounts, as well as the applicable fixed burden rate (FBR) from Section B, Price Schedule.

(3) Equipment Requirements.

(a) Establishing Equipment Quantity. The Contractor shall furnish a proposal that includes a detailed breakdown of equipment required to perform work on each WSR. Requirements for equipment shall include the identification of the type, size, capacities, number of units, and hours of use for each unit.

(b) Establishing Total Equipment Costs. Equipment costs for IQ work shall include only that equipment necessary for WSR performance that is not available from either the IAGP or from the vehicles purchased as specified in Subsection C.6.e *Contractor Furnished Vehicles* (hereinafter referred to in this paragraph as such equipment). It is incumbent upon the Contractor to demonstrate the unavailability of such equipment. If such equipment is not available, the total equipment cost shall be established based on the following paragraphs:

1 Proposed equipment costs shall be based on the appropriate R. S. Means® Estimating Guide, adjusted to LaRC area. If the R. S. Means® Estimating Guide does not apply (as mutually agreed between the Contracting Officer and the Contractor), equipment costs shall be developed from vendor quotes, historical data, or another appropriate industry standard. The total equipment cost for each job shall include the applicable FBR from Section B, Price Schedule.

2 Cost for equipment operators, when separate operators are required, shall be based on the R. S. Means® standard labor hour basis, historical data, or another appropriate standard as guide lines unless operator cost is included in the equipment rental price or the operator has been provided by the Government. Any overhead

expense associated with equipment usage shall be included in the Contractor's bid for the applicable labor unit price.

e. Timeliness. All Non-recurring work shall be completed in accordance with the performance requirements established in each WSR.

f. Quality. All work, as appropriate, shall conform to the standards identified in Subsections C.15 through C.31.

END OF SUBSECTION C.13

C.14. NOT USED

C.15. ENERGY MANAGEMENT

a. General Requirements. The Contractor shall operate, maintain, repair and monitor the NASA LaRC Energy Management and Control System (EMCS) which includes the Utilities Control System (UCS) and the Energy Management System (EMS) as described in Attachments J-C27-15A and J-C27-15B. The primary EMCS function is to efficiently control HVAC, lighting, and other energy consuming equipment. The Contractor utilizing the EMCS is responsible for monitoring and reporting the energy consumption of LaRC and the Langley Air Force Base. The EMCS consists of host console computers that have the ability to provide a manned interface for monitoring and controlling remote systems through an integrated network control system. The EMCS controls the HVAC loads in 103 buildings and 104 trailers by direct digital control, radio switches, and infoscan, it monitors 235 electrical meters for energy consumption, controls the operation of 150 hot water heaters, and controls interior lights in two (2) buildings.

b. Recurring Work. Recurring work (included in the firm fixed price portion of the contract) in this subsection includes EMCS operations and incidental engineering, development of an Operation Procedures Plan, energy and utility reporting and documentation, and operator and preventive maintenance and shall be accomplished in accordance with Subsection C.12., *General Requirements and Procedures for Recurring Work.*

c. Non-recurring Work. Any repairs or new work on the monitoring equipment under this subsection greater than trouble call or operator maintenance scope are, unless specifically identified otherwise, non-recurring (Indefinite Quantity) work. This work shall be ordered from the unit price labor rates, and accomplished in accordance with Subsection C.13., *General Requirements and Procedures for Non-recurring (Indefinite Quantity) Work.*

d. EMCS Operations. The Contractor shall provide the following services as required:

(1) The Contractor shall develop an Operations Procedures Plan for EMCS operations at LaRC. The objective is to perform EMCS operations and related services in accordance with written and bound procedures to ensure safe, timely and reliable work. The Plan shall be developed using the following guidelines: (1) existing LaRC EMCS operations procedures, (2) guidelines in the *Facilities Maintenance and Energy Management Handbook*, NHB 8831.2A, Section 8.9.4.2, and (3) equipment & system manufacturer's instructions. A draft initial plan shall be submitted to the Contracting Officer for approval within 90 days of the contract start date, and the final plan shall be submitted for approval within 45 days after the Contractor receives the Government's response to the initial plan, unless otherwise noted. The initial Plan should incorporate existing LaRC documentation, procedures, and standards pertinent to this Subsection. The Contractor shall review the Plan at least quarterly, make updates, and resubmit the updated Plan (or a written memorandum validating that the existing Plan is still accurate in all respects) to the Contracting Officer for approval by the third work day of the start of each quarter. Deviation from the approved standard operating procedures is acceptable only with the approval of the Contracting Officer.

(2) Use the EMCS to provide energy conservation and management consistent with guidelines in the *Facilities Maintenance and Energy Management Handbook*, NHB 8831.2A, Section 8.9.4.2.

(3) Provide surveillance and control of the EMCS to regulate and detect abnormal conditions (i.e. outside the operating parameters) in equipment operations on a 24 hours per day, 7 days per week, basis. Historically, the Duty Officer has monitored these systems during non-regular work hours. The Facility Coordinator of the facility being monitored shall be notified when anomalies or discrepancies with equipment being monitored are detected.

(4) Maintain system integrity, including database diagnostics, provide technical support for the EMCS (UCS & EMS) and make control program modifications due to changes in building occupancy and use with Contracting Officer approval.

(5) Perform operator maintenance on EMCS equipment within facilities where operation services are provided. Operator maintenance includes inspection, tests and minor repairs up to 16 hours or $2,000 total labor, materials and equipment costs (the same as TC scope) performed by the equipment operator or watchstander and is firm fixed price recurring work. Repairs performed during the course of operator maintenance will not be considered or qualify for operator maintenance. Repairs or maintenance that exceed those limitations, and which are not covered by the Preventive Maintenance program furnished in Attachment J-C9, will be considered IQ work. The Contractor shall follow approved maintenance procedures and associated checklists in the performance of maintenance work. In addition to performing operator maintenance on on-line equipment, the Contractor shall periodically operate, inspect and service idle EMCS equipment.

(6) Maintain the EMCS database to provide for reports and when required, information such as building energy utilization, energy cost data, consumption, historical data, trends, operating demands, potential energy deficiencies, and building utilization efficiencies, and data on alarms and utility outages, and information on installation, modification, and adjustments of EMCS hardware. This information shall not be released to anyone except the Contracting Officer.

(7) Perform UNIX related systems administrator tasks for new hardware and general system maintenance such as weekly file system backups and recovery, maintain user accounts, upgrade/install software, administer software licenses, and implement security patches.

(8) Make revisions to software; modify as required host computer and panels, and field equipment and interface devices to facilitate system changes; reprogram and make upgrades as necessary; and make temporary adjustments and program changes to the UCS & EMS systems for maintenance, construction, and repairs.

(9) Maintain overview and interface with the Direct Digital Control (DDC) Systems throughout LaRC.

(10) Provide energy usage data in particular facilities and research areas upon request by the Contracting Officer

(11) Document requests by the Contracting Officer for changes in the UCS schedules including change description, the date, time, and the reason for the change.

(12) Provide calibration of UCS & EMS components as required.

(13) Provide orientation and overview of the UCS and EMCS to visitors and management as requested by the Contracting Officer.

(14) The Contractor shall provide EMCS meter readings on utilities and assist in providing information to the NASA LaRC Energy Manager as required regarding LaRC energy usage.

(15) Radio switches, ref J-C27-15A, shall be inspected and recalibrated, annually in October

e. Maintenance. The Contractor shall:

(1) Trouble shoot and correct problems and provide maintenance of the UCS and EMS systems including panels, sensors, actuators, software, networks, networks drivers, networks terminations, and other associated hardware located in the EMCS office and at the various

field locations (See Attachment J-C27-15B). Maintenance exceeding routine TC limits (See Subsection C.11.e., *Work Beyond Scope of Trouble Call*) will be performed in accordance with Subsection C.13, *General Requirements and Procedures for Non-recurring (Indefinite Quantity) Work.*

(2) Maintain the Hewlett Packard data acquisition and data reduction computer systems.

(3) Provide daily maintenance of printing and plotting equipment as listed in Attachment J-C27-15B.

f. EMCS Engineering. The Contractor shall:

(1) Evaluate new UCS, EMS and DDC products/technology and make recommendations for improvements in operations and hardware. All engineering evaluation of EMCS systems shall be performed using Life Cycle cost analysis techniques and fully comply with Executive Order 12902 and EPACT 1992.

(2) Make recommendations for future software and hardware procurements to the Contracting Officer.

(3) Provide input for future expansion and utilization of the UCS and EMS.

(4) Study, review and provide recommendations and comments to the Government on criteria, drawings, and specifications related to EMCS changes.

(5) Provide consultation on all UCS and EMS interfaces as requested by the Contracting Officer.

(6) Maintain up to date system layout schematics and drawings on the UCS and EMS to reflect the current system configuration.

g. Documents. The Contractor shall provide reports and other documentation as specified below in electronic format and in Attachment J-C6-15. Graphics and tables shall be provided in Excel.

(1) The Contractor shall submit to the Contracting Officer calculations on energy savings as a result of UCS and EMS operations in accordance with Attachment J-C6-15. The calculations shall be provided to show energy savings realized through the operation of the EMCS. The report shall be submitted by the end of October for the previous fiscal year (October 1 through September 30). An example of the report is shown in Attachment J-C6-15.

(2) Prepare and submit a quarterly report to the Contracting Officer on LaRC energy consumed. The report shall be submitted within 30 days of the close of each fiscal quarter. The report shall be prepared utilizing NASA LaRC Form 1520. An example report is shown in Attachment J-C6-15.

(3) The Contractor shall submit to the Contracting Officer the Monthly Utility Report. The report shall be prepared and submitted in accordance with Attachment J-C6-15.

(4) The Contractor shall provide to the Contracting Officer graphs of electrical usage costs with supporting documentation for all metered facilities as listed in Attachment J-C25. Examples of graphs and supporting documentation are also shown in Attachment J-C6-15.

(5) The reports above are representative of the types of reports that have been provided in the past and represent LaRC current requirements. The contractor shall modify these reports or provide other reports of system operations and controls and special reports to support

J-C6-15), which could number up to 30 per month based on past history, shall be provided under the firm-fixed price portion of the contract.

END OF SUBSECTION C.15

C.16. OXYGEN AND ULTRASONIC CLEANING AND REFURBISHMENT

a. General Requirements. The Contractor shall perform precision cleaning, refurbishment and verification of parts, components, assemblies, subsystems, systems, or related equipment at NASA LaRC in accordance with LHB 1740.5, *Procedures for Cleaning of Systems and Equipment for Oxygen Service* and other Government-approved cleaning and functional testing procedures. These services include inspections, checks, disassembly, cleaning, refurbishment, reassembly, testing, verification and packaging of components of equipment identified in Attachment J-C1-22A-G, maintenance of records and preparation of reports on the services provided on them, and contamination control. These tasks shall be performed at the site of the instruments or at the Component Cleaning and Verification Facilities, Buildings 1188 and 1284B, as appropriate. Additionally, the services provided under this subsection shall include maintenance and operation of the freon distiller in Building 1188, and chemical sampling and analysis.

b. Scope of Work. The work in this subsection includes:

(1) Trouble Call Work. Trouble calls (included in the firm fixed price portion of the contract) shall be received, managed, and worked in accordance with Subsection C.11, *General Requirements and Procedures for Trouble Call Work.*

(2) Recurring Work. Recurring work (included in the firm fixed price portion of the contract) in this subsection includes preventive maintenance and development of an Operation Procedures Plan and shall be accomplished in accordance with Subsection C.12, *General Requirements and Procedures for Recurring Work.*

(3) Non-recurring Work. Examples of non-recurring work in this subsection are the one-time cleaning, testing, calibration, verification and adjustment of a newly modified complex component; performance of a special, one-time study; and acting as consultants for component cleaning to other groups at LaRC on an as-needed basis. This work shall be ordered from the unit price labor and/or tasks listed in Section B, and accomplished in accordance with Subsection C.13., *General Requirements and Procedures for Non-recurring (Indefinite Quantity) Work.*

c. Documentation. All work shall be documented in accordance with the requirements of Subsection C.11 for Trouble Calls, C.12 for Recurring Work, and C.13 for Indefinite Quantity Work. Additionally, Attachment J-C6-16 and J-C7 - 16A - G lists the records and reports required of the Contractor as part of this work. System and equipment deficiency information obtained from failed and marginally passed tests and certifications, or noticed during trouble calls, operator maintenance or preventive maintenance work shall be reported in accordance with Subsection C.7.o, *Reporting System and Equipment Deficiencies.*

d. Operation Procedures Plan. The Contractor shall develop an Operations Procedures Plan for the cleaning, refurbishment, calibration and functional testing of various systems at LaRC. The objective is to perform precision cleaning and refurbishment work in accordance with written and bound procedures to (ensure that LaRC is provided components and systems that are safe, reliable and are cleaned, adjusted, calibrated, verified and tested with the high level of accuracy required. The plan shall be developed using the following guidelines: (1) manufacturer's instructions, (2) industry standards and (3) procedures outlined in LHB 1740.5, *Procedures for Cleaning of Systems and Equipment for Oxygen Service*. The Plan shall address:

(1) The cleaning process instructions including a detailed description, in correct sequence, of the steps to be taken, step duration, observations and adjustments to be made, verification and calibration procedures to be followed, and the qualifications of the technician who will be performing the task.

(2) Processing materials to be used, including, as applicable, trade names, specifications, and concentrations.

(3) Specific clean room requirements and/or contamination prevention measures to be taken specific to the unit being serviced. Provide air flow rate and/or particulate contaminant count for areas such as clean rooms and flow benches.

(4) Preservation and protection methods and materials to be used.

(5) Operating procedures for the freon distiller in Building 1188.

(6) Safety and accident procedures.

(7) Hazardous waste packaging and disposal procedures.

A draft initial plan shall be submitted to the Contracting Officer for approval within 90 days of the contract start date, and the final plan shall be submitted for approval within 45 days after the Contractor receives the Government's response to the initial plan, unless otherwise noted. The initial plan should incorporate existing LaRC documentation, procedures, and standards pertinent to this Subsection. The Contractor shall review the Plan at least quarterly, make updates, and resubmit the updated Plan (or a written memorandum validating that the existing Plan is still accurate in all respects) to the Contracting Officer for approval by the third work day of the start of each quarter. Deviation from the approved standard operating procedures is acceptable only with the approval of the Contracting Officer.

e. Requirements for Component Cleaning Operations. Component cleaning and refurbishment functions involve parts, components, and systems which are typified by hoses, tubing, piping, fittings, filters, soft goods, pressure vessels, regulators, pneumatic and hydraulic actuators, quick disconnects, fluid panels, gages, pumps, compressors, handvalves, pneumatic operated valves, flow control valves, relief valves, checkvalves, pressure switch and solenoid valves, transducers, sampling apparatus, and relief devices from various research facilities systems that are gas (nitrogen, helium, oxygen, freon, propane, silane, methane, hydrogen and air), hydraulic, coolant, water, cryogenic (liquid oxygen, helium, nitrogen, hydrogen, air), and/or refrigerant dependent. Subsystems and systems may require disassembly to permit cleaning. The Contractor shall perform cleaning operations at NASA LaRC, both at the Component Cleaning and Verification Facility (Building 1188) and field cleaning. Field cleaning is often complex because the size and configuration of large items make it difficult to circulate or spray solutions and to remove them completely. Whenever possible, precleaning operations, such as pickling and passivating are to be accomplished prior to installation. All systems shall be disassembled into subsystems or subassemblies whenever possible for cleaning. This work involves all of the following activities related to component cleaning, but not limited to: parts check-in and itemization; parts compatibility; chemical/ cleaner compatibility; disassembly; pre-cleaning; precision/final cleaning; verification; reassembly; check out, testing, and calibration; quality control; packaging; documentation; clean room procedures and protocol; and environmental compliance. Refer to LHB1740.5, *Procedures for Cleaning of Systems and Equipment for Oxygen Service*. The turnaround time on functional components submitted for component cleaning and refurbishment processing is to be 21 calendar days or less for routine indefinite quantity modification and rehabilitation work and in accordance with Subsection C.11., *General Requirements and Procedures for Trouble Call Work* for trouble calls, unless otherwise approved by the Contracting Officer.

(1) In-lab Operations. The in-laboratory function includes component cleaning and refurbishment operations performed at the Component Cleaning and Verification Facility (Building 1188). The required operations shall include inspection, disassembly, cleaning (to include pre-cleaning and major surface treating, as required), refurbishment (to include reassembly, testing and validation, as required), marking and packaging as described below. Also

included are minor fabrication and machining operations as required to support the component cleaning and refurbishment operations. The Contractor shall recycle all freon used.

(a) Disassembly. The Contractor shall follow disassembly procedures provided by component instruction manuals and manufacturers' instructions to the letter. Component disassembly must not damage the parts.

(b) Cleaning. Cleaning includes mechanical, ultrasonic, and chemical pre-cleaning processes to remove gross contamination, with final cleaning of components being accomplished in an environmentally controlled area using solvents.

(c) Refurbishment. Refurbishment involves the replacement of component soft goods and defective piece parts, and minor rework such as lapping valve seats, chasing threads, etc. System refurbishment consists of removal and refurbishment of system components and installation of new gaskets and other seals.

(d) Assembly. The Contractor shall follow precisely assembly procedures, component instruction manuals, manufacturers' instructions and work instructions. Proper assembly of components must be done with knowledge, skill and control to prevent damage to parts.

(e) Testing. Testing includes testing to validate cleanliness levels; functional and leak testing using hydraulics, pneumatics, and cryogenics; electrical resistance and continuity testing; valve timing; filter element bubble-point testing; and hydrostatic prooftesting. Functional testing is the final step in reworking a component. The Contractor shall certify conformance with applicable specifications for all items refurbished. Any deviations or changes to testing procedures must be approved by the Contracting Officer.

(f) Validation. Validation involves inspection, sampling, analyzing, and testing operations required to ensure that structural integrity, cleanliness level, reassembly, functional operation, and packaging of components and systems meet the required specifications.

(g) Packaging. Packaging involves the enclosure of cleaned components or systems to prevent recontamination during handling and storage and includes packaging to meet applicable requirements, either in heat-sealed polyethylene or aclar bag or sealing by taping these materials over large openings; placing certification and identification slips and/or required markings or tags (e.g., hydrostat tags) with the cleaned parts; and application of special packaging upon receipt of written requests from customers. Refer to LHB 1740.5, *Procedures for Cleaning of Systems and Equipment for Oxygen Service*, section 3.10 for acceptable procedures.

(2) In-field Operations. The in-field function includes performing component cleaning and refurbishment operations as described in Subsection C.16.e.(1) above on items that cannot feasibly be removed from their in-place locations and transported to the laboratory.

f. Chemical Sampling and Analysis. As part of each PM procedure, the Contractor shall sample and analyze materials and products specifications and perform other laboratory operations as indicated in the PM task listing. The Contractor shall provide the highest accuracy consistent with the state-of-the-art for chemical analyses, and shall provide this precision and accurate analysis data to the Contracting Officer upon request. Development of new or modified analytical methods and maintenance of procedure manuals are required to provide services and are an inherent part of this function. Government-provided sampling equipment available for the Contractor's use is listed in Attachment J-C3. Chemical sampling and analysis shall be regarded as recurring work if it is associated with a preventive maintenance task and will be included in the preventive maintenance firm fixed price. Non-recurring chemical sampling and analysis or that which is for a

special, one time or sporadic occurrence will be considered a unit fixed price labor or task, indefinite quantity work (Subsection C.13).

(1) Sampling. The Contractor shall:

(a) Take and transport fluid samples of commodities such as nitrogen, oxygen, helium, hydrogen and air in both gaseous and liquid (cryogenic) forms. The samples taken usually require purity analysis and/or particulate contaminant counting.

(b) Purge sampling containers in which the sample has failed analysis.

(2) Chemical Analysis. The Contractor shall:

(a) Analyze the purity and/or particulate contamination of fluid samples relative to their specification conformance.

(b) Perform recertification analysis on containers in which the sample failed analysis.

(c) Clean Government furnished sample containers after use (refer to LHB 1740.5, *Procedures for Cleaning of Systems and Equipment for Oxygen Service*).

g. Freon Recycling. Due to environmental concerns and statute there is a requirement to conserve and to recycle the current inventory of freon at LaRC. There is a freon distiller in Building 1188 for which the Contractor has operational and maintenance responsibility. Freon is also used in the cleaning operations at Building 1265, however this freon is transported in 55-gallon drums between buildings 1188 and 1265 by the Contractor.

h. Parts and Materials. Materials, including test solvents, packaging films, lubricants, gaskets, and thread sealant shall comply with the requirements of LHB 1740.5, *Procedures for Cleaning of Systems and Equipment for Oxygen Service,* manufacturer's guidance, and other Government-approved instructions specific to the item being serviced.

i. Clean Room and Work Station Requirements. Clean room facilities and workstations used for cleaning, validation and packaging of cleaned items shall meet the requirements of FED-STD-209 and LHB 1740.5, *Procedures for Cleaning of Systems and Equipment for Oxygen Service.* The clean room level shall be consistent with the cleanliness level requirements of the cleaned item. All packaging operations involving cleaned surfaces shall be accomplished within the same controlled environment as that in which the item to be packaged was cleaned. (Outer protective wrap, such as dimple wrap, may be applied outside the controlled area.). All tools shall be visibly clean before being used and shall be cleaned at weekly intervals during prolonged usage. Paperwork shall be inserted into plastic containers before being taken into the clean room and shall not be removed unless it is required to obtain processing and technical information. Ballpoint pens shall be used exclusively for all writing within the clean room.

j. Personnel Qualifications. The Contractor shall ensure that employees are trained and capable of performing all work required under this subsection and have a clear understanding of component verification and contamination control procedures, as stated in LHB 1740 5. *Procedures for Cleaning of Systems and Equipment for Oxygen Service.* See also Subsection C.7.b *Staffing.*

k. Safety. Refer to Subsection C.7.c., *Safety Requirements and Reports.* All duties are to be performed in accordance with the safety and policy manuals and procedural guidance and standards listed in LHB 1740.5, *Procedures for Cleaning of Systems and Equipment for Oxygen Service.* The Contractor is cautioned that the high-pressure systems and gases encountered in this work are particularly hazardous. Any deviation from standard operating procedures shall be done only with the concurrence of the Contracting Officer.

l. Quality Control. The Contractor is responsible for the performance of all inspection, testing, validation, and analysis required under this subsection in accordance with the approved Operation Procedures Plan and LHB 1740.5, *Procedures for Cleaning of Systems and Equipment for Oxygen Service*. The Contractor is cautioned that particular attention to detail in performing these functions is critical to personnel safety, protection of property, and costly and time-critical Government research. The Government reserves the right to perform any or all of the inspections and tests listed in LHB 1740.5 to assure that the end item conforms to all specified requirements.

m. Hazardous Materials. See Subsection C.7.r., *Hazardous Materials*.

END OF SUBSECTION C.16.

C.17. CORROSION CONTROL AND COATING SERVICES

a. General Requirements. The Contractor shall perform corrosion control and coating services on and within approximately 210 buildings and structures and approximately 80 trailers on-site at NASA LaRC. Surfaces to be coated and protected include those of wind tunnels, laboratories, test and research structures, storage spheres, pressure vessels, metal roofs and siding, piping, large motors, generators, pumps, compressors, and similar items. Methods of application include brush, roller, spray, and power roller. The services include surface preparation, coating application, protection of facilities, equipment, and other property from damage, cleanup and disposal of hazardous and non hazardous materials, quality control, performing an Annual Corrosion Control Condition Assessment, and corrosion prevention maintenance planning and management. Within this contract, the terms "coating" and "painting" are used synonymously. Attachment J-C8 -17 provides historical information for corrosion control services.

b. Scope of Work

(1) Recurring Work. Recurring work (included in the firm fixed price portion of the contract) in this Subsection consists of the preparation and maintenance of the Operation Procedures Plan and the Annual Corrosion Control Condition Assessment which shall be performed in accordance with Subsection C.12., *General Requirements and Procedures for Recurring Work*, and Subsections C.17.d., *Operation Procedures Plan* and C.17.f., *Annual Corrosion Control Condition Assessment,* below.

(2) Non-recurring Work. With the exception of the preparation and maintenance of the Operation Procedures Plan and Annual Corrosion Control Condition Assessment all corrosion control and coating services required by this Subsection are Indefinite Quantity (IQ) Work and shall be provided in accordance with Subsection C.13., *General Requirements and Procedures for Non-Recurring (Indefinite Quantity) Work.*

c. Documentation. All work shall be documented in accordance with the requirements of Subsections C.12 for Recurring Work and C.13 for Indefinite Quantity Work. System and equipment deficiency information noticed or obtained during the course of the corrosion control work shall be reported in accordance with Paragraph C.7.o., *Reporting System and Equipment Deficiencies*. Attachment J-C6 - 17 Lists the records and reports required of the Contractor as part of this work.

d. Operation Procedures Plan. The Contractor shall develop an Operations Procedures Plan for corrosion control and coating services at LaRC. The objective is to perform corrosion control and coating related work in accordance with written and bound procedures to ensure safety, efficiency and reliable workmanship. The Plan shall be developed using the following guidelines: (1) existing LaRC corrosion control and coating procedures, (2) equipment & system manufacturer's instructions, and (3) procedures outlined in the *LaRC Safety Manual.* The Plan shall include:

(1) Any special instructions including a detailed description, in correct sequence of steps to be taken for various conditions and applications, as appropriate.

(2) Materials to be used, including product trade names, for various conditions and applications, as appropriate.

(3) Safety and accident procedures.

(4) Hazardous waste protection, packaging and disposal procedures.

A draft initial plan shall be submitted to the Contracting Officer for approval within 90 days of the contract start date, and the final plan shall be submitted for approval within 45 days after the Contractor receives the Government's response to the initial plan, unless otherwise noted. The

initial Plan should incorporate existing LaRC documentation, procedures, and standards pertinent to this Subsection. The Contractor shall review the Plan at least quarterly, make updates, and resubmit the updated Plan (or a written memorandum validating that the existing Plan is still accurate in all respects) to the Contracting Officer for approval by the third work day of the start of each quarter. Deviation from the approved standard operating procedures is acceptable only with the approval of the Contracting Officer.

e. Procedures. All work shall be coordinated with the Contracting Officer. The Contractor shall perform all work in accordance with the approved Operation Procedures Plan, and in compliance with all applicable state and Federal regulations and the *Langley Safety Manual* procedures applicable to corrosion control activities. A list of applicable regulations is provided in Attachment J-H1. Work will be performed in accordance with the WSR, the NASA LaRC Painting Schedule (see Attachment J-C19-17), and other applicable guides and handbooks.

f. Annual Corrosion Control Condition Assessment. Annually, in conjunction with the Facility Condition Assessment discussed in Subsection C.8.f, *Facility Condition Assessment*, the Contractor shall inspect and perform a condition assessment of the corrosion control coatings applied to the facilities listed in Attachment J-C15-17. The information obtained shall be compiled into a prioritized list (in a format previously approved by the Contracting Officer) of needed corrosion control maintenance requirements and recommendations, provided electronically and not later than March 1 annually. This assessment shall be complementary to and referenced in, but not duplicate, the findings of the Facility Condition Assessment.

g. IAGP. Facility No.1289 is available for the Contractor's use for office and storage space. Government Furnished Equipment available for the Contractor's use, including scaffolding, containment shields, blasting equipment, etc., is identified in Attachment J-C3.

h. General Specifications/Standards.

(1) Surface Preparation. Surfaces to be coated shall be prepared by the Contractor in accordance with the requirements set forth in the approved work/service request (WSR). All visible oil, grease, dirt, dust, mill scale, rust, lead paint, oxide, corrosion products and foreign matter shall be removed from surfaces prior to surface coating. Cleaning and painting shall be so programmed that dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces. Typical surface preparation includes, but is not limited to, washing, scraping, solvent cleaning, hand and power tool cleaning, water blasting, and abrasive blasting , in accordance with Steel Structures Painting Council (SSPC), National Association of Corrosion Engineers (NACE), the American Society of Testing and materials (ASTM) standards that define degrees and method.

(2) Coating Application. The Contractor shall paint the exteriors of large steel structures, buildings, electrical equipment and substations, mechanical equipment, and other items. Application of coatings shall be in accordance with the coating manufacturer's recommendations and/or the applicable specifications.

(3) Surface Types. The types of surfaces to be painted include but are not limited to: steel, wood, plaster, galvanized steel and other nonferrous metals, stainless steel, concrete, masonry, and cement asbestos board.

(4) Personnel, Environment and Equipment Protection and Control. The contractor shall provide maximum protection of personnel, facilities, equipment, and other property from damage during all coating operations such as surface preparation, abrasive blasting, water blasting, coating application, etc.

(5) Control of Particulate Emissions. The contractor shall control the emission of particulate resulting from all operations. The Contractor shall clearly identify work areas using barriers and/or signs to indicate active operations.

(6) Cleanup and Disposal of Waste Materials. The Contractor shall provide cleanup during and after each operation. Cleanup is defined as the restoration of the area in which the work was performed to its original condition. Paint splatter, over spray, and other spillage must be cleaned using acceptable industry methods. The Contractor shall collect, handle and properly dispose of expendables, such as blasting materials, sandpaper, polyethylene, paints and thinners, and those substances removed during coating operations such as scale, rust, hazardous and non-hazardous paint products.

(7) Hazardous Waste Disposal. Refer to Subsection C.7.r., *Hazardous Materials*. The Contractor shall conform to all regulations governed by the Resource Conservation and Recovery Act (RCRA). The Contractor shall handle, package and label, setup a Satellite Accumulation Area, and schedule pickup of all waste to be disposed. The properly packaged waste shall be picked up, transported and ultimately disposed of by others at no cost to the Contractor. The Contractor shall provide to the Contracting Officer a copy of all product sample testing analysis results of all coating/paints to be removed and copies of the Hazardous Waste Disposal Manifest. The Contractor shall use the Langley Research Center's EPA Hazardous Waste Generator Identifications Number for manifest completion.

(8) Quality Control. The Contractor shall perform quality control services for all operations to insure compliance with the recommendations of the coating manufacturer and/or applicable Government specifications. The Contractor shall maintain a system of quality control records and data necessary to demonstrate that all painting operations are performed in compliance with the above referenced recommendations and/or specifications.

(9) Staging and Scaffolding. All scaffolding shall comply with OSHA requirements.

i. Inspection and Acceptance. Unless otherwise specified, inspection and acceptance of all work performed under this contract, including in-process work and finished work, shall be performed at the place of performance by the Contracting Officer.

j. Equipment, Materials and Vehicles. All equipment, materials and vehicles required and used in the work performed under this Subsection shall be stored, maintained and parked, as applicable, only in Government-designated areas specific to the current job or as otherwise authorized by the Contracting Officer.

END OF SUBSECTION C.17

C.18. RIGGING AND HAULING SERVICES

a. General Requirements. The Contractor shall perform rigging and hauling services as required at NASA LaRC. These services involve operations in and around all facilities of NASA LaRC, including laboratories and wind tunnels, and include installation of equipment and furnishing assistance in setting up experiments and models. The work will involve the rigging and hauling of equipment, structures, models, and other items to various areas at LaRC and to off site locations. Hazardous materials may be transported at LaRC in accordance with NHB 1700.1, Section 609.

b. Scope of Work.

(1) Trouble Call Work. Trouble calls occasionally involve rigging and hauling work, and shall be received, managed and worked in accordance with Subsection C.11, *General Requirements and Procedures for Trouble Call Work,* and is included in the firm fixed price portion of the contract.

(2) Recurring Work. Recurring work (included in the firm fixed price portion of the contract) includes hauling and rigging support directly associated with recurring tasks and services and the preparation and maintenance of the Operation Procedures Plan. Recurring work shall be performed in accordance with Subsection C.12. *General Requirements and Procedures for Recurring Work.*

(3) Non-recurring Work. Non-recurring work shall be accomplished in accordance with Subsection C.13. *General Requirements and Procedures for Non-recurring (Indefinite Quantity) Work,* and this subsection.

c. Documentation. All work shall be documented in accordance with the requirements of Subsection C.13 for Indefinite Quantity work. System and equipment deficiency information obtained during rigging and hauling services shall be reported in accordance with Subsection C.7.o., *Reporting System and Equipment Deficiencies.* Attachment J-C6 -18 lists the records and reports required of the Contractor.

d. Operation Procedures Plan. The Contractor shall develop an Operations Procedures Plan for rigging and hauling services at LaRC. The objective is to perform rigging and hauling related services in accordance with written and bound procedures to ensure safe, timely and reliable work. The Plan shall be developed using the following guidelines: (1) existing LaRC rigging and hauling procedures, (2) equipment & system manufacturer's instructions, (3) OSHA and EPA requirements, and (4) procedures outlined in the *LaRC Safety Manual.* The Plan shall include procedures to be taken in moving equipment and materials, including hazardous materials; equipment, tools and materials to be used; safety and accident procedures; a pre-qualified list of subcontractors to provide rigging and hauling services on short notice; and the qualifications of personnel performing the work.

A draft initial plan shall be submitted to the Contracting Officer for approval within 90 days of the contract start date, and the final plan shall be submitted for approval within 45 days after the Contractor receives the Government's response to the initial plan, unless otherwise noted. The initial Plan should incorporate existing LaRC documentation, procedures, and standards pertinent to this Subsection. The Contractor shall review the Plan at least quarterly, make updates, and resubmit the updated Plan (or a written memorandum validating that the existing Plan is still accurate in all respects) to the Contracting Officer for approval by the third work day of the start of each quarter. Deviation from the approved standard operating procedures is acceptable only with the approval of the Contracting Officer.

e. Safety. The Contractor shall comply with Federal, State, NASA and LaRC safety regulations when performing rigging work. The Contractor shall maintain all lifting devices in safe and operable condition as defined in LAPG 1740.2, *Facility Safety Requirements.* See also

Subsection C.28., *Built-in Cranes, Hoists, Monorails, and Lifting Devices Operations, Maintenance and Repair.*

f. Hauling. The Contractor shall be required to haul various size and weight loads on LaRC and to locations outside of the Center. When hauling oversized loads the Contractor shall arrange for Virginia State, Air Force, or city police to provide escort service when such is required. The Contractor shall be familiar with hauling permit requirements and obtain permits as required. When moving items between LaRC east to west sides the Contractor shall coordinate the move with NASA LaRC and Air Force security to assure the aircraft runway between these sides will be clear for the move.

g. Hazardous Materials. When moving hazardous materials the Contractor is required to comply with OSHA, EPA & State Regulations.

h. Working Conditions and Requirements. The Contractor shall at times be required to work in adverse weather conditions, and at heights up to 250 feet. Work will be performed out doors and in many cases be in areas where piping and tanks containing chemicals and gases are present. The Contractor shall be called upon to work in confined spaces in laboratories and wind tunnels handling heavy and costly equipment; costly research test articles such as scale models of space shuttle, experimental airplanes, etc., space flight hardware; and experiments. Lifting devices to be used in lifting space flight hardware must be load tested prior to use as specified in LHB 1740.9. Contractor personnel should understand that many of the items being handled are space flight hardware, models, research equipment, or experiments which are one of a kind items and very costly; therefore special care must be exercised to assure the items are not damaged in any way. The Contractor personnel may be required to suit-up (work in special clothing) while working in clean rooms and be required to utilize specially cleaned equipment in the clean areas. Occasionally, the Contractor will be required to handle classified components for installation in a facility, laboratory or wind tunnel. The following are some examples of tasks that may be required.

(1) Building 1247-D, Quiet Tunnel. The Contractor is required to utilize an overhead crane and chain falls in the tunnel to disassemble tunnel sections and remove the test section so the upstream portion of the tunnel can be re-configured and then reassembled. The Contractor may be required to change the nozzle which is a highly polished (mirror finished) critical piece of costly research equipment that must not be touched, scratched or damaged in any way.

(2) Building 582A, Low Turbulence Pressure Tunnel. This tunnel is only three- (3) feet wide. Installation and removal of models in this small tunnel requires the Contractor to work in close quarters and to use a shop lift or, in the majority of times, to simply use manpower to accomplish the tasks.

(3) Building 1247-E, High Pressure Air & Vacuum Distribution. Rigging support in this facility requires the use of overhead cranes and general rigging equipment to support disassembly and re-assembly of large compressors, electric motors, shafts, bearings, pumps, and etc.

(4) Facility 1297, Impact Dynamics Research Facility. Work at this facility requires the Contractor to work on top of the lunar landing structure, which is 250 feet high. The Contractor personnel must have a high worker physical and be qualified as high workers as defined in LAPG 1740.6, *Personnel Safety Certification*. This work is required to support maintenance and air craft crash research. Crash research support may require the use of a 25-ton crane and possibly the use of 2 cranes, depending on crash test. It requires the use of rigging practices and rigging tools to assist in off loading aircraft, setting aircraft in position for test, removing aircraft after the test and the moving of aircraft from the test site to an area where test results can be recorded.

END OF SUBSECTION C.18

C.19. CALIBRATION, TESTING AND COMPONENT VERIFICATION

a. General Requirements. The Contractor shall calibrate, test, verify, and certify pressure gauges, relief valves, pressure sensors, piping and hoses, and similar components at NASA LaRC. Services also include leak testing of components that have been disturbed by repair, maintenance or modification; pressure testing for verification of unique components; hydrostatic testing to 17,000 psig; and the fabrication of hose assemblies with compressed fittings. All work is to be performed in accordance with LHB 1710.40, *Safety Regulations Covering Pressurized Systems*, and all applicable ASME, ANSI and other appropriate codes and standards.

b. Scope of Work. The components requiring calibration, testing and/or verification services under this subsection are included with the equipment listed in Attachment J-C1-22A-G, their required service frequencies are identified in the PM schedule provided in Attachment J-C9, and component calibration, testing, and verification statistics are listed in Attachment J-C8-19. The work in this subsection includes:

(1) Trouble Call Work. Trouble calls shall be received, managed and worked in accordance with Subsection C.11., *General Requirements and Procedures for Trouble Call Work*, and are included in the firm fixed price portion of the contract.

(2) Recurring Work. Recurring work (included in the firm fixed price portion of the contract) in this subsection includes the preparation and maintenance of the Operation Procedures Plan and the scheduled, periodic calibration, testing and verification of components in accordance with Subsection C.12, *General Requirements and Procedures for Recurring Work.*

(3) Non-recurring Work. Non-recurring work shall be accomplished in accordance with Subsection C.13, *General Requirements and Procedures for Non-recurring (Indefinite Quantity) Work,* and this subsection.

c. Facilities and Equipment. Building 1284B (currently the Component Verification Facility) will be made available for the Contractor's use, as well as the Government Furnished Equipment identified in Attachment J-C-3.

d. Documentation. All work shall be documented in accordance with the requirements of Subsection C.11 for Trouble Calls, C.12 for Recurring Work, and C.13 for Indefinite Quantity Work. Additionally:

(1) The Contractor shall maintain throughout the term of the contract, in a format approved by the Government, component and system calibration, verification and testing plans (Subsection C.19.e.), test and verification results, and certification records. The Contractor shall also record all hose assemblies fabricated and leak and other testing performed.

(2) Upon completion of calibration, verification and certification of piping and components, the Contractor shall permanently mark or attach an adhesive tag, as appropriate, to the underside, rear or other acceptable location on the component. Recorded information shall include the date of the service, the service that was provided, and identification of the technician who provided the service.

(3) Attachments J-C6-19 and J-C7-19A-G list the records and reports and working forms, respectively, required of the Contractor as part of this work.

(4) System and equipment discrepancy information obtained from failed and marginally passed tests and certifications, or noticed during trouble calls, operator maintenance or preventive maintenance work shall be reported in accordance with Subsection C.7.o., *Reporting System and Equipment Deficiencies.*

e. Operation Procedures Plan. The Contractor shall develop an Operations Procedures Plan for component and system calibration, verification, functional testing and certification operations at LaRC. The objective is to perform calibration related work in accordance with written and bound procedures to ensure safe and reliable work. The Plan shall be developed using the following guidelines: (1) existing LaRC calibration procedures, (2) equipment & system manufacturer's instructions, (3) OSHA requirements, and (4) procedures outlined in the *LaRC Safety Manual.* The Plan shall include any special instructions and the procedures to be used during component and system calibration work; criteria used in the certification of individual components and systems; types of testing to be performed and certification frequencies; the qualifications of the technicians performing the work; and safety and accident reporting procedures.

A draft initial plan shall be submitted to the Contracting Officer for approval within 90 days of the contract start date, and the final plan shall be submitted for approval within 45 days after the Contractor receives the Government's response to the initial plan, unless otherwise noted. The initial Plan should incorporate existing LaRC documentation, procedures, and standards pertinent to this Subsection. The Contractor shall review the Plan at least quarterly, make updates, and resubmit the updated Plan (or a written memorandum validating that the existing Plan is still accurate in all respects) to the Contracting Officer for approval by the third work day of the start of each quarter. Deviation from the approved standard operating procedures is acceptable only with the approval of the Contracting Officer.

f. Personnel Qualifications. The Contractor shall ensure that the technicians performing the calibration work are at least journeymen in a related trade and are trained in calibration, verification and testing techniques

g. Compression, Pumping, Dispensing, Evacuation and Reclamation Facilities. Refer also to Subsection C.31., *Research Facility Mechanical, Electrical and Fluid Systems Maintenance and Repair.* The work includes component calibration and verification, nondestructive testing and hydrostatic testing, usually as part of another maintenance or repair task, of the following types of piping systems:

(1) Air systems up to 6,000 psig with piping of all materials and sizes up to 24 inches.

(2) High and low pressure gaseous and liquid nitrogen systems with piping of all materials for pressures up to 12,000 psig.

(3) Methane gas systems up to 6,000 psig.

(4) Liquid and gaseous oxygen systems with pressures up to 6,000 psig

(5) Helium systems up to 6,000 psig

(6) Argon systems – low pressure purge.

(7) CF_4 gas system up to 2,500 psig

(8) Vacuum systems up to 72 inches in size.

(9) Silane systems.

(10) Hydraulic/oil systems to 6,000 psig.

(11) Hydrogen gas systems up to 2,500 psi.

(12) Refrigerant R-134A liquid/gas systems up to 600 psi.

h. Requirements for Testing.

(1) Leak Testing. When repairs and alterations are made involving the integrity of the air, liquid or gas distribution system, the Contractor shall, after all the repairs are complete, pressurize the system and check for leaks in accordance with LHB 1710.40, *Safety Regulations Covering Pressurized Systems*. If the repair is made to a buried section of the system, the pressure test shall be accomplished prior to covering the repair area. Allowable leakage: NONE.

(2) Other Non-destructive Testing. The Contractor shall perform nondestructive testing of components and systems as required by the PM task or Work/Service Request (WSR). Nondestructive testing includes radiograph inspection, magnetic particle inspection, and die penetrant testing.

i. Requirements for Component Certification. The Contractor shall certify the proper operation of pressure gauges, relief valves, high and low pressure hoses, and pressure reducing valves on equipment and systems to factory specifications. The Contractor shall follow the Government-approved Operation Procedures Plan. This work may be recurring, usually associated with preventive maintenance, or unscheduled work that cannot be pre-scheduled and by definition falls into the trouble call and non-recurring, indefinite quantity work categories. Attachment J-C8-19 provides data on the number of components that were certified during the past two years.

j. Requirements for Hose Fabrication. The Contractor shall furnish, fabricate, hydro-test, and certify flexible hoses, both high (up to 10,000 psi) and low pressure, to factory specifications. Included are SYNFLEX, RESISTAFLEX, standard shop air hose, and other hoses. This work may be recurring, usually associated with preventive maintenance, or unscheduled work that cannot be pre-scheduled and by definition falls into the trouble call and non-recurring, indefinite quantity work categories. Attachment J-C8-19 provides data on the number of hoses that were fabricated during the past two years.

k. Equipment Calibration. The Contractor shall be responsible for the quality control of the Contractor furnished calibration equipment used in the calibration of NASA LaRC equipment, components, and systems. As a minimum, the Contractor shall ensure that the calibration equipment is itself re-calibrated annually, is maintained properly calibrated at all times, and conforms to the appropriate ASTM and ANSI codes and standards. NASA LaRC, as part of the NASA LaRC Metrology Program, will calibrate IAGP as required.

END OF SUBSECTION C.19.

C.20. INDUSTRIAL INSTRUMENTATION

a. General Requirements. The Contractor shall perform maintenance, assembly, installation, troubleshooting, repair, modification, setup, operation, testing and calibration of industrial instrumentation equipment at NASA LaRC. The types of equipment to be operated and maintained and under this contract include industrial controls, recorders, digital indicators, measuring systems, and industrial pressure, temperature, and level transmitters.

b. Scope of Work.

(1) Trouble Call Work. Trouble calls shall be received, managed and worked in accordance with Subsection C.11, *General Requirements and Procedures for Trouble Call Work,* and is included in the firm fixed price portion of the contract.

(2) Recurring Work: Recurring work (included in the firm fixed price portion of the contract) includes preventive maintenance and the preparation and maintenance of the Operation Procedures Plan, and shall be performed in accordance with Subsection C.12., *General Requirements and Procedures for Recurring Work.*

(3) Non-recurring Work. Non-recurring work shall be accomplished in accordance with Subsection C.13., *General Requirements and Procedures for Non-recurring (Indefinite Quantity) Work,* and this subsection.

c. Documentation. All work shall be documented in accordance with the requirements of Subsection C.11 for Trouble Calls, C.12 for recurring work and C.13 for IQ Work. System and equipment deficiency information obtained during the instrumentation support services shall be reported in accordance with Subsection C.7.o, *Reporting System and Equipment Deficiencies.* Attachment J-C6 - 20 lists the records and reports required of the Contractor.

d. Facilities and Equipment. Building 1188 (LaRC on-site instrumentation shop) will be made available for the Contractor's use, as well as the Government Furnished Equipment identified in Attachment J-C-3.

e. Operation Procedures Plan. The Contractor shall develop an Operations Procedures Plan for Industrial Instrumentation Support Service operations at LaRC. The objective is to perform work in accordance with written and bound procedures to ensure safe and reliable work. The Plan shall be developed using the following guidelines: (1) existing LaRC procedures, (2) equipment & system manufacturer's instructions, (3) OSHA requirements, and (4) procedures outlined in the *LaRC Safety Manual.* The Plan shall include any special instructions and the procedures to be used during instrumentation support services work, including work performance and acceptance criteria, qualifications of the technicians performing the work, and safety and accident reporting procedures.

A draft initial plan shall be submitted to the Contracting Officer for approval within 90 days of the contract start date, and the final plan shall be submitted for approval within 45 days after the Contractor receives the Government's response to the initial plan, unless otherwise noted. The initial Plan should incorporate existing LaRC documentation, procedures, and standards pertinent to this Subsection. The Contractor shall review the Plan at least quarterly, make updates, and resubmit the updated Plan (or a written memorandum validating that the existing Plan is still accurate in all respects) to the Contracting Officer for approval by the third work day of the start of each quarter. Deviation from the approved standard operating procedures is acceptable only with the approval of the Contracting Officer.

f. Types of Equipment to be Serviced. The following is representative of the types of industrial equipment to be serviced under this Subsection:

(1) Process Monitoring and Control Devices, such as temperature controllers, pressure controllers and chart recorders, and process transmitters.

(2) Boiler Controls, such as master, fuel, air, pressure, feedwater, damper position and flow controls.

(3) Environmental and Personnel Safety Gas Sampling Systems in 22 facilities utilizing the following gasses for calibration: freon, oxygen, methane, propane, hydrogen, and nitrogen.

(4) Meteorological Instrumentation, such as ambient temperature monitors, dew point monitors, relative humidity sensors, and weather stations.

(5) Temperature and Pressure Readouts, such as digital meters, analog meters and dial gages.

(6) Temperature Interlock Devices, such as Fenwall temperature switches, freeze alarms and temperature alarms for computer rooms.

(7) Industrial Ovens.

g. Historical Information on Industrial Instrumentation Support Services. Trouble Calls ~~are~~ included in Attachment J-C8-11A. The average labor hours expended to provide these services each month is approximately 280 hours for an average of approximately 26 TC per month. It is anticipated that the scope of these support services will be the same as in prior years. In the past, approximately 80% of this work was performed on the job site and approximately 20% in Building 1188 (LaRC on-site instrumentation shop).

END OF SUBSECTION C.20.

C.21. BUILDINGS AND STRUCTURES MAINTENANCE AND REPAIR

a. General Requirements. The Contractor shall perform maintenance, repair, alterations, and inspections on buildings, structures, historical landmarks, monuments, and equipment at NASA LaRC (see J-C1). Also included is the fabrication of scaffolding and staging, shipping containers and storage boxes in support of both the facility and equipment maintenance and operational research efforts.

b. Scope of Work:

(1) Trouble Call Work. Trouble calls (included in the firm fixed price portion of the contract) shall be received, managed and worked in accordance with Subsection C.11, *General Requirements and Procedures for Trouble Call Work,* and this subsection.

(2) Recurring Work. Recurring work (included in the firm fixed price portion of the contract) in this subsection includes preventive maintenance, preparation of the Annual Facility Condition Assessment, and weekly re-lamping checks (see C.21.g.(2). This recurring work shall be accomplished in accordance with Subsection C.12., *General Requirements and Procedures for Recurring Work,* and this subsection.

(3) Non-recurring Work. Non-recurring work shall be accomplished in accordance with Subsection C.13., *General Requirements and Procedures for Non-recurring (Indefinite Quantity) Work,* and this subsection.

c. Documentation. All work shall be documented in accordance with the requirements of Subsection C.11 for Trouble Calls, C.12 for recurring Work, and C.13 for Indefinite Quantity Work. Additionally, Attachment J-C6-21 lists the records and reports required of the Contractor as part of this work. System and equipment deficiency information obtained from failed and marginally passed tests and certifications, or noticed during trouble calls, facility inspections or preventive maintenance work shall be reported in accordance with Subsection C.7.o., Reporting System and Equipment Deficiencies.

d. Americans With Disabilities Act (ADA). All work shall be in compliance with ADA requirements. The Contractor shall notify the Contracting Officer for authorization before performing any work that is contrary to or non-exempt from the ADA requirements.

e. Research Facilities. Included in this contract is the maintenance of LaRC Research Facilities which include subsonic, transonic, supersonic and hypersonic wind tunnels, structural and materials research laboratories, and other unique, high energy and high technology facilities. A brief functional description of each major facility is included in Attachment J-C1-21B. Most of these have unique structural, mechanical and electrical features, such as wind tunnel main drive systems, research equipment vacuum and hydraulic systems, special test platforms and struts, and shop equipment which are to be maintained under this contract. See Subsection C.31., Research Facilities Mechanical, Electrical and Fluids Systems Maintenance and Repair.

f. Historic National Preservation Facilities. Several LaRC facilities included in this contract are Official National Historic Landmarks. Accordingly, certain restrictions, limitations and requirements apply to the maintenance and repair work performed in, on and around these historic structures. This work shall be coordinated with the Contracting Officer.

g. Requirements For Electrical. See Section C.31., Research Facilities Mechanical, Electrical and Fluid Systems Maintenance and Repair, for work requirements on Wind Tunnel and Research Laboratory support equipment and their related systems. Electrical work shall include the maintenance and repair of institutional electrical systems up to 13.8 kV and interior and exterior lighting fixtures for each building beginning at and including the weatherhead, or in the case of underground power, at and including the main distribution panel. All electrical equipment, service

connections, distribution panels, connections, conduits, conductors, grounds, outlets, switches, receptacles, wiring, circuit breakers, branch circuits, ground fault circuits, lighting fixtures, bulbs, photo cells, dimmers, contractors, motors, built-in collateral and personal property equipment, emergency lighting and lighted exit sign systems, exterior and obstruction lighting, and door bells and buzzers shall be repaired or replaced as required. Cracked, broken, or missing receptacle and switch face plates shall be replaced with new plates of the same/original color and size. Light fixture lenses and globes that are damaged or missing shall be replaced. Maintenance of lamps, appliances, and cords owned by individuals is not the responsibility of the Contractor.

(1) Standards. The Contractor shall perform all work in accordance with LHB 1710.6, *Electrical Safety*. All workmanship and materials shall conform to applicable codes, regulations and standards including the National Fire Protection Association (NFPA) 70 National Electrical Code.

(2) Re-lamping. Replacement lamps and components shall be the same type, wattage, and voltage as those removed, unless otherwise directed by the Contracting Officer. Fixtures may be in high-bay or otherwise difficult to access areas. This work includes air traffic lighting, such as that on the impact dynamics gantry, water tower, Building 720 tow tank, and hangar, which shall be checked on a weekly basis. If outages on air traffic lighting are noted, the Contractor shall take remedial action within one hour of discovery by the Contractor or upon notification. Other re-lamping may be grouped in accordance with Subsection C.11.d,(3), *Trouble Calls for Lighting.*

(3) Emergency Light Requirements. Existing emergency lighting throughout LaRC shall be maintained under this contract. The National Electric Code (Life Safety Code NFPA 101) defines installation and maintenance requirements. Maintenance of these devices is included in the PM program . Installation, removal or relocation of emergency lights must be approved by the Contracting Officer.

h. Requirements for Carpentry and Masonry. Carpentry and masonry maintenance, repair, and minor construction services shall be provided in accordance with the definitions, procedures, and standards specified in this subsection and in NHB 7320.1 Facilities Engineering Handbook, as applicable.

(1) General Interior Work.

(a) Floors and Floor Coverings. Damaged or deteriorated flooring, sub-flooring, and structural members shall be repaired or replaced to provide a structurally sound, uniform, and aesthetic surface that is free of cracks, breaks, chips, tears, gouges, stains, and buckling. Where the contents of the floor covering is not known the Contractor shall test the covering for asbestos content and shall notify the Contracting Officer if any asbestos is in fact present. The bid prices for indefinite quantity unit priced tasks for flooring replacement shall include all costs for removal and disposal; subfloor surface preparation; and installation and finishing of flooring and baseboard and/or shoe molding.

1 Resilient Tiles. Damaged or deteriorated tiles shall be replaced with matching tiles of the same thickness as the original. Damaged tiles or tiles to be replaced shall be removed without affecting adjacent tiles. Installation shall be in accordance with the tile manufacturer's instructions.

2 Linoleum and Vinyl Sheet Flooring. Areas of flooring having gashes or other defects shall be replaced with matching sheet flooring of the same thickness as the original. Damaged flooring to be replaced shall be removed without affecting adjacent areas. The patch shall be installed using adhesive as recommended by the flooring manufacturer. If flooring is replaced adjacent to a wall, vinyl baseboard shall be replaced at no additional cost.

3 Finished Wood Flooring. Loose or slightly warped flooring shall be renailed or reglued to sub-flooring and/or concrete slabs with appropriate adhesive. Nails shall be set and filled with a wood putty. Scarred flooring that has holes and gashes less than l/2 inch wide shall be filled and sealed. All other damaged flooring shall be removed and replaced without damage to adjacent walls or flooring. Defects in concrete slabs, such as rough or scaling areas or high/low spots shall be corrected. Replacement flooring or damaged flooring that requires touch-up refinishing shall be finished as part of the job, at no additional cost to the Government. Prior to refinishing the wood flooring, all flooring repairs or replacements shall be completed as specified above and all shoe molding shall be removed prior to sanding. All damaged or deteriorated shoe molding shall be replaced at no additional cost. Wood flooring shall be finished in accordance with Paragraph C.21.i., *Requirements for Painting.*

4 Terrazzo. Areas of terrazzo flooring having gashes or other defects shall be repaired to match the adjacent terrazzo. Treatment shall be appropriate for its respective type of binder – Portland cement, polyacrylic modified Portland cement, or epoxy or polyester. New terrazzo and grout shall be cured and polished to match the existing terrazzo. Portland cement systems shall be sealed with a penetrating-type sealer immediately following final polishing to regulate moisture evaporation and to inhibit the penetration of spilled materials upon initial contact with the terrazzo floor. Surface sealer shall be used on epoxy and polyester–type terrazzo floor systems.

5 Metal. Floor deck units shall be cut and fitted as required for the passage of other work projecting through, or adjacent to, the floor decking. Metal reinforcement and closure pieces shall provide the required strength, continuity of the floor decking, and required support of other work. Supporting members shall be completely in place before the placing of any cellular metal floor deck units is started. Units shall be placed on the supporting steel framework and adjusted to their final position with the ends bearing on the supporting members and aligned, end to end, before being permanently fastened. Floor deck units shall be fastened to the steel supporting members at the ends and at all intermediate supports, both parallel and perpendicular to the deck span, by welds in accordance with applicable specifications. Scarred areas on the metal floor decking and on the surface of supporting steel members shall be wire-brushed, cleaned, and touch-up painted. Scarred areas shall include welds, weld scars, bruises and rust spots. Galvanized surfaces shall be touched up with galvanizing repair paint. Painted surfaces shall be touched up with paint for the repair of painted surfaces.

6 Elevated (Raised Computer) Flooring. Floor covering shall be factory-attached to the floor panel by a non-creep adhesive. The floor system shall be laterally stable in all directions whether the panels are in place or not. The finished assembly shall be rigid and free of vibration and rocking panels. The floor shall be level within 0.10 inch. The floor panels shall be able to be conveniently removed for under-floor servicing and for openings for new equipment. No part of grilles or registers shall project more than 1/8 inch above the floor. Cutouts shall be finished with rigid polyvinylchloride or molded polypropylene edging to conform to the appearance level of the floor surface and to cover raw edges of the cutout panel. Edge strips shall be mechanically secured to the floor panel in a manner to preclude detachment under foot and wheel traffic. The top of the strip shall be flush with the top of the floor covering. There shall be no voids between the floor panels and the contiguous vertical surface trim. When flooring is being replaced or repaired, the subfloor shall be cleared of dust. No cutting, trimming, or other debris-producing operation shall be conducted in the area where any new flooring is being installed.

7 Concrete Floors. Cracked, broken or spalled areas shall be patched with a non-shrinking cement mortar. Areas shall be cleaned and all loose concrete removed. Underlaying surfaces shall be chipped to ensure bond with the patch. Shallow spalled areas shall be chipped to provide space for an adequate patch thickness. The patch shall be finished even with the adjacent surfaces and finished to match existing texture. Exposed reinforcing steel shall be sandblasted to bare metal and coated with a rust inhibitive primer before restoring concrete.

8 Vinyl Baseboards. Deteriorated or damaged sections of vinyl baseboard shall be removed and wall and floor surfaces cleaned of all dirt, oil, grease, mildew, moisture, adhesive and debris. Loose baseboards shall be resecured to the wall and damaged, deteriorated, or missing baseboard sections shall be replaced with sections of the same color, pattern and size with an adhesive conforming to the manufacturer's recommendations.

9 Ceramic Tile. Ceramic tile floors that are broken, missing, cracked or discolored shall be replaced as required. Floor tiles shall be regrouted, as required, to provide a waterproof seal. In those cases where replacement tiles of an exact match cannot be found, the Contractor may be required to remove and replace non-defective tiles to create a pattern and minimize the visual effect of the mis-match.

10 Gymnasium Flooring. Gymnasium flooring that is loose, missing, gouged, warped, disfigured, marred, water stained or otherwise damaged shall be replaced or refinished as necessary. Replacement wooden strips shall, unless otherwise directed, run parallel to adjacent strips, be sanded to 100 grit, cleaned, sealed, finished, buffed and marked as necessary to match the adjacent strips and existing configuration and design.

(b) Interior Walls, Ceilings, and Trim. Damaged and deteriorated walls, ceilings, and related trim shall be repaired or replaced to provide an attractive surface free of noticeable cracks, spalls, raised areas, holes and dents, and marks and stains. Wood trim items and ceiling fixtures shall be removed as necessary to provide access to the damaged area. On completion of the repair activity, fixtures and trim shall be reinstalled, nails set and filled and items repainted or refinished to restore them to their original condition. When removing wall or ceiling coverings, the Contractor shall inspect the supporting structural system and notify the Contracting Officer immediately of any need for repair before proceeding.

1 Drywall. Small dents and holes shall be repaired with spackle over a backing plate when necessary. Spackle shall be feathered on the adjacent surfaces. Holes and other defects in wallboard between two studs or beams shall be repaired by removing a rectangle of gypsum board to the center of the adjoining studs or beams. Replacement gypsum board shall be of the same thickness and texture as the adjacent sheets.

2 Vinyl Wall Covering. Wall covering that has been ripped, scarred, stained, or otherwise damaged shall be repaired or replaced as necessary. Wall covering shall be repaired if the damaged area can be patched and is not noticeable. Wall covering that is extensively damaged, or for which a matching wall covering is not available, shall be repaired by replacing the covering on the entire wall. If matching wall covering is not available, the Contractor shall find a comparable substitute. The Contracting Officer will approve all replacement wall coverings that do not match the existing wall covering. Replacement wall covering shall be hung according to the manufacturer's recommendations.

3 Ceramic Tile. Ceramic tile walls and window stools and marble saddles that are broken, missing, cracked or discolored shall be replaced, as required. Tiles shall be regrouted as required to provide a waterproof seal. In those cases where replacement tiles of an exact match cannot be found, the Contractor may be required to remove and replace non defective tiles to create a pattern and minimize the visual effect of the mismatch.

4 Masonry. Damaged masonry units (brick or concrete block) shall be replaced with a unit of the same size, color and texture. The mortar shall be completely removed and the cavity cleaned and all debris removed. The masonry unit shall then be reseated in mortar and the remaining cavity packed with mortar. All joints between masonry units shall be pointed to match existing. Damaged mortar joints shall be chipped out, cleaned and dampened before being repointed. Repointed joints shall match undamaged joints. Trim and miscellaneous hardware items shall be removed and replaced as necessary so as not to interfere with the work.

5 Suspended Ceilings. Broken and stained ceiling tiles shall be replaced with tiles of the same material, style, size, and color. Damaged and broken suspended grid system shall be repaired/replaced as necessary to provide a suspended ceiling system as designed. The bid prices for indefinite quantity unit priced tasks for acoustical ceiling tile replacement shall include all costs for removal, disposal, and installation of acoustical ceiling tiles.

(c) Doors. Interior doors shall be maintained/repaired to operate smoothly without binding or sticking. Damaged, deteriorated, or missing doors, glass and associated hardware shall be repaired or replaced as required. The replaced doors shall be the same type and have the same finish as the original doors. All replacement doors shall be installed with the hardware from the damaged door unless the hardware is unrepairable. Small holes in door faces shall be filled with an epoxy filler and finished to match the surrounding door surface.

(d) Stairs and Stairwells. The Contractor shall secure loose treads, risers, stringers, handrails, brackets and other components. Badly damaged stair and handrail components shall be refinished to match original components. Damaged stair finish shall be repaired. Trim items susceptible to damage during the repair activity shall be removed and reinstalled upon completion of the repair activity.

(e) Cabinets and Countertops. Damaged or deteriorated cabinets, shelving, and countertops shall be repaired or replaced as required. Missing or inoperative hardware shall be replaced. Countertops shall be free of warped, chipped, burned, cut, or otherwise marred areas. Loose joints shall be secured and filled. Countertops and backsplash shall be the fully formed type comprised of a single unit with the backsplash no less than 3 ½ inches high. Replacement cabinets and countertops shall conform to the requirements of American National Standards Institute publication A161.1. When painting or varnishing repaired/replaced cabinets is required, all cabinets in the room shall be painted/varnished if required to make a satisfactory match.

(f) Interior Accessories. The Contractor shall repair or replace damaged, inoperative, or missing interior accessories including, but not limited to, paper holders, soap trays, dispensers, towel bars, shower curtain rods, medicine cabinets, mirrors, smoke detectors, and door stops. Loose accessories shall be resecured by tightening or replacing screws or by using a suitable adhesive. Damaged or missing items shall be replaced with items matching the original. Replacement hardware shall conform to the Building Hardware Manufacturer's Association (BHMA) Product Standard. Hardware items requiring lubrication shall be lubricated and restored to an operable condition.

Repairable rusted metal components shall be cleaned of all rust, coated with a rust inhibitor and restored to an operational condition.

(2) General Exterior Work.

(a) Exterior Walls. The Contractor shall repair or replace as required damaged walls to maintain the aesthetics of the facility and quality of the original construction or latest remodel. Damaged or deteriorated wall areas shall be repaired or replaced to restore them to a serviceable, structurally sound, and watertight condition. This includes, but is not limited to, replacing damaged masonry units, tuckpointing loose or eroded mortar joints, sealing penetrations in wall openings, replacing damaged or deteriorated structural members, siding, underlayment, and exterior trim, replacing miscellaneous hardware items, and removal of vegetation, discoloration, graffiti, or other defects that would render an unsightly appearance to exterior walls.

1 Masonry. Damaged masonry units (brick or concrete block) shall be replaced with a unit of the same size, color and texture. The mortar shall be completely removed and the cavity cleaned and all debris removed. The masonry unit shall then be reseated in mortar and the remaining cavity packed with mortar. All joints between masonry units shall be pointed to match existing. Damaged mortar joints shall be chipped out, cleaned and dampened before being repointed. Repointed joints shall match undamaged joints.

2 Hardboard Siding. Damaged hardboard siding shall be removed without damaging adjacent siding or underlayment. Replacement siding shall match the existing siding in color, texture and material. The siding face and edges shall be factory primed and the back shall be factory sealed. Nails shall be of the type and size specified by the manufacturer and shall be driven flush. All joints shall be caulked.

3 Metal Siding. Damaged metal siding shall be removed without damaging adjacent siding, underlayment or insulation. Replacement siding shall match the existing siding in color, type of finish, gage thickness, tensile and yield strength, panel width and length, appearance, texture and material. Siding shall be of the greatest length and arrangement to minimize end laps. Where possible, sheets shall extend the full height of walls without horizontal joints. Sections shall be in full and firm contact with structural supports. Flashings, dormers, closers, metal expansion joints, ridge rolls, fillers, and other sheet metal accessories shall be factory formed material of the same type and quality finish as the siding sheets and the siding face and edges shall be factory painted. Where factory finish is damaged, the finish shall be repaired and made to match the factory finish. Nails, screws and fasteners shall be of the type and size specified by the manufacturer and shall be driven flush. All joints shall be sealed. Sealer color shall match panel colors. The siding shall be installed in accordance with the manufacturer's recommendations.

4 Fabric. The fabric skin on air supported and tension frame membrane structures shall be maintained in good repair to ensure structural integrity and an aesthetically pleasing appearance. Rips, tears, rubs, abrasions and other discrepancies shall be patched in accordance with the structure's manufacturer's recommendations using appropriate adhesive and material matching the existing in color, weight, fabric, pattern, etc. All frames, platforms, cables, tubing, channels, tie-downs, and other supporting structures as well as doors, air barriers, air compressors, and other equipment and components associated with the structural soundness of the structure shall be in good condition, and fully functional as intended and designed.

5 Seams. Seams between window or door frames and exterior walls shall be caulked. Old joints shall be scraped and cleaned with a solvent recommended by the caulking

manufacturer. The caulking shall be applied according to the manufacturer's directions.

6 Metal Flashing and Trim. Damaged or deteriorated metal flashing and trim shall be repaired or replaced to match the existing trim.

(b) Exterior Trim. Exterior trim, including all exterior moldings, millwork, shutters, and cornice shall be repaired or replaced as required. Surfaces to receive trim shall be thoroughly cleaned of sealant and paint build-up prior to installation of trim. Damaged or deteriorated insulation board or underlayment shall be replaced with material of the same type, thickness, and quality. Bird screens and soffit vents shall be intact and free of corrosion and missing pieces. All wood trim items shall be prime painted prior to installation.

(c) Roofing. The Contractor shall immediately remedy roof leaks. Leaking is defined as any moisture penetration beyond the outermost moisture barrier. A roof with moisture in the insulation layer interior to its moisture barrier is considered to be a leaking roof. The Contractor shall accomplish temporary repairs under wet conditions to protect government property and personnel. Durable permanent repairs shall be completed as soon as conditions allow. Damaged, deteriorated, or missing roofing, sheathing, flashing, gravel stops, miscellaneous roof structures and components, and structural supports shall be repaired or replaced as required to provide a watertight seal and to retain the original whole condition of the roof system. All roofing work shall be in accordance with National Roofing Contractors Association (NRCA) standards. Installation of roofing materials shall be in accordance with the roofing material manufacturer's recommendations. Prices for indefinite quantity unit priced tasks for roofing replacement shall include all costs for removal and disposal; roof deck surface preparation; and installation of underlayment and roofing.

1 Annual Roof Inspection. Annually, in conjunction with the Facility Condition Assessment discussed in Paragraph C.8.f., *Facility Condition Assessment*, the Contractor shall inspect and perform a condition assessment of all roofs of the facilities listed in Attachment J-C14-21. The inspection criteria shall include all elements of maintenance to protect the facilities from leaks and to preserve the condition of the roof and prevent it from any degradation. The inspection shall contain all elements of roofing, flashing, coping, gravel stops, pitch pockets, penetrations, drains, perimeter edging, fascia, scuppers, and caulking. The Contractor shall track trends, conditions and remedial actions taken. The information obtained shall be compiled by building into a prioritized list (in a format previously approved by the Contracting Officer) of needed roofing requirements and recommendations, identified on roof layout drawings, and provided electronically not later than March 1 annually. This assessment shall be complementary to and referenced in, but not duplicate, the findings of the Facility Condition Assessment and shall be separately firm fixed priced in accordance with Subsection C.12., *General Requirements and Procedures for Recurring Work*.

2 Structural Members. All trusses, joists, sheathing, and other structural roof members shall be repaired or replaced as required to ensure the structure is safe for occupancy and structurally sound. While making repairs, inspection of other supporting members shall be made and deficiencies reported to the Contracting Officer.

3 Shingle Roofing. Damaged and deteriorated shingles shall be removed without damaging those in the unaffected areas. Damaged underlayment shall be cut and removed leaving sound material exposed surrounding the repair area. New underlayment and shingles shall be installed in accordance with standard industrial

practices. Vents and other projections through roofs shall be flashed according to the requirements specified below.

4 Built-up and Elastomeric Roofing. Damaged and deteriorated roofing shall be removed without damaging unaffected areas. The replaced roofing shall be the same type and size and be compatible with the existing roofing. The roofing shall be installed in accordance with the manufacturers' recommendations.

5 Metal Roofing. Damaged metal roofing shall be removed without damaging adjacent roofing, underlayment or insulation. Replacement roofing shall match the existing roofing in color, type of finish, gage thickness, tensile and yield strength, panel length and width, appearance, texture and material. Roofing sheets shall be of sufficient length to bridge at least three purlin spans plus the required end lap. Sections shall be in full and firm contact with structural supports. Very small areas such as punctures may be repaired with patches matching the existing metal roofing in strength and appearance and roof cement. Flashings, fillers, and other sheet metal accessories shall be factory formed material of the same type and quality finish as the roofing sheets and the roofing face and edges shall be factory painted. Where the factory finish is damaged, the finish shall be repaired and made to match the factory finish. Screws and fasteners shall be of the type and size specified by the manufacturer and shall be driven flush. All joints shall be sealed. Sealer color shall match panel colors. The roofing shall be installed in accordance with the manufacturer's recommendations.

6 Single Ply Membrane. Damaged and deteriorated roofing shall be removed without damaging unaffected areas. The surface on which roofing is to be applied shall be firm and smooth, free of projections, ice, frost, moisture, dirt and foreign materials. Vents and other items penetrating the roof shall be in position and properly prepared with manufactured flashings or fittings. The replaced roofing shall be the same type and size and be compatible with the existing roofing. The roofing shall be installed in accordance with the manufacturers' recommendations. Adhesives shall be compatible with membranes and materials in which they are bonded.

7 Corrugated Fiberglass. Damaged corrugated fiberglass roofing shall be removed without damaging adjacent roofing, underlayment or insulation. Replacement roofing shall match the existing roofing in color, type of finish, gage thickness, tensile and yield strength, panel length and width, appearance, texture and material. Roofing sheets shall be of sufficient length to bridge at least three purlin spans plus the required end lap. Sections shall be in full and firm contact with structural supports. Screws and fasteners shall be of the type and size specified by the manufacturer and shall be driven flush. All joints shall be sealed. The sealer color shall match panel colors. The roofing shall be installed in accordance with the manufacturer's recommendations.

8 Roof Flashing. Existing flashing shall be rehabilitated to form an effective water seal. Areas covered with deteriorated bituminous cement shall be cleaned of all loose materials and debris and recoated with cement. Deteriorated mortar joints in chimneys intended to seal and anchor flashing shall be cleared of mortar and the flashing reinserted and the joint filled with mortar patch and finished to match existing joints. Damaged flashing around vent pipes, attic turbines and other mechanical openings shall be replaced with appropriately formed flashing. Shingles around penetrations shall be removed without damaging adjacent roofing or underlayment. The flashing shall be securely nailed into the roof sheathing or roof support. Bituminous plastic cement shall be applied over the nail heads and the flashing edges. The roofing shall be properly replaced and all nail heads and the joint between the flashing and the vent shall be coated with bituminous plastic cement.

Flashing around mechanical equipment, chimneys, and other large protrusions shall provide an effective water seal.

9 Miscellaneous Roof Structures and Components. Chimneys, vent stacks, roof ventilators, other items piercing the roof, gravel stops, pitch pockets, ridge caps, and scuppers shall be repaired or replaced so as to function as originally intended and designed.

(d) Gutters and Downspouts. Clogged gutters and downspouts shall be cleaned out. Broken, damaged, misaligned, or leaking gutters and downspouts shall be repaired or replaced with new material to match the original in gauge, type of material and finish, and loose hangers and fasteners shall be tightened. Missing wire guards, hangers and fasteners for gutters and downspouts, and splash blocks shall be replaced. Splash blocks shall be properly positioned to receive the impact of drainage water.

(e) Exterior Concrete and Masonry Structures. Damaged footings, foundations, piers, columns, ornamental structures and exterior concrete (Portland cement and asphaltic) surfaced areas within five feet of the building or structure, such as patios, sidewalks, steps, and handicap ramps, shall be repaired so that they are structurally sound, at original alignment and grade except to meet ADA requirements, and are free of damage and major cracks. Roots that cause or contribute to concrete damage shall be removed and the area backfilled. Masonry fences, planters, and steps shall be repaired to replace missing or broken masonry units and repair deteriorated mortar parts, gaps, breaks, and loose components.

(f) Exterior Accessories. Damaged, deteriorated, or missing building numbers, exhaust fan vent caps, chimney caps, entrance canopies and other miscellaneous components and hardware shall be installed, repaired, or replaced as required.

(g) Stairs. Damaged or deteriorated stairs and stairways, including treads, risers, nosings, stringers, brackets, balustrades, handrails, and other components shall be repaired or replaced as required.

(h) Doors, Windows, and Screens. Doors (including storm doors), windows (including storm windows), and screens shall operate smoothly without binding or sticking in accordance with the manufacturer's design. Damaged, deteriorated, or missing doors, windows, and screens, and associated components shall be repaired or replaced as required. Caulking, glazing, and weather-stripping shall be fully intact to maintain a fully weather tight seal. Replacement glass shall be of the same size, type, and quality as the existing glass.

1 Doors. Damaged, deteriorated, warped, swollen, and sagged doors shall be repaired or replaced with doors the same type and size Exterior doors shall be removed and replaced the same workday. All replaced doors shall be installed with closers and other hardware from existing doors, if practicable All locking hardware must accept specified and provided locks. Cracked and broken glass in doors shall be replaced with glass of the same quality, type, and size Damaged or deteriorated weather stripping shall be replaced in accordance with its manufacturer's recommendations. Flattened spring-type weather stripping shall be lifted or replaced to provide an effective seal.

2 Large and Small Sliding Doors. Damaged and/or deteriorated metal and wooden sliding doors and related hardware shall be repaired/replaced with doors and related hardware of the same type, size, and color.

3 Screens and Screen Doors. Replacement screening shall be of the same material as the existing metallic screening. Small holes (less than four square inches) in screens may be repaired with a patch matching the existing screening. The free end wires of patches shall be bent around screen to secure patch in position. Exposed screening ends shall be cemented with a colorless plastic cement. No exposed screening ends shall protrude from the screen. Warped screen doors and frames shall be straightened if possible to fit squarely in opening. If beyond repair, warped items shall be replaced.

4 Hardware. Damaged, inoperable, or missing hardware such as hinges, locks, striker plates, latches, keepers, panic devices, window operating mechanisms, door closures, springs, etc. shall be adjusted, repaired, repacked, or replaced as required. Replacement hardware shall match existing hardware in type, size, quality and finish and meet the Building Hardware Manufacturer's Association (BHMA) Product Standards. All locking hardware must accept specified and provided locks. Hardware shall be installed in accordance with the manufacturer's recommendations.

5 Overhead or Rolling doors. After repairs or adjustment rails shall be checked for alignment. Rusted or corroded areas shall be repaired or replaced. All bearings, rollers, gears, and pulleys shall be properly lubricated. All hangers, bolts, springs, and pins shall be free of rust and corrosion and shall be tightly mounted and secured. Motors shall operate properly and be properly lubricated. Cables and fusible links shall be correctly installed and free from corrosion and rust.

6 Windows. Broken and cracked window glass shall be replaced to match the original to avoid personal injury, leaks and to keep solar coverings over windows in good repair. Windows designed to open and close shall move freely and be able to be secured as designed.

(3) Miscellaneous Work.

(a) Scaffolding and Staging. The Contractor shall provide and install safe, secure and sufficient scaffolding and staging in support of the maintenance and repair effort. All scaffolding shall comply with OSHA requirements. Scaffolding and staging erected or installed in conjunction with trouble calls, recurring work, and other fixed-price services is considered incidental to and part of the job, and shall be provided at no additional cost to the Government. Scaffolding and staging shall be ordered from the indefinite quantity portion of the contract only if the description of the work is beyond the scope of a trouble call. Additionally, the Contractor shall provide and install scaffolding and other supporting structures specifically in support of research and development operations performed by others. This operational support shall be included under the indefinite quantity portion of the contract.

(b) Shipping Containers and Storage Boxes. The Contractor shall fabricate customized, tailored wooden containers, boxes, and crates and provide chocking and blocking for the movement of material on an as-needed basis specifically in support of research and development and logistics operations performed by others. This operational support shall be included under the indefinite quantity portion of the contract.

(c) Miscellaneous Buildings and Structures. The Contractor shall perform maintenance and repair on miscellaneous buildings and structures such as employee recreation and child day care facilities, grandstands, bleachers, research structures, communication and other towers, storage platforms, guard shacks, picnic and bus stop shelters, grease and elevated garbage racks, flagpoles, monuments, fueling stations, playground and gymnasium equipment, and other miscellaneous structures listed in Attachment J-C1-21A.

(d) Signs. The Contractor shall furnish, fabricate, and/or make a variety of signs to consist of identifying plates, warning signs, directory signs, and general signs on sheet metal, aluminum, plastic, and wood using paint, or baked-on reflective products. The Contractor shall install the various types of signs using different fasteners and mounts.

i. Requirements For Painting. Also see Subsection C-17, *Corrosion Control and Coating Services.* Interior and exterior painting under this subsection shall include architectural, preservation, spot, and touch-up incidental to repair painting of all types of surfaces on buildings and miscellaneous structures and equipment including machinery, pipes, ducts, conduit, structural steel, walls and siding, chain link fencing, and platforms. Interior and exterior painting performed in conjunction with trouble calls, recurring work, and other fixed-price services is considered incidental to and part of the job, and shall be provided at no additional cost to the Government. Painting shall be ordered from the indefinite quantity portion of the contract only if the description of the work is beyond the scope of a trouble call. The indefinite quantity unit prices bid shall include all costs for surface preparation, caulking, required spot priming, protection of items which are not to be painted; and other requirements as specified in this paragraph. All painting, whether interior or exterior, fixed-price or indefinite quantity, shall include all work necessary for a finished job including special markings (such as arrows, color coding or product identification (e.g., CO2), windows, door frames, trim, molding, closets, and shelves. Attachment J-C19-17 provides a schedule for corrosion control (Subsection C.17) and the coating of various interior and exterior surfaces encountered at LaRC.

(1) Certificates of Compliance. Certificates of compliance from the manufacturer shall be submitted for all paint types listed in the Paint Schedule (Attachment J-C19-17).

(2) Protection of Areas. All furnishings, equipment, floor coverings, and other surfaces not to be painted shall be carefully moved, covered, or otherwise protected prior to painting. Items such as hardware, hardware accessories, machined surfaces, signs, blinds, curtains, plates, light fixtures, and similar items in contact with painted surfaces shall be removed, masked, or otherwise protected prior to surface preparation. After painting, the Contractor shall remove paint, both old and new paint, from surfaces not to be painted and restore the surfaces to their original condition. All removed items shall be repositioned and furnishings and other property returned to their original position. Painted items such as windows, doors, and cabinets shall operate smoothly without binding. The Contractor shall be responsible for the cost of repairing any damage caused to Government or personal property.

(3) Surface Preparation. Surfaces to be painted shall be cleaned to remove all dirt, dust, rust, scale, splinters, mildew, chalked paint, loose particles, disintegrated coatings, grease, oil, and other deleterious substances. Sanding, sand- and water blasting, wire brushing, washing, and chemical treatments shall be used as necessary to properly prepare the surface for painting, except that water and sand blasting shall not be used on unpainted wood. All scratches, nicks, cracks, gouges, spalls, alligatoring, and irregularities due to partial peeling of previous paint shall be repaired, sanded, spackled, caulked, or otherwise treated to render such defects practically imperceptible. Caulking and other compounds shall be allowed to cure for the times stated in the manufacturer's literature prior to painting. Existing enamel and other glossy surfaces shall be sanded. All new work, surfaces bared by surface preparation, and exposed nails and other ferrous metals shall be primed.

(4) Airless Sprayers. Application of paint by airless spray shall be accomplished only by firms and persons experienced in the use of this type of equipment. At least 15 calendar days prior to application of paint by airless spray, the Contractor shall submit data for the approval of the Contracting Officer demonstrating that the proposed applicators have successfully applied paint with airless spray equipment. The data shall include the names and locations of at least two locations where the applicators referred to above, have used the airless spray method for applying paint. The Contractor shall indicate the type and design of the airless spray

equipment and certify that this method of applying paint has been performed satisfactorily. All equipment shall be in good condition and operated in accordance with the manufacturer's instructions.

(5) Workmanship. Paint shall be applied carefully with good, clean brushes, rollers, or approved airless sprayers to provide smooth finished surfaces free from runs, drips, ridges, waves, laps, brush marks, variations in color, or other defects. Two coats shall be applied to all new surfaces, or surfaces bared by surface preparation, and as required to completely cover stains and marks. First coats shall be thoroughly dry prior to application of second coats, and there shall be an easily perceptible difference in shades of successive coats. Each coat shall be of sufficient thickness to completely cover the preceding coat or surface. Paint used in touch up painting shall blend with the color and texture of the surrounding areas.

(6) Paint Requirements and Schedule. Reference specifications and coating schedule are listed in Attachment J-C19-17. The Contracting Officer will specify the colors for finish coats from Federal Standard 595. Paint shall be delivered to the job site in original, unopened containers bearing the manufacturer's name, brand designation, and instructions for application. Thinners shall be used only when mandatory for the type of paint being used and with prior approval of the Contracting Officer. Paint products that meet NASA LaRC performance specifications are manufactured by Pittsburgh Paints, Sherwin-Williams and Glidden. Note that NASA LaRC follows the specifications and standards of the Steel Structures Painting Council (SSPC) for coating exposed structural steel. Paint manufacturer's recommendations shall be followed including the weather and other environmental conditions under which the paint should be applied.

j. Requirements For Plumbing and Piping Systems. Plumbing and piping work shall include maintenance and repair of the plumbing and piping systems and fixtures of each facility. Included are conventional plumbing, industrial piping, compressed air systems, high pressure gas distribution systems, filtration systems, bottled gas manifold systems, water distillation systems, water sterilizers, propane systems, natural gas systems, water distribution systems, sanitation systems, metering stations, pressure reducing stations, stills, autoclaves, expansion devices, vibration eliminators (pertinent to piping systems), filters, strainers, grease traps, and valves. Included also are the replacement, cleaning, relining, and installation of pipe and tubing. Excavation and backfilling services shall be provided by the Contractor. The Contractor shall obtain a digging permit for all excavations greater than 6 inches deep in accordance with LHB 1740.2, *Facility Safety Requirements*. Where excavations are provided for the work, the Contractor shall restore the area to its original condition. Flow adjustments shall be made in accordance with established flow control diagrams. When repaired, plumbing systems and fixtures shall be free flowing, in good, safe operating condition, free of leaks and drips. Domestic water lines shall be maintained from and include the service cut-off box or five feet beyond the outside of the building to and including any tap or plumbing fixture. Waste and sewage lines (including all lines six inches in diameter and smaller) shall be maintained from a point five feet beyond the outside of the building to and including any drain or plumbing fixture. Natural and propane gas lines shall be maintained from and including the cut-off valve at the pressure regulator and/or storage tank to and including the appliance, heater, or water heater connection. Hydraulic and pneumatic systems shall be maintained for leak-free and proper operation. All work shall meet the workmanship and material requirements of the American National Standards Institute A40.8-55, National Plumbing Code and applicable specifications. All work shall be performed in accordance with the LaRC Safety Manual and particularly, LHB 1710.40, *Safety Regulations Covering Pressurized Systems.*

(1) Major Internal Piping Systems. The work under this paragraph shall include trouble call work, recurring work, and indefinite quantity work on major piping, insulation and associated system components, including relief and pressure reducing valves, piping regulators, high pressure switches, transmitters, and hydraulic pumps. Non-destructive testing shall be performed on all systems above 125 psi and shall consist of , as appropriate, radiograph inspection,

magnetic particle inspection, and die penetrant testing. See also Subsection C.31., *Research Facilities Mechanical, Electrical and Fluid Systems Maintenance and Repair.* The following major types of piping systems are found in the various buildings and structures at LaRC:

(a) Compressed Air Systems, up to 6,000 psi. Appropriate pipe materials and sizes apply up to 24 inches.

(b) High and Low Pressure Gaseous and Liquid Nitrogen Systems. Appropriate pipe materials apply for pressure up to 12,000 psi.

(c) Methane Gas Systems. Appropriate pipe materials apply for pressures up to 6,000 psi.

(d) Liquid/Gaseous Oxygen Systems. Appropriate pipe materials apply for pressures up to 6,000 psi.

(e) Helium Systems. Appropriate pipe materials apply for pressures up to 6,000 psi.

(f) High Pressure Water Systems. Appropriate pipe materials apply for pressures up to 6,000 psi.

(g) Argon Systems. Appropriate pipe materials for low-pressure purge.

(h) CF_4 Gas System. Appropriate pipe materials for pressures up to 2,500 psi.

(i) Vacuum Systems. Piping diameter is up to 72 inches.

(j) Silane Systems. Appropriate pipe materials apply.

(k) Domestic Water System, 14 inches and smaller, under- and above ground throughout the facilities. Materials are PVC, CPVC, cast iron, galvanized, and copper. See also Subsection C.29., *Potable Water System Maintenance and Repair.*

(l) Sewage and Wastewater System, consisting of an 8-inch forced main and standard drainage systems. See also Subsection C.30., *Sanitary Sewer System Maintenance and Repair.*

(2) Hydraulic Systems. The work under this paragraph shall include trouble call work, recurring work, and indefinite quantity work on major hydraulic systems within LaRC facilities. Included is the maintenance and repair of piping, tubing, hoses, accumulators, gages, valves, pumps, servo control valves, filters, check valves, and fail-safe systems. See also Subsection C.31., *Research Facilities Mechanical, Electrical and Fluid Systems Maintenance and Repair.*

(3) Clean-up/Restoration. The Contractor shall mop up, vacuum, or otherwise remove water resulting from overflowing fixtures, leaks, clogged drains, etc. as part of the repair. Walls, ceilings, and other structures, paved areas such as sidewalks and roads, grassed areas, etc. which are damaged by and/or removed to gain access to leaks, clogs, or other defects shall be restored by the Contractor to original condition.

(4) Plumbing Fixtures. All sinks, tubs, toilets, urinals, basins, and faucets, lavatories, showers, drain lines, traps, etc. shall be free of leaks and drips, operate properly, drain freely, and be free of excessive dripping, cracks, and coloration. All fixtures and components thereof that cannot be repaired shall be replaced with fixtures that are in strict compliance with BOCA Basic Plumbing Code 978-4th Edition. ADA access requirements must be met.

(5) Domestic Water Heaters. Domestic water heaters shall be repaired or replaced as required to provide hot water at least 140° F, without leaks. Controls, control devices, and safety

devices shall operate safely and properly. Water heater insulation jackets (3 inch minimum thickness) shall be installed on all replacement water heaters and/or existing units when excessively worn, damaged, or missing.

(6) Drinking Fountains. The Contractor shall maintain, repair, and replace all drinking fountains and their component parts. Fountains shall be free of leaks and shall operate in accordance with the manufacturer's design specifications. All damaged and worn component parts shall be replaced. Replacement fountains or component parts shall be equal to or better in quality, size, and capacity to that being replaced. ADA requirements must be met. Fountains shall be firmly secured to support structures, and free of movement and vibration.

(7) Pipe Covering and Insulation. The Contractor shall cover and insulate all piping to eliminate failure due to extreme temperatures. This work shall include the application of various materials to piping, maintaining jackets on insulated piping and maintaining identification medium on piping surfaces.

k. Requirements For Security Fences. The Contractor shall provide maintenance, repair, and replacement of security fences identified in Attachment J-C1-21C to ensure that all exterior and interior fences are kept in good repair. All gates shall be maintained security tight and all hinges and locking devices shall be kept in good working order. Repairs required include, but are not limited to, the following: repairing holes in the chain link fence and wire cages; stringing barbed wire on top of the fence; replacing or resetting fence support stanchions; replacing or repairing hinges and locking devices; and removing rust and painting fences.

l. Requirements For Machining, Welding, and Metal Work. The Contractor shall provide maintenance, repair, or replacement of metal components of buildings and structures, installed building equipment such as exhaust fans, and shall construct and install metal components in support of other repair activities as required by this subsection. Machining, welding and metal work performed in conjunction with trouble calls, recurring work, and other fixed-price services is considered incidental to and part of the job, and shall be provided at no additional cost to the Government. This work shall be ordered from the indefinite quantity portion of the contract only if the description of the work is beyond the scope of a trouble call.

(1) Metal Work. Metal work shall include heating and bending to form metal shapes, drilling, torch cutting, hammer forging, grinding, sawing and fitting of metal parts. The Contractor shall perform metal work to maintain and repair or fabricate and replace metal components of buildings and structures, installed building equipment, and kitchen and shop equipment. Also included is the construction and installation of metal components in support of other maintenance activities. The Contractor shall work with materials from a variety of sheet metal stocks including aluminum, copper, galvanized and stainless steel.

(2) Piping and Tubing Fabrication. The Contractor shall fabricate and install piping of various materials including carbon steel, stainless steel, monel, inconel, and aluminum, using fit-up and weld methods such as open butt E.B. insert, socket weld, and chill rings. Additionally, the Contractor shall fabricate and install high-pressure stainless steel tubing. The work requires bending, flaring, soldering, welding, and the installation of various types of compression fittings.

(3) Welding. The Contractor shall provide all types of welding and brazing required for the maintenance and repair of buildings, structures, appurtenances, pressure systems, and machinery in accordance with applicable codes. Welding shall be performed on light, heavy gauge and hardened metals and castings using flat, vertical, horizontal, and overhead positions. Welding typically shall be performed on fixtures, brackets, tools, machinery, high pressure piping systems, pressure vessels, grates, catwalks, handrails, structural steel and test support stands. Processes include shielded metal arc welding (SMAW), gas metal arc welding (GMAW), preheating, brazing, bead welding, tack welding, plasma and flame cutting,

pressure welding and heat treating. Welding, burning and open flame work shall be subject to the following conditions: (1) the method must be approved by the Contracting Officer, (2) applicable code compliance in the area of Welding Procedure Specification, Welding Procedure Qualification, and Welder Qualification shall be satisfied for all welding work to be performed under this contract, including testing, documentation and record keeping and (3) the Contractor shall provide an adequate fire watch and the required fire extinguishing equipment, and (4) the Contractor shall notify the Contracting Officer and obtain a welding permit before proceeding. Applicable codes include American Society of Mechanical Engineers (ASME) Section IX, American National Standards Institute (ANSI), and American Welding Society (AWS) D1.1 and D1.3 standards.

(4) Machinist Tasks. The Contractor shall perform machinist tasks such as drilling, tapping, boring, reaming, and grinding a variety of materials such as steel, cast iron, stainless steel, aluminum, copper, brass, bearing bronze, manganese, babbitt, etc. The Contractor shall install equipment requiring critical alignment of motors, pumps, blowers, gear reducers, etc.

m. Requirements For Shop Equipment. The Contractor shall provide maintenance and repair services for a variety of plant property and personal property shop equipment such as milling machines, lathes, routers, band saws, and drill presses. The Contractor shall insure that the interval between monthly PMs for shop equipment in Building 1225, listed in J. C.9.4, does not exceed 35 days. The shop equipment is identified in Attachment J-C1-22A-G.

n. Requirements For Food Service Equipment. The Contractor shall provide maintenance and repair services for a variety of food service type equipment such as electric and/or gas baking ovens, grills, ranges, deep fat fryers, microwave ovens, ice cream boxes, food serving and salad bars, and dishwashers. These are identified in Attachment J-C1-22A-G.

o. Requirements for Special Events Support. Special event support typically involves erecting tents, staging, running temporary power and lighting, setting up chairs, preparing the site, post-event cleanup and take down, etc., and shall be ordered from the unit price labor and/or task listings in Section B in accordance with the *Indefinite Quantity Work* provisions of Subsection C.13.

p. Housekeeping. See Paragraph C.7.t., *Housekeeping*.

q. Hazardous Materials. See paragraph C.7.r, *Hazardous Materials*.

END OF SUBSECTION C.21

C.22. HEATING, VENTILATION, AIR CONDITIONING (HVAC) AND REFRIGERATION MAINTENANCE AND REPAIR

a. General Requirements. The Contractor shall operate, maintain, troubleshoot, and repair heating, ventilating, air conditioning, and refrigeration (HVAC/R), and HVAC control air systems and associated equipment at NASA LaRC (see J-C1). This work shall be in accordance with the requirements specified in this contract.

b. Scope of Work:

(1) Trouble Call Work. Trouble calls (included in the firm fixed price portion of the contract) shall be received, managed and worked in accordance with Subsection C.11, *General Requirements and Procedures for Trouble Call Work,* and this subsection.

(2) Recurring Work. Recurring work (included in the firm fixed price portion of the contract) in this subsection includes preventive maintenance, cooling tower and closed loop water treatment, cooling tower structure inspection and the preparation and maintenance of the Operation Procedures Plan. This recurring work shall be accomplished in accordance with Subsection C.12., *General Requirements and Procedures for Recurring Work,* and this subsection.

(3) Non-recurring Work. Non-recurring work shall be accomplished in accordance with Subsection C.13., *General Requirements and Procedures for Non-recurring (Indefinite Quantity) Work,* and this subsection.

c. Documentation. All work shall be documented in accordance with the requirements of Subsection C.11 for Trouble Calls, C.12 for Recurring Work, and C.13 for Indefinite Quantity Work. Additionally, Attachments J-C6-22 and J-C6-22A-C lists the records and reports required of the Contractor as part of this work and report formats, respectively. System and equipment deficiency information obtained from failed and marginally passed tests and certifications, or noticed during trouble calls, operator maintenance or preventive maintenance work shall be reported in accordance with Subsection C.7.o., *Reporting System and Equipment Deficiencies.*

d. Operation Procedures Plan. The Contractor shall develop an Operations Procedures Plan for work on the heating, ventilation, air conditioning and refrigeration systems at LaRC. The objective is to perform HVAC/R work in accordance with written and bound procedures to ensure that LaRC is provided safe, reliable, and efficient operation of the HVAC/R systems. The Plan shall be developed using the following guidelines: (1) existing LaRC operating procedures, (2) industry standards, (3) equipment & system manufacturer's instructions, (4) procedures outlined in the *LaRC Safety Manual.* The Plan shall address:

(1) Any special instructions and procedures to be used in performing HVAC/R work, observations and adjustments to be made, and any special qualifications of the technician who will be performing the task.

(2) Cooling tower and closed loop water treatment requirements, controls and indices to be met.

(3) Safety and accident procedures.

(4) R-12 refrigerant recycling and hazardous waste protection, packaging and disposal procedures.

A draft initial plan shall be submitted to the Contracting Officer for approval within 90 days of the contract start date, and the final plan shall be submitted for approval within 45 days after the Contractor receives the Government's response to the initial plan, unless otherwise noted. The initial Plan should incorporate existing LaRC documentation, procedures, and standards pertinent to this Subsection. The Contractor shall review the Plan at least quarterly, make updates, and resubmit the updated Plan (or a written

memorandum validating that the existing Plan is still accurate in all respects) to the Contracting Officer for approval by the third work day of the start of each quarter. Deviation from the approved standard operating procedures is acceptable only with the approval of the Contracting Officer.

e. Equipment and System Types. Services shall be provided on the following types of equipment and systems, as listed in Attachment J-C1-22A-H.

(1) Air conditioning equipment and systems, including reverse cycle cooling/heating systems, electrical resistance strip heating elements in window and through the wall type units, package units, and split/central system units with factory built-in elements and contained within the evaporator/air handling unit cabinet as an integral part of the system.

(2) Absorption, centrifugal, split systems, screw machine, and reciprocating chilled water systems.

(3) Scroll compressors and reheat equipment.

(4) Cooling towers and closed loop (hot water and chilled water) systems including structures, components, and systems

(5) Evaporative cooling systems.

(6) Ventilation equipment and systems.

(7) Refrigeration equipment and systems.

(8) Pneumatic, electrical, and electronic controls (including direct digital controls) and systems for air conditioning, heating and refrigeration systems.

(9) Miscellaneous equipment and facilities and systems.

(10) Unique cooling systems supporting research projects, processes or Control/computer rooms.

(11) Dehumidification equipment

(12) Peripheral systems.

f. Requirements for HVAC&R Recurring and Non-recurring Work. In addition to Subsection C.12, General Requirements and Procedures for Recurring Work, the following general performance and workmanship standards for HVAC&R work are included.

(1) HVAC System PM Shutdowns. PM checks, other than those included in the annual building shutdowns, which require shutting off the HVAC system for more than 30 minutes shall be performed after regular work hours or on weekends.

(2) Purge Steam Absorption Units. Purge all steam absorption units every two weeks. See Attachment J-C9-22C for unit locations and PM requirements.

(3) Periodic Cleaning, Sanitation. Routine and scheduled cleaning of work areas and systems, drains, drain piping, traps and pans (basin), condenser coils, oil filters, applicable air filters, after coolers, cooling and/or heating coils, blower shields and fans, grills, registers, screens, diffusers, electrical contacts switch boxes, motors, gauges, strainers, dampers, actuators, louvers, safety controls, and any other applicable equipment, shall be accomplished as a part of the regular scheduled PM and service, or more frequently as may be necessary to maintain a clean and sanitary operating condition. Cleaning and disposal of sludge from

cooling tower pans (sumps) shall be performed in accordance with environmental rules and regulations since sludge is considered hazardous waste.

(4) Lubrication, Oil.

(a) Check applicable equipment for excessive bearing temperatures, noise, and inadequate lubrication of bearings and moving parts. Lubricate in accordance with manufacturer's instructions, historical data in equipment history file or RCM guidance (See Attachment J-C33 as to type of lubricant/oil and frequency of lubrication). Check oil level and quality and change dirty/contaminated oil in accordance with manufacturer's instructions or RCM guidance (See Attachment J-C33). The Contractor shall make other adjustments to oil systems as required and check oil temperatures and pressures.

(b) A laboratory oil analysis shall check for acid, moisture, metals content and other contaminants in accordance with the particular chiller manufacturer's requirements. The Contractor shall submit the name of the proposed testing laboratory not more than 30 calendar days after the start date of the contract for the Contracting Officer's approval. Oil samples shall be drawn 45 days to 60 days prior to the appropriate PM , and copies of test results submitted to the Contracting Officer not more than two (2) weeks later. The oil sampling and analysis is a part of the PM program.

(5) Replacement and Cleaning of Air Filters. Cleaning of air filters shall include a check for dust, grease, and other deposits and for missing or improperly fitted filters. Replace throwaway type filters and those missing or having improper fit, wash permanent type filters in soapsuds or solvents, rinse with hot water, and restore viscous coating in accordance with manufacturer's instructions.

(6) Rust and Corrosion. Clean rusted and corroded areas on equipment. Prime the cleaned surfaces and paint using a primer and paint suitable for the particular equipment and material surfaces being painted (See Paragraph C.21.i., *Requirements for Painting*). Paint colors shall be matched as closely as possible to original or previous colors, or as otherwise approved by the Contracting Officer. Equipment identification data and manufacture name plate data shall not be obscured or covered up with paint.

(7) Motors, Drives, Sheaves, Shafts, Couplings, Blowers, Fans, Hubs, Belts, Bearings, Gearboxes, and Guards. Check for accumulations of dust, dirt, grease, and oil. Clean, adjust, service, repair, or replace items as necessary to correct existing deficiencies such as: worn, loose, missing, or damaged parts, guards, connections, and connectors; bent blades; worn, loose, broken or missing belts; unbalanced moving parts; shaft misalignment; worn or damaged couplings; excessive noises and vibrations; end play of shafts; bad bearings; ineffective isolators; vibration absorbers; etc. Check full load and run load amps of each electric motor, other than motors less than one horsepower and compare with manufacturer's data plate ratings. Check condition of motor windings and brushes.

(8) Wiring, Electrical Control Circuits, Systems. Check for loose, charred, broken, or damaged wires and insulation; short circuits, loose or weak contact springs; worn or pitted contacts; proper sizing of fuses; defective operation of parts and components; and other deficiencies. All wire splice connections shall be properly insulated. All electrical wiring, circuits, etc. shall be in accordance with the National Electrical Code for the particular application in which used. Clean, adjust, service, repair, or replace items found to be deficient.

(9) Fire and Safety Hazards. Check for dust, dirt, soot, oil and grease deposits and accumulations, drippings, presence of flammable materials, rags, debris, and any other conditions that may be construed to be a potential fire or safety hazard. Correct or remove from the site all fire and safety hazards.

(10)Thermostats, Sub-bases, Guards, Covers, Ambientstats, Sub & Master Controllers, Sensors, Transmitters, Temperature and Pressure Controls, Etc. Check for improper settings, defective operation, calibration and cleanliness, proper control voltages, and pneumatic air operating pressures. Check for deficiencies in wiring, tubing, piping, switches, relays, coils, solenoids, transformers, controls, sensors, thermostats and protective covers and guards, ambienstats, acquastats, pressure switches, reversing relays, timing devices, master and sub-master controllers, outdoor authority override controllers, etc. Clean, adjust, service, repair, or replace items found to be deficient.

(11)Air Handler Units, Ducts, Plenums, Grilles, Registers, Diffusers, Screens, Dampers, Vanes, Mixing Boxes, variable air volume (VAV) Boxes, and Balancing of Air Systems. Check plenum chambers, supply and return air ducts, branch ducts, mixing boxes, VAV boxes, dampers, registers, grilles, diffusers, louvers, and insect and bird screens. Check for dirt, dust and trash; air leaks, broken, ripped or torn insulation and disconnected ducts; loose or broken connections, brackets, hangers, supports, and other parts; excessive vibrations or other movements; defects in metal, fiber glass, and other materials; proper operation of movable parts such as dampers, louvers, and vanes in relation to the controlling device; and inadequate air flow and/or distribution in main and branch duct circuits. Check air handler unit systems for proper operation and correct cubic feet per minute (CFM) air flow. Balance air distribution systems to original design specifications for all areas being serviced by the systems. Check air temperatures and static pressures. Check turning vanes, fire dampers, access openings, doors, panels, outside air make-up systems, ducts, and screens. Clean by sweeping, brushing, dusting, vacuuming, washing, hosing with water, detergents, degreasers, solvents, chemicals, air pressure, steam, or other methods as are applicable to the nature of the item being cleaned, and as may be required to obtain desired results. Clean, adjust, service, repair or replace all items found to be deficient.

(12)Structures, Casings, Hangers, Supports, Beams, Platforms, Slabs, Pads, Vibration Absorbers, and Sound Isolators. Check mounting bolts; loose, broken, or missing parts, connections and hardware; improper level of equipment; and defective sound cushion isolators and vibration absorbers. Check for dirt, dust, trash, and other debris accumulated on or around the equipment. Check the security of all mounting and attaching points. Check for vibrations and other unusual movements. Clean, adjust, service, repair, or replace all items found to be deficient.

(13)Coils: Cooling/Heating, Condenser (Water and Refrigerant). Check for obstructions to airflow through all coils. Check for dust, dirt, and foreign materials accumulation, unusual noises and vibrations, and loose, missing or damaged parts. On direct expansion systems check for frosting or icing of coils; proper operation of expansion valves, capillary tubes and spider distributors; proper operation of automatic temperature controls and defrost timers; and check superheat across evaporator coils. Check all coils for leaks. On water cooling/heating coils check for proper water flow, temperature, and pressures across the coil. Clean and flush the waterside of water cooling/heating coils (as applicable) as necessary to correct any deficiencies not allowing for proper operation. Check for damaged, bent or corroded coil fins on all coils. Clean, adjust, service, repair, or replace items found to be deficient.

(14)Condensate Drains, Pans, Piping, Traps. Check all condensate drain pans for algae growth and sedimentation, damaged coatings and insulation, rust corrosion, and leaks. Check condensate drainpipes and traps to assure they are open and water flow is not restricted. Clean, adjust, service, repair, or replace items found to be deficient.

(15)Piping: Water, Refrigerate, Oil, and Air. Check for leaks, rust, corrosion, deformation, and material defects of all applicable piping and tubing. Check for piping and tubing vibrations, looseness, and rubbing against objects that can cause damage to the equipment; proper support for the piping and tubing; and vibraabsorbers, expansion joints and rupture discs.

Piping, tubing, and fittings being replaced shall be compatible with existing materials. Clean, adjust, service, repair, or replace all items found to be deficient.

(16)Compressors. Check for dust, dirt, oil and grease deposits and accumulations, leakage of refrigerant and oil, cracked/clear sight glasses and gauges, damaged fittings, piping, valves, etc. Check for loose connections, excessive or unusual noise and vibrations, proper suction and discharge temperature and pressures, and indications of excessive heat. Check oil levels, unloaders for proper operation, and change out dirty/ contaminated oil and filters. Check compressor full load and run load amps, compare against manufacturer's data plate rating, and record the findings. Check all electrical wiring and related components. Record the suction and discharge pressures and type and amount of refrigerant and/or oil added to the system, on the log sheet for air conditioning and control air compressors. Clean, adjust, service, repair, or replace all items found to be deficient.

(17)Air Cooled Condensers. Check for dust, dirt, foreign materials, oil and grease accumulations, leaks, excessive or unusual noise and vibrations; and loose, missing, or damaged parts. Check motors, sheaves, belts, bearings, shafts, supports, brackets, hardware, etc; check operation and calibration of fan cycling controls, low ambient switch controls and dampers, head pressure control louvers, actuators, and regulators, as applicable. Check for proper air flow through the condenser coil; and bent, damaged or corroded coil fins and fan blades. Remove weeds, bushes, and other obstructions within three feet of air cooled condensers. Clean, adjust, service, repair, or replace all items found to be deficient.

(18)Refrigerant and Oil Systems: Separators, Dryers, Strainers, Filters, and Oil Traps. Check for proper operation, refrigerant and oil leaks, and other material defects; check sight glass for clarity, cracks, or moisture. Check refrigerant and oil charges and levels. All systems with changeable core type filters/dryers shall be changed as part of the regular PM and service. Clean, adjust, service, repair, or replace all items found to be deficient.

(19)Pump Units. Check for dust, dirt, and other deposits; leaks; excessive or unusual noise and vibrations; and loose, broken, or missing parts and connections. Check for correct rotation and prime. Check seals, gaskets, packing, bearings, mounting bases and hardware, couplings, guards, and inlet and discharge pressures, and overall operations. Clean, adjust, service, repair, or replace all items found to be deficient.

(20)Tanks, After Coolers, Heat Exchangers, Heat Recoveries, Receivers, Accumulators. Check pressure tanks and other equipment items for damage and deterioration. Blow down or drain air tanks. Check all equipment items for leaks and missing or defective parts. Check pressure relief valves, check valves and regulators for proper operation. Check liquid levels, sight glasses, heat transfer, temperature differentials, and pressures as applicable.

(21)Balancing Chilled and Condenser Water Systems. Perform test of chilled and condenser water systems to assure these systems are providing the most efficient and economical operations attainable for that equipment and the facilities which it services. Check balance and rebalance if necessary to meet design specifications. Bleed air from chilled and condenser water loops as required to maintain efficient and standard operating conditions. Repair or replace automatic/manual bleed off valves in systems as required for proper operation.

(22)Insulation. Check for wet, damaged, missing, and deteriorated insulation and vapor barriers, broken tie wires, loose or missing binding bands, torn canvas jackets, etc. The insulation on all applicable system components shall be repaired or replaced as needed, with insulation materials having a vapor barrier and insulating value equal to or better than original or existing insulation materials. Insulated surfaces having moisture condensing on the surfaces shall be considered inferior and shall be replaced. Clean, adjust, service, repair, or replace all items found to be deficient.

(23) Exhaust Air and Ventilating Systems. Check for dust, dirt, grease, and oil accumulations; air flow and weather and elements integrity; suction pressure at air intake; operation of dampers, baffles, solenoids, protective guards, insect and bird screens; and caulking around flashing, ducts, collectors, smoke pipes, cowlings, hoods, caps, and covers. Clean or replace filters as applicable. Check for clogging, broken, or separated joints and seams in ducts, stacks, couplings, sheaves, belts, fan blades, blowers, etc. Check thermal insulation, protective coverings, vapor barriers, and loose or missing fasteners and hardware. Check for material defects and improper operation of moveable parts and components in relation to the controlling device. Check for loose, missing, or poor fitting flashing, fire and safety hazards, warning alarms, etc. Clean, adjust, service, repair, or replace all items found to be deficient.

(24) Valves: Hand, Check, Relief, three-way, Reversing, Float, Makeup, Bleedoff, Etc. Check applicable valves for operation, leakage, linkages, travel, range limitations, rust, dust, dirt, corrosion, scale, seizing, binding, mounting, clogging, broken, damaged or missing parts, and material defects. Check source of valve operation, i.e., pneumatic, electrical, pneumatic/electric, etc., for required pressures, electrical power voltages, etc. Clean, adjust, service, repair, or replace any parts, materials, components, or combinations thereof found to be deficient as a result of these inspections, to restore valves to a standard operating condition.

(25) Cabinets, Cases, Doors, Lids, Panels, Gaskets, Latches, Handles, Hinges, Hardware. Check for cracks, scrapes, gouges, separation, missing, broken or damaged parts and components, bad insulation, bad gaskets, leaks, fitting of doors, etc. Clean, adjust, service, repair, or replace all items found to be deficient.

(26) Cooling Towers. Check for external scale; leaks; defective valves and float assemblies; and deterioration and improper positioning of slats, baffles, and eliminators used to control water spray and/or distribution. See Subsection C.22.i , *Cooling Tower (CT) Systems*, for requirements for treatment of cooling tower water. Check for structural damage, rust, and corrosion. Check condition and operation of gearboxes (gear reducers), fans, blades and hubs, motors, drives, shafts, couplings, guards, bearings, etc. Check cooling tower water level, water make-up, drains, valves, overflow, and bleed-off. Inspect spray nozzles and cooling tower fill, clean, adjust, service, repair or replace all items found to be deficient and prepare and submit an inspection report per Attachment J-C6-22.

g. R-12 Refrigerant Management. The Contractor shall not knowingly vent or otherwise dispose of any refrigerant in a manner that would permit its release into the environment. Refrigerants shall be captured and recycled in conformance with all applicable federal, state, and local laws and regulations. The Contractor shall be responsible for control and distribution of the government owned R-12 refrigerant as shown in the inventory in Attachment J-C4-22. This includes maintaining accurate documentation of where refrigerant was used, the amount used and maintaining the inventory up-to-date. A yearly electronic report shall be provided to the Contracting Officer not later than October 1 of each year as specified in Attachment J-C6-22. The report shall include the amount of refrigerant used each month during the year and the refrigerant available

h. Air Conditioning Equipment. Air conditioning systems to be operated, maintained, and repaired are listed in Attachment J-C1-22A-H. These systems vary in size from 1 ton to 380 tons. Maintenance, repair, and operation of these systems shall be performed in accordance with the recommendations of the manufacturer and the provisions of this contract, including the following:

(1) Replacement of Burned out Air Conditioning and Refrigeration Compressors. When compressors are replaced, the internal refrigeration system shall be thoroughly cleaned in accordance with the Contracting Officer approved manufacturer's procedures. Additional precautions shall be taken following approved and acceptable industry standards and

practice to further control refrigerant system contamination and prevent damage to replacement compressors and components. Clean-up methods should include, but are not limited to, the use of clean up kits, suction and discharge line filters/dryers, moisture indicating sight glasses, acid testing kits, changing or adding of oil filters and system flushing, changing the oil, deep vacuuming of refrigerant system, leak checking, etc. Clean-up methods shall be used as appropriate for the particular system.

(2) Portable Air Conditioning (AC) Equipment. The portable AC equipment listed in Attachment J-C1-22A-H shall be transported, set up, operated, and maintained by the Contractor if needed to provide temporary cooling during periods when the Contractor is performing repairs. This work shall be performed as part of the trouble call or IQ work, as appropriate. When directed by the Contracting Officer the portable air conditioning equipment shall be provided under the Non Recurring Work (Subsection C.13) provisions of the contract. The system shall be maintained, repaired, and operated by the Contractor to the same extent as other equipment included in the contract, including equipment inspections, start-up and shut-down service, and daily operational checks when in use.

(a) Procedures. Setup procedures for the trailer mounted portable systems stored at Building 1156 are as follows. The Contractor shall provide equipment and labor as required to transport the system to the needed location and back to storage. When the system is needed by the Contractor and is available, the Contractor shall notify the Contracting Officer that the equipment is to be used. This notification shall be at least two days in advance in the case of routine requirements and as soon as the requirement is known in the case of emergency or urgent requirements. The Contractor shall acquire and maintain all hoses, connections, flanges, couplings, hardware, and other components needed; and all labor as required for setting up and connecting the system to the building being served.

(b) Records. The Contractor shall maintain a log that list location of portable units, name of requester, and dates requested, installed, and returned.

(3) Condensate Piping and Lines. Condensate drain pans, piping and lines, insulation materials, valves, traps, brackets, supports, flanges, hardware, and other related components shall be maintained.

(4) Two Pipe Cooling/Heating Water Distribution Systems. All equipment components, pumps, motors, valves, water coils, controls, etc., associated with two pipe water distribution systems shall be maintained and repaired. This includes distribution systems where water is chilled at a central or auxiliary cooling plant, and includes all piping and its insulation, supports and hangers and all equipment components such as pumps, motors, valves, controls, etc.

(5) Window and Through-the-Wall Type Air Conditioning Units. Window and through-the-wall units include straight cooling types, cooling/heating reverse cycle types, types with electrical resistance strip heat as primary heat source, and cool/heat reverse cycle units with supplemental electrical resistance strip heat. The inventory of window air conditioning systems is in Attachment J-C1-22H and the PM requirements are in Attachment J-C9-22B. Maintenance and repair of these units include work on cabinets, casings, openings, carpentry trim work, caulking, insulation, brackets, supports, painting, and other work normally associated with these types of equipment. When window or through-the- wall type units are removed for servicing or replacement, the opening shall be covered with a weather and element resistant material in such a way as to prevent the entrance of water, dust, and insects into the facility from which the unit was removed.

(6) Filter Maintenance. The filters listed in the PM program shall be changed or cleaned at the frequencies specified. See Attachment J-C16-22 for filter location and filter sizes.

(7) HVAC Ducting. The Contractor shall clean, repair and replace HVAC ducting (sheetmetal, fiberboard, and prefab plastic) as required to maintain the air distribution system in accordance with industry standards.

i. Cooling Tower (CT) Systems. The Contractor shall furnish services for the maintenance and repair of cooling tower systems, and for the treatment of cooling tower-circulating water as recurring work. These services shall be carried out in compliance with environmental regulations. The services shall consist of, but not be limited to, development of a treatment program for each cooling tower; flushing and cleaning of cooling towers; and testing and treatment of circulating water to prevent accumulation by precipitation of scale, corrosion, biological growths, and other foreign materials. Attachment J-C17-22 provides a list of the cooling towers requiring service.

(1) Treatment Program. The Contractor shall provide a circulating water treatment program for each cooling tower listed in Attachment J-C17-22 in accordance with the following requirements. Attachment J-C17-22 also provides data on the existing treatment program. After approval the Contractor's program shall be continuously monitored and modified by the Contractor as required to meet the treatment standards specified. All proposed changes to the approved program shall be submitted in advance for the Contracting Officer's approval.

(a) Proposed Treatment Program. An outline of proposed chemical treatment procedures shall be provided for the Contracting Officer's approval at least 15 calendar days prior to the start date of the contract. In developing the treatment program the Contractor shall utilize chemicals and procedures which shall require the smallest water make-up in order to reduce water consumption. The proposed procedures shall comply with the requirements specified in clause (b), Treatment and Control Requirements, below, and shall include:

1 The manufacture, amount, type, and methods of feeding and controlling of chemicals to be used. Where applicable, include chemical active ingredient levels in parts per million (PPM).

2 Shop drawings showing the proposed installation of chemical feed equipment and coupons required for corrosion testing. Information should include type of coupon to be used and length of test.

3 Proposed limits for pH, total dissolved solids, corrosion inhibitor, scale inhibitor, and biocide. The concentration ratio to be used as the operating base, as discussed in Paragraph C.22.i.(1)(b)5 shall also be provided.

4 Proposed chemical shipping, handling, and storage procedures. Include specimen label, product registration number, and application instructions for all proposed algaecides.

5 Proposed record keeping forms and procedures.

6 Proposed circulating water, makeup water, and scale and corrosion testing procedures.

7 Name, address, background, and other pertinent information on proposed independent testing laboratory.

(b) Treatment and Control Requirements. The Contractor's cooling tower water treatment program shall be designed to minimize corrosion, scale, deposition, and microbiological activity and shall be effective over the entire expected temperature range. All chemicals shall be commercially available for use in the treatment of cooling tower water. All chemical additions and treatment methods shall comply with the latest Environmental

Protection Agency requirements and recommendations, and bleedoff water and other discharges shall be maintained in compliance with all applicable federal, state, and local laws and regulations. Chromates and other chemicals that are considered potential pollutants shall not be used. Present system limits are cycles 4 to 6, ph max 8.9 and ortho phosphates 5-10.

1 Corrosion Control.

a Mild steel corrosion rates shall be maintained below 4 mils per year (mpy).

b Copper and cupro nickel corrosion rates shall be below 3 mpy.

c Corrosion rates for other cupon material shall not exceed 5 mpy.

d Historical records shall be maintained electronically on chemical consumption for each tower and a report submitted to the CO yearly.

e EPA bans chromium for use in cooling tower water treatment and shall not be used.

2 Scale Control. Sufficient scale inhibitor/polymer shall be applied to prevent any calcium carbonate or calcium sulfate scale. Control limits for pH shall be designed to prevent such scaling. No acid will be used.

3 Deposit Control. Specific deposit control agents shall be applied to prevent and minimize suspended solids deposition within exchangers.

4 Microbiological Control.

a Bacterial testing shall be performed to determine bacterial levels in the cooling tower. Test results shall be used to indicate when the biocide treatment should be changed or altered. Towers shall be shocked whenever microbiological growth is 5 or greater using the Easy Cult method. Historical data on results shall be maintained electronically to determine the most effective treatment and submitted to the CO monthly(See Attachment J-C6-22A).

b Algae growth shall be minimized and no heavy accumulations of algae shall exist in the system.

c The total lethal dosage rate of biocide used shall never drop below a 25% level.

d No deterioration of wood components shall occur as a result of the treatment program.

e Algaecides used shall be registered with the Environmental Protection Agency under the *Federal Insecticide, Fungicide, and Rodenticide Act*, as amended (7 U.S.C. 136 (et seq.)) specifically for use in cooling towers. The algaecide shall be used in strict conformance with label instructions.

5 Cycles of Concentration. The dissolved solids concentration in the circulating water shall be controlled within the range of accepted chemical treatment practice and such that the treatment program provided shall positively prevent scale and corrosion. The Contractor shall calculate a concentration ratio as the operating base and shall consistently control the concentration ratio of the circulating water within plus or minus one of the operating base. The operating base shall be calculated with regard to the makeup water quality and the maximum concentrations of mineral solids

(silica, hardness, and alkalinity) allowable under the chemical treatment program. For information only, 5 cycles were used previously.

6 Cleaning and Flushing. All cooling towers shall be cleaned and flushed of scale, trash, mud, dirt, algae, slime, and other foreign material as necessary to remove excess accumulations of such foreign material.

(2) Test Requirements.

(a) Circulating Water Testing. Circulating water from each cooling tower shall be tested weekly for pH; conductivity; scale and corrosion inhibitor levels; biocide; and bacterial levels. Cycles of concentrations shall be calculated weekly using chlorides. Where applicable, tests shall be conducted in accordance with the latest edition of *Standard Methods for the Examination of Water and Wastewater.* Test results shall be submitted with each monthly invoice.

(b) Makeup Water Testing. Makeup water comes from the LaRC potable water source. The Contractor shall obtain an analysis of this water monthly to check constituent variability, and adjust chemical treatment procedures as required with respect to pH, color, turbidity, P alkalinity, MO alkalinity, total hardness, non carbonate hardness, carbonate hardness, total dissolved solids, specific conductance, calcium, magnesium, sodium, potassium, hydroxide, bicarbonate, carbonate, sulfate, chloride, nitrate, iron, manganese, silica, fluoride, and chlorine residual. Tests shall be conducted in accordance with the latest edition of *Standard Methods for the Examination of Water and Wastewater.* Test results shall be provided to the Contracting Officer within five working days after sampling.

(c) Scale and Corrosion and Deposition Tests. The Contractor shall provide for accurate measurement of corrosion consistent with ASTM D2688 (Coupon Test Method) or the corrosion test method described by the National Association of Corrosion Engineers (NACE). As a minimum the Contractor shall furnish and install mild steel and copper corrosion coupons in each metal cooling tower system as depicted in the latest edition of ASTM D2688, Method B, *Standard Methods of Test for Corrosively of Water in the Absence of Heat Transfer, Coupon Test.* Coupons shall be installed at the beginning of the contract and replaced every 90 days. Coupon holders shall be repaired or replaced as required to maintain in compliance with ASTM or NACE standards. Identifying marks shall be placed on each coupon and complete records shall be kept of installation and removal dates, locations, initial weight, final weight, length, width, thickness, amount of fouling, and exposure time. Scale and corrosion tests shall be conducted by the approved independent testing laboratory in accordance with ASTM D2688, and results provided to the Contracting Officer within 14 working days of each coupon's replacement. Reports shall include a scale analysis or corrosion rate in mils per year, and a written description based on ASTM D2688.

(3) Equipment Requirements. All equipment used in the approved treatment program shall be furnished and installed by the Contractor, and shall comply with the following:

(a) Automatic Bleedoff and Chemical Feed Control. Automatic bleedoff and chemical feed controls shall consist of a conductivity meter, which controls both the bleedoff and chemical feed of the cooling tower system. Automatic bleedoff controls shall monitor the circulating water and regulate bleedoff water to maintain the proper concentration. The chemical feed shall be properly controlled so that the proper amount of chemicals is automatically fed to replace that lost through bleedoff.

(b) Pumps. Pumps shall have a capacity compatible with the chemical feed requirements of the individual cooling tower system served. Pump operation shall be controlled by an automatic adjustment that shall proportion the chemical feed at a step rate in accordance

with the bleedoff rate. In addition, a manual switch shall be provided to allow control of the pump independently of the feeding regulator. Manual adjustments necessary to accomplish capacity control shall be simple and positive. The pump shall be of noncorrosive construction and shall have an internal checking device or shall be provided with an externally mounted noncorrosive check valve. The pump shall be capable of discharging against a pressure of not less than 1 1/2 times the line pressure at the point of connection.

(c) Chemical Solution Tank. Chemical solution tanks shall be constructed of non-corrosive material, and have a sufficient capacity to require recharging only once per seven days during normal operation. The charging concentration chosen shall prevent deterioration of the chemical solution during the twenty one-day period and prevent concentration of ingredients in the chemical solution. The tank shall be provided with a valved cold water line and, if necessary, a valved hot water fill line. Both shall have a suitable air gap. The tank shall have a graduated sight glass or other suitable device to indicate the quantity of solution in the tank. In addition, the tank shall be equipped with a suitable removable perforated non-corrosive basket for dissolving chemicals in the tank. A suitable electric mixing device shall be provided with the tank.

(4) Maintenance and Repair. Cooling tower structures and all components thereof shall be maintained and repaired, including all motors, fans, gearboxes (gear reducers), and hubs; drives, shafts, couplings, sheaves, belts, and guards; float assemblies and valves; drain lines, piping, and valves from the cooling tower pan (basin) to the point at which water is discharged into the sewer or storm drain system, including all supports, brackets, flanges, and hardware to maintain the piping; bleed off systems; and make up water piping and valves (from the valve itself into the cooling towers and systems). See Attachment J-C9-22A for a cooling tower PM checklist, which shall be completed and submitted to the CO within 5 days of the inspection.

(5) Cooling Tower Water Consumption. The Contractor shall read CT make-up water meters as listed in Attachment J-C17-22 and record the results in the CMMS in accordance with the requirements specified in Attachment J-C6-22. The Contractor shall observe CT water usage both on CT with meters and those without meters and should the observations reveal a substantial change or high water consumption the Contractor shall determine the cause and take appropriate corrective action. When observations reveal substantial change or high consumption the Contractor shall notify the Contracting Officer within one working day of the observation. One of the Centers environmental goals is to reduce water consumption, therefore the Contractor shall operate and maintain cooling towers with this goal as a guide.

(6) Cooling Tower Inspection. Cooling tower structures shall be inspected yearly, including all components both internal and external. The Contractor shall document the inspection in the CMMS. The date of the inspection, inspector's name, and inspection findings including deficiencies shall be recorded.

j. Chemical Treatment of Closed Loop Water Distribution Systems. Attachment J-C18-22A provides a list of facilities containing chilled and hot water distribution systems that have an established chemical treatment program. Attachment J-C18-22A and J-C18-22B provide data on the existing treatment program. The Contractor shall continue the existing treatment program for the first 90 days of the contract term, then, every 90 days thereafter, provide an inspection check and subsequent adjustments in chemicals to maintain pH limits of 7.0 to 10.0, and nitrite levels of 500 to 1,000 PPM as N02. Inspection checks and any required adjustments shall be made at 90-day intervals throughout the term of the contract. The Contractor shall maintain detailed records of the results of all inspection checks and chemical treatments to include: building number and system, date chemicals were applied, description of chemicals used, quantity of chemicals used per system to maintain standards, chemical level readings in system before and after adjustments, date of inspection check and adjustment, and name of person(s) performing the inspections and/or

adjustments. This information shall be provided to the Contracting Officer in writing within five working days of each inspection check.

k. Refrigeration Units and Systems. The refrigeration units and systems to be maintained and repaired are listed in Attachment J-C1-21A-G. These systems include cold storage plants with freezer and refrigerated walk-in rooms, walk-in freezer reach-in freezer and refrigerated boxes; refrigerated display cases, salad bars, sandwich bars, food bars, beverage coolers and dispensers, milk storage and dispensing units, ice cream freezer units, ice making equipment, medical and immunization supplies refrigeration units, and refrigeration units; and various other miscellaneous equipment. Maintenance and repair of these systems shall be performed in accordance with the recommendations of, and as to meet the rated temperature ranges specified by, the manufacturer and the provisions of this contract.

l. Miscellaneous Equipment and Systems. Miscellaneous equipment and systems listed in Attachment J-C1-22A-G shall be maintained and repaired in accordance with the recommendations of the manufacturer and the provisions of this contract, including the following:

(1) Ventilating Equipment and Systems. The Contractor shall maintain and repair ventilating equipment consisting of ventilating, exhaust, and utility fans, and those systems associated with the operation of these items of equipment.

(2) Peripheral Systems. The Contractor shall maintain and repair peripheral systems associated with the equipment included in Attachment J-C1-22A-H, including the following:

(a) Pneumatic and/or electrical/electronic controls shall be maintained and repaired, including air compressors and all related components; air dryers, refrigeration and/or chilled water systems; and timing devices, switches, microprocessors, transformers, relays, sensors, gauges, thermometers, thermostats, subbases, covers, guards, sending units, dampers, wiring, tubing actuators, valves, fittings, piping, regulators, master and submaster controllers, etc., normally associated with the contracted equipment.

(b) All electrical wiring and conduit from the load side of the equipment starter; the equipment starter; the respective electrical drive motor for all equipment with remote magnetic starters, contacts, relays, etc.

(c) All refrigeration and oil systems piping and components thereof.

(d) All insulation of refrigeration and oil piping, chilled water piping, and other piping associated with equipment.

(e) All motors, starters, heaters, contacts, relays, fuses, timing devices, switches, transformers, wiring, etc. not specifically included elsewhere in the contract.

(f) Condenser water and chilled water circulating pumps, motors, starters, contacts, relays, switches, fuses, wiring, heaters, base mounts, shafts, couplings drives, guards, valves, seals, gaskets, rupture discs, pressure gauges, strainers, filters, thermometers, and piping between pumps and equipment, etc.

(g) Chilled water make-up system to include all piping, valves, filters, strainers, expansion tanks, and other related components thereof that are down stream from the make-up water regulating valve and/or manual by-pass valves, and to that point where the make-up water enters the chilled water system.

(h) On systems that have a magnetic starter, contact, or relay as an integral part of the unit, the Contractor shall maintain the wiring and conduit in between, up to the load side of the disconnect switch and/or circuit breaker, whichever is nearest to the unit. On systems

without magnetic starters, contacts, relays, etc., (such as exhaust fans), the Contractor shall maintain the wiring and conduit in between, up to the load side of the disconnect switch, on/off switch, and/or circuit breaker, whichever is nearest to the unit.

(i) All incidental materials, hardware panels, boxes, brackets, supports, weather-stripping, caulking, sealing, flashing, connections, etc., as required.

(j) Any other equipment, systems, components, and parts relative to the maintenance, repair, and operation of equipment not specifically covered elsewhere in this contract, unless specifically excluded.

(3) Dehumidification Units and Systems. Dehumidification units shall be maintained and repaired to the recommended standards of the manufacturer and in accordance with the provisions of this contract.

(4) Vacuum Pump Units and Systems. Vacuum pump units and systems shall be maintained and repaired in accordance with the manufacturer's manuals and procedures and the provisions of this contract.

(5) Drinking Fountains. Drinking fountains shall be maintained and repaired in accordance with the recommended standards of the manufacturer and in accordance with the provisions of this contract. Water temperatures shall be maintained within design specifications and coolers well adjusted to provide for a suitable and adequate water flow when dispensing. Systems include supply water piping, filters, screens, strainers, and valves from the supply water shut-off valve to the unit; and drain water piping and traps from the unit to the point where water discharges into the floor drain or other drain system, or to that point where the drain piping passes through a wall or floor.

END OF SUBSECTION C.22

C.23. HIGH AND LOW VOLTAGE ELECTRICAL DISTRIBUTION SYSTEMS MAINTENANCE AND REPAIR

a. General Requirements. The Contractor shall operate and maintain the electrical distribution and emergency power generation and backup systems at NASA LaRC (see J-C1). Electrical distribution includes all facility electrical distribution systems such as overhead and underground transmission and distribution lines (from delivery points to all main service entrance switches in buildings and structures including substations and accessories), electrical manholes, exterior lighting systems (including street, flood, perimeter and security lighting), secondary drops to the building or structure weatherhead or first connection to the building system, and emergency power generation and backup power systems. The work includes the identification, planning, scheduling, status reporting, and analysis of electrical distribution and emergency power generation and backup systems operations, maintenance and repair. Also included is the testing and inspection of safety equipment. *The work under this subsection is not confined to the property of LaRC, but also includes limited support to Langley Air Force Base and to the Hampton Roads Trash Burning Facility (RECOUP)* consisting of the 2.4 kV feeder up to and including air switch number 4S13 located at RECOUP.

b. Scope of Work.

(1) Trouble Call Work. Trouble calls shall be received, managed and worked in accordance with Subsection C.11, *General Requirements and Procedures for Trouble Call Work,* and is included in the firm fixed price portion of the contract.

(2) Recurring Work. Recurring Work (included in the firm fixed price portion of the contract) in this subsection includes preventive maintenance (including replacing empty nitrogen cylinders) periodic transformer and battery checks, testing and inspection of safety equipment, substation relay calibrations, meter reading, and the preparation and maintenance of the Operation Procedures Plan, and shall be performed in accordance with Subsection C.12., *General Requirements and Procedures for Recurring Work* and this Subsection.

(3) Non-recurring Work. Non-recurring work shall be performed in accordance with Subsection C.13, *General Requirements and Procedures for Non-Recurring (Indefinite Quantity) Work.*

c. Documentation. All work shall be documented in accordance with the requirements of Subsection C.11 for Trouble Calls, C.12 for Recurring Work and C.13 for Indefinite Quantity Work. Additionally Attachments J-C6-23 and J-C6-23A-H lists the records and reports required of the Contractor as part of this work and provides required formats, respectively. System and equipment deficiency information obtained from failed and marginally passed tests and certifications, or noticed during trouble calls, PT&I or preventive maintenance work shall be reported in accordance with Paragraph C.7.o., *Reporting System and Equipment Deficiencies.*

d. Operation Procedures Plan. The Contractor shall develop an Operations Procedures Plan for work on the high and low voltage distribution system at LaRC. The objective is to perform Power Distribution work in accordance with written and bound procedures to ensure that LaRC is provided safe, reliable, and efficient operation of the electrical distribution system. The Operations plan should address the contractor's approach to furnish a steady, fault-free power supply during mission support periods, during system or major component failure, during severe weather, and during commercial power load shed and brown-out periods. The Plan shall be developed using the following guidelines: (1) existing LaRC operating procedures, (2) the National Electrical Code (NEC), (3) equipment and system manufacturer's instructions, (4) procedures outlined in the *LaRC Safety Manual.* The Plan shall address:

(1) A description of the conditions warranting emergency power generation and the provision of backup power. (including the correct sequential steps to be taken)

(2) Load shedding and mission support/severe weather contingency procedures using the LaRC Emergency Plan, LHB 1047.1, *Disaster Control Data – Hurricanes and High Tides, LaRC Buildings and Equipment.*

(3) Procedures for testing hot sticks, rubber sleeves and rubber blankets if not otherwise specifically addressed in the PM program.

(4) Safety and accident reporting procedures.

(5) Procedures governing the handling of PCB and other hazardous waste

(6) The plan should explain in general terms the steps that will be taken to restore power to a facility or system. As an example, for a high/medium voltage cable fault:

(a) The power source(s) would be isolated and Red Tagged to the appropriate person
(b) All loads would be isolated and the cable insulation tested with the correct "megger" device
(c) The possible fault location will be isolated down to the point where a single cable is identified as the problem area. This will be accomplished by isolating cables from each other
(d) Examine the system to determine the best method to restore power to the affected facilities/systems using portable generators/alternate feeders/installing temporary cable (above ground/below ground)
(e) Repair the cable fault after the power to all facilities has been stabilized by the sources mentioned above

A draft initial plan shall be submitted to the Contracting Officer for approval within 90 days of the contract start date, and the final plan shall be submitted for approval within 45 days after the Contractor receives the Government's response to the initial plan, unless otherwise noted. The initial Plan should incorporate existing LaRC documentation, procedures, and standards pertinent to this Subsection. The Contractor shall review the Plan at least quarterly, make updates, and resubmit the updated Plan (or a written memorandum validating that the existing Plan is still accurate in all respects) to the Contracting Officer for approval by the third work day of the start of each quarter. Deviation from the approved standard operating procedures is acceptable only with the approval of the Contracting Officer.

e. Safety. All Contractor employees are responsible for observing safe practices and procedures in their work environment in accordance with the Government-approved Operations Plan, *LaRC Safety Manual*, and in particular, with LHB 1710.6, *Electrical Safety*, and LHB 1740.2, *Facility Safety Requirements* and the codes and standards referenced therein. See also Subsection C.7.c., *Safety Requirements and Reports.*

(1) Two-Person Safety Rule. In the following situations the Contractor shall provide at least two (2) persons to work together – one (1) person, trained to recognize electrical hazards, shall be delegated to watch the movements of the other(s) doing the work so that the other(s) can be warned if they get dangerously close to live conductors or perform other unsafe acts and so that they can be assisted by that person in the case of an accident:

(a) Work on energized overhead lines, bus and switchgear.
(b) Work in energized substations.
(c) Work at remote or isolated locations.
(d) Work at night or during inclement weather conditions.
(e) Work involving handling energized conductors or apparatus.
(f) Confined space entry.

(2) Red Hold-Off Tags/Lockout. Safety clearance procedures and responsibilities (red tag) are set forth in LHB 1710.10, *Safety Clearance Procedures (Red Tag).* Refer also to Subsection C.7.c (same title).

f. Electrical Work.

(1) Work Performance. The Contractor shall operate, maintain, construct, repair and/or replace the electrical systems and their associated components covered by this subsection in accordance with the Government-approved Operations Plan (Subsection C.23.d.). Attachments J-C13-23A-C lists the drawings that are available of LaRC high- and low-voltage electrical systems. Services shall include installation, modification, repair and troubleshooting of electrical feeders, branch circuits, lighting fixtures, lighting and power systems, and associated support. These systems include solid state industrial controls. Large contractors and switchgear operate at voltages up to 115,000 volts. The Contractor shall operate and maintain the electrical systems and their associated components as defined herein and as recommended by the manufacturer. Contractor personnel working with and around high voltage distribution systems shall be trained, experienced and certified to work with them. The workmanship for new construction and renovation shall meet, as a minimum, the requirements as specified by the National Electrical Code (NEC) and applicable IEEE standards. The Contractor shall schedule and obtain approval for electrical power outages in accordance with the written documentation submitted (Attachments J-C6-23E-F). Power outage request processing is a part of the firm fixed price portion of the contract. The Power Outage Request Form is to be used when the extent of an electrical power outage involves or affects personnel outside of the facility, such as impacts on fire protection, air conditioning crew (who are needed to reset HVAC systems), and security or other systems affected by the outage and are controlled from outside of the facility. The Contractor shall first obtain approval in writing from the Contracting Officer prior to any deviation from the NEC requirements and the Government-approved Operations Plan. Further, the overall quality of any repair, including materials, shall comply with the applicable specifications, codes and standards (see Attachment J-H1). Work shall be comparable to the original construction quality for the system or unit and shall be made in such a manner as to assure a safe and reliable electrical system.

(2) Documentation. All work shall be documented on the CMMS in accordance with the requirements of Subsection C.11 for Trouble Calls, C.12 for Recurring Work, and C.13 for Indefinite Quantity Work. Additionally, Attachment J-C6-23 A-D lists the records and reports required of the Contractor as part of this work. System deficiency information obtained from failed and marginally passed tests and certifications, or noticed during trouble calls or preventive maintenance work shall be compiled into a prioritized list of repairs. Any systematic problems or problems with equipment components shall be reported to the Contracting Officer within 24 hours from the time the discrepancy is first discovered. Within one working day after any 2.3 kV and above system or component failure or an unplanned outage: a follow up typed or electronic report shall be given to the Contracting Officer. It should detail the name(s) of the personnel that responded to the trouble call, date and time of call, initial description of the conditions (breaker trip, relay target on A phase, etc.), facilities/systems effected, troubleshooting and corrective actions taken, time power restored, resulting capacity of the restored power and an estimate of resources required to fully restore operations. Also within that time the data shall be entered into the CMMS database in accordance with Subsection C.8.c., *Data Management.*

(3) Electrical Equipment. The Contractor, as part of the firm fixed price portion of this contract shall maintain electrical equipment listed in Attachments J-C1-22A-H and J-C1-23. This includes air, oil, vacuum, and SF_6-type circuit breakers and contractors, transformers, tap changers, switchgear, motors ranging from fractional horsepower to approximately 135,000 HP, generators, large banks of batteries, uninterruptable power supply systems, capacitor banks, control equipment and instruments associated with electrical power distribution,

primary substations, etc. The Contractor shall maintain electrical equipment so as to eliminate electrical distribution failures and power fluctuations. All activities shall be conducted in accordance with the Government-approved Operations Plan, applicable sections of the National Electrical Code and other guidance as specified (see Attachment J-H-1). In addition to Subsection C.12., *General Requirements and Procedures for Recurring Work*, the following general performance and workmanship standards for high and low voltage electrical distribution work are included.

(a) Primary Substations. The Contractor shall maintain primary substations in accordance with the procedures listed in Attachment J-C9-12C. This includes:

1 Substations involving voltage levels of 115 kV, 34.5 kV, 22 kV, 13.8 kV, 6.9 kV and 2.4 kV lines to their point of attachment to incoming lines.

2 All primary substation equipment such as cutouts; disconnect switches; SF_6 circuit switchers; air switches; air, vacuum, oil and SF_6–type circuit breakers; current and potential instrument transformers and associated metering and control devices.

3 Oil-filled and dry type transformers, grounding and lightning protection systems, and associated bus work and cables.

4 Overhead and underground primary servicing lines to the point of service connection feeding the substations.

5 Battery banks. See Attachment J-C1-23B. There are 18 battery banks that are located in either research facilities or substations. There are 4 battery banks that support the Communication Facilities that are used for UPS. Weekly PM on all 22 battery banks shall consist of random testing on three cells to include specific gravity measurement, voltage measurement, temperature measurement, checking and maintaining proper water levels, cleaning the batteries and the battery room and recording the test results and problems found. Monthly and quarterly maintenance shall be in accordance with Attachment J-C9.

(b) Transformers. The Contractor, shall perform a weekly nitrogen system, cathode protection and oil filled cable reservoir check and a monthly visual inspection of each transformer in use or stored for reuse. All transformers are listed in Attachment J-C1-22A-H and J-C1-23A.

1 Weekly Checks. The weekly nitrogen system, cathode protection, cable oil reservoir checks and generator operational check out shall be done at a frequency of at least every seven (7) days. The devices to be checked are listed on the Substation Inspection Record (See Attachment J-C6-23H-I).

a. Nitrogen System. The nitrogen blanket system on transformers and high voltage cables shall be accomplished in a manner that does not allow the gas filled devices to exhaust the supply at any time. Under normal circumstances, nitrogen cylinders are replaced if the documented historic consumption rate will not allow its continued operation until the next scheduled inspection, typically performed on Fridays. On the occasions where the nitrogen filled device develops a leak rate which will not allow maintaining adequate pressure until the next inspection, the Contractor shall replace the cylinders at an increased frequency to meet the demand and system requirements until a scheduled repair of the leak can be instituted. Replacement cylinders shall be ordered and their delivery coordinated in a timely manner. The historical data indicates approximately 200 nitrogen cylinders per year are consumed. In addition to the

nitrogen bottle inspection performed at Building 1290, the Contractor shall switch fan banks from one side to the other for 1KA and 1KB transformers.

b. Cathode Protection. Cathode protection monitoring consists of the notation of the power supplies output voltage and current on the various systems. Any changes from the normal levels shall be reported to the Contracting Officer for corrective action.

c. Cable Oil Reservoir. The cable oil reservoir check requires the Contractor to note that the tanks contain the proper level of cable oil and if equipped are not in alarm. On 1D cable oil reservoir the two chart recorders shall have their recorded charts removed, replaced and the old charts stored in the Building 1233 Control House.

d. Portable Emergency Generators. Emergency generator operational checks include starting and operating the equipment a minimum of 30 minutes operation per month. The devices shall be kept with an amount of fuel in their tanks to allow extended emergency operation when required. Any problems discovered with the generators shall be reported to the Contracting Officer. Attachment J-C1-23C lists the portable generators.

2 Monthly Visual Inspection. These inspections are part of the PM program, and may take place at any time during the month as long as there is a minimum of 30 days between inspections. The visual inspection shall include the investigation for any leak of dielectric fluid on or around the transformer and any other oil filled devices in the substations designated for inspection. The inspection shall be performed on devices only in the substations listed on the Substation Inspection Record (Attachment J-C6-23H-I). The inspection shall depend on the physical constraints of each transformer installation and should not require an electrical shutdown of the transformer being inspected. The Contractor shall inspect all transformers that are in service including PCB-containing and PCB-contaminated transformers. The transformer inspections shall also note the following elements:

a The presence of the appropriate labeling on both the transformer and the access to the transformer. If there is no labeling, or the labeling is in error, the Contractor shall notify the Contracting Officer.

b The presence of combustible materials within 15 feet of the transformer. If combustibles are present, the Contractor shall identify the situation and notify the Contracting Officer.

c The presence of secondary containment around the transformer.

d Transformer fan operational checks require the Contractor to switch all designated transformers with cooling fans out of the automatic fan position into the manual fan position and noting any devices not functioning and report them to the Contracting Officer.

e Operation and function of the temperature switch (every 4 years).

f Examine fences, gates and doors for proper grounding conductors, connections and operation. Report all problems noted or unsafe conditions to the Contracting Officer.

g Inspect grounds for trash and excessive vegetation, check for circuit breaker oil leaks and for any other unsafe conditions. Report all problems noted or unsafe conditions to the Contracting Officer.

(c) Secondary Equipment. The Contractor shall maintain secondary equipment involving voltages of 600 volts and below at nominal voltage levels of 480, 277, 208, and 120 single and three phase, at 60 hertz. This includes equipment consisting of substation secondary gear involving circuit breakers, current and potential instrument transformers, fuses, meters, recorders, relays, contractors, magnetic starters, bus ducts, cables, grounding systems, lightning systems, ground fault systems, and feeders.

(d) Power and Exterior Lighting. The Contractor shall maintain power and exterior lighting distribution systems including circuit breakers, switches, panels, receptacles, lighting fixtures, dimmers, contractors, motors, built-in appliances, emergency lighting and lighted exit sign systems, static grounding systems, obstruction lighting, relamping, fusing, conduits, and conductors. The Contractor shall relamp all burned out street and perimeter light fixtures and repair or replace all broken fixtures. Any inoperative fixtures reported to the Contractor by a trouble call shall be placed back in service within five (5) working days from initial notification. See also Subsection C.21.k., *Buildings and Structures - Requirements for Electrical.*

(e) Emergency Power Generation.

1 Standby Power Generation Plants. The Contractor shall perform monthly maintenance existing standby gas or diesel power generating plants in Buildings 1215, 1261, 1297, and 1236A. These plants include transformers, circuit breakers, gas or diesel engine-driven generators, associated control systems, batteries, chargers, gas supply line regulators, valves, controls, distribution systems with associated switchgear, fused cutouts, and unit load centers. The Contractor shall perform services on battery-operated emergency lighting systems, laboratory battery banks, and substation service batteries.

2 Fire Station and Emergency Communication Center (ECC). The NASA LaRC fire station, Building 1248, has a UPS, and a backup diesel generator. All backup power must be inspected, tested and maintained in accordance with the NFPA standards and LAPG 1710.11, the *LaRC Fire Protection Handbook.* The Contractor shall ensure that all backup power for the fire station central fire alarm system and Emergency Communication Center (ECC) located in Building 1248 is 100% operational at all times. (See also Subsection C.25, *Fire Protection and Life Safety Systems Maintenance and Repair.*)

(f) Uninterruptable Power Supply (UPS). The Contractor shall perform maintenance on fixed-mounted UPS systems in buildings 1236A, 1215, 1297, and 1261. Contractor maintenance shall be performed in accordance with manufacturer's recommendations. The Contractor shall inspect each UPS system every six (6) months. The inspection shall include inspecting each UPS system battery for proper battery fluid level, leaks, cracks, and deterioration, and test for specific gravity and voltage output as well as system current and voltage harmonic content, harmonic content of the ground and neutral currents, noise levels, static switch operation, switch closing time, battery bank current, and voltage output. The Contractor shall test all items under a simulated emergency. All defective batteries shall be replaced. The Contractor shall retain all inspection and test reports and enter the data, in a format approved by the Contracting Officer, into the CMMS within one (1) calendar day after the test.

(g) Miscellaneous. Under this subsection the Contractor shall inspect and maintain the electrical system of miscellaneous equipment, including parts, such as motors,

generators, coils, pumps, solenoid valves, controllers, regulators, back-up and power generation equipment. Also auxiliary equipment such as, shock absorbers, bumpers, position indicators, latch checking indicators, nitrogen systems, oil tanks on underground feeders, link boxes, cathodic protection systems, duct banks, underground conduits, conduits, vaults, and pull boxes.

(h) Substation Relays. The Contractor shall calibrate all substation relays requiring calibration biennially in accordance with requirements set forth in J-C9-0 thru 6, and J-C9-23. This work is highly specialized and may be performed only by technicians with appropriate training and experience with the test equipment to be used. The Government-furnished test equipment is manufactured by Doble Engineering Company and identified in Attachment J-C3 - 5C. Protective relay locations are listed in Attachment J-C1 - 23D.

(i) Materials and Contractor Equipment. The Contractor shall test and inspect high voltage rubber gloves at least every six (6) months and hot sticks, rubber sleeves, and rubber blankets at least every 12 months as part of the recurring work. The in-service high voltage rubber gloves (27 pairs) are to be removed from service by the Contractor every six months and replaced with gloves from the Contractor maintained spare inventory. The gloves removed from service shall be sent to a testing laboratory for certification. The Contractor shall replace in service gloves with gloves of the same size and voltage/classification rating (or greater). All gloves rejected by the testing laboratory shall be destroyed and replaced so that the spare glove inventory maintains at least the number of gloves in service plus 10. The historic cost for glove testing is approximately $133 every six months. The Contractor shall collect all high voltage rubber sleeves (6 pair) and send them out for testing and certification. All rejected units shall be destroyed and replacements obtained by the Contractor. The spare glove inventory and rubber blankets and sleeves are listed under Attachment J-C4-23. These and other electrical materials and equipment shall comply with the specifications and standards listed in LHB 1710.6, *Electrical Safety.*

g. Meter Reading. The Contractor shall record readings of all electric meters regularly on the last working day of each month, except where noted otherwise, and shall coordinate readings with any utility company readings where possible. Meter reading is recurring work and is included in the firm fixed-price portion of the contract.

(1) Meter Locations. Meter locations are identified in Attachment J-C25.

(2) Documentation. The meter readings shall be recorded in a format developed by the LaRC Energy managers Office. The format shall contain previous month's kilowatt hours (KWH) data, previous years KWH data, previous month's meter reading, meter multiplying factor, current month, and a place to document the meter readers name. If any meters are equipped with demand information, it needs to be recorded on the form. The Contractor shall record all information on the form and submit to the Contracting Officer within one (1) workday of the data being taken. The Contractor shall record the information in the CMMS within two (2) work days of the reading of the meters. In addition, the following meters shall be read at Building 1233 between the 20th and 25th day of each month: meters number 1, 904, 905 and 906. Demand information, if used for the meters, shall also be recorded. The documentation shall be furnished to the Contacting Officer on or before the 25th of each month. Any hardcopies of the report data shall be maintained by the Contractor and submitted to the Contracting Officer within five (5) days of contract expiration or termination.

h. Polychlorinated Biphenyls (PCBs) Contaminated Transformers and Equipment. The Contractor shall note that at LaRC there are transformers, transformer bushings and other equipment containing PCBs. These are identified in Attachment J-C1-23 A. The Environmental Protection Agency (EPA) has determined that due to the difficulty in determining if transformer bushings are

PCB-contaminated, if the transformer is found to be PCB-contaminated, its associated bushings shall likewise be considered to be PCB-contaminated. A copy of this determination is found in Attachment J-C23. Working with, handling, maintenance of, packaging, and disposal of PCB associated parts and equipment shall be done in strict adherence to the *LaRC Safety Manual* and OSHA and other statutory, regulatory, and local requirements. Refer to Attachment J-H1. Actual disposal of packaged hazardous waste will be done by others.

END OF SUBSECTION C.23

C.24. STEAM GENERATION, DISTRIBUTION SYSTEM AND REMOTE HEATING PLANT OPERATION, MAINTENANCE AND REPAIR

a. General Requirements. The Contractor shall perform operation, monitoring, preventive maintenance, trouble calls, repair and overhaul of the Central Steam Plant (Building 1215) at NASA LaRC in accordance with the requirements specified herein. Included are associated steam distribution and condensate return systems, and remote heating plants and associated facilities and equipment (including utility tunnels). Also included are other systems in Building 1215, such as the service air system (compressors, dryers, and valves), natural gas distribution system, domestic water and the distilled and deionized water system. Attachments J-C1-22A-G list and Attachments J-C1-24A-B describe the facilities and equipment to be maintained in this contract subsection. The work also includes water sampling, testing, analysis, and treatment; fuel oil monitoring, handling delivery and transfer; annual boiler inspection, tuning, and certification; and the maintenance of records and preparation of reports in order to provide high pressure steam (up to 350 psig) 24 hours per day, seven (7) days a week throughout the term of the contract. All duties are to be performed in accordance with OSHA, the *LaRC Safety Manual* and the safety and policy manuals and procedural guidance listed in Attachment J-H-1. Any deviation from Standard Operating Procedures shall be done only with the concurrence of the Contracting Officer.

b. Scope of Work. The work in this subsection includes:

(1) Trouble Call Work. Trouble calls (included in the firm fixed price portion of the contract) shall be received, managed, and worked in accordance with Subsection C.11, *General Requirements and Procedures for Trouble Call Work*, and this subsection. Repairs performed during the course of Operator Maintenance will not be considered or qualify as Trouble Call work.

(2) Recurring Work. Recurring work (included in the firm fixed price portion of the contract) in this subsection shall be accomplished in accordance with Subsection C.12, *General Requirements and Procedures for Recurring Work* and includes:

(a) Operating the Central Steam Plant.

(b) Operator Maintenance on Central Steam Plant equipment and systems.

(c) Preventive maintenance on equipment and systems, including remote on-site boilers and heating systems.

(d) Operating remote heating plants (See Subsection C.24.e.(1), *Steam and Service Air Generation*).

(e) Checking fuel storage levels as necessary at Building 1215 and remote locations, and delivering fuel to them when required to ensure continual service

(f) Providing support for annual boiler/pressure vessel inspections, developing boiler overhaul requirements, and documenting the results.

(g) Performing daily boiler water, feedwater, and condensate chemical sampling, testing and treatment from each operating boiler, cooling tower, and closed loop system.

(h) Performing annual boiler water chemical mix evaluations and analyses.

(i) Monitoring alarms.

(j) Preparation of the Operations Procedure Plan

(k) Daily monitoring of the LaRC steam distribution system (see Subsection C.24.l "*Steam Distribution System*")

(3) Non-recurring Work. Non-recurring work shall be accomplished in accordance with Subsection C.13., *General Requirements and Procedures for Non-recurring (Indefinite Quantity) Work*, and this subsection.

c. Documentation. All work shall be documented in accordance with the requirements of Subsection C.11 for Trouble Calls, C.12 for Recurring Work, and C.13 for Indefinite Quantity Work. Additionally Attachment J-C6-24 lists the records and reports required of the Contractor as part of this work. System and equipment deficiency information obtained from daily operations, failed and marginally passed tests and certifications, or noticed during operator maintenance, trouble calls, PT&I or preventive maintenance work shall be reported in accordance with Subsection C.7.o., *Reporting System and Equipment Deficiencies*.

(1) Plant Operations Logs. The Contractor shall maintain daily Central Steam Plant operating logs that record data such as equipment instrument readings and operating parameters, laboratory tests and results, plant and system maintenance performed, special operator tasks assigned, emergency conditions, all treatment chemicals used amount of propane used, and fuel tank soundings. The Contractor shall keep all operation, maintenance, and repair records orderly, up-to-date, readily accessible, and simply referenced in such a manner as to be quickly accessed, preferably on the CMMS, by all authorized Government officials at any time. The Contractor personnel shall be intimately familiar with the normal operating range of the equipment such that when taking readings of condition (temperature, speed, pressure, etc.) the Contractor can recognize anomalies and take corrective action. The Contractor shall turn the records (hardcopy and electronic) over to the Contracting Officer at the time of expiration or termination of the contract.

(2) Configuration Documentation Support. The Contractor shall follow current configuration controlled operations procedures and checklists. The Contractor shall initiate Change Notification Sheets when required to update, prepare and maintain accurate procedures, checklists, and as-built drawings when systems are deleted, added or modified in accordance with Subsection C.7.j., *As-built Drawings*.

(3) The Contractor shall collect the steam data listed below daily and submitted by the 5th of the following month to the CO in Excel format; Steam ejector usage by facility; Fuel consumed to produce steam; Gallows of Water softened; Salt utilized; Outside high and low daily temperatures; Degree days; Average monthly efficiency; Boiler steaming hours by boiler; Steam generated by boiler; Total steam produced by Recoup; Steam supplied to LaRC by Recoup; Total steam consumed by LaRC east area.

d. Operation Procedures Plan. The Contractor shall develop an Operations Procedures Plan for operating and performing work on steam, heat and service air generating equipment and distribution systems at LaRC. The objective is to perform steam, heat and service air related work in accordance with written and bound procedures to ensure that LaRC is provided safe, reliable, and efficient operation of these systems without preventable interruption The Operations plan should address the contractor's approach to furnish a steady, fault-free steam, heat and service air supply during mission support periods and system or major component failure. The Plan shall be developed using the following guidelines: (1) existing LaRC operating procedures, (2) industry standards and national codes (National Fire Protection Association, NFPA, and American Society of Mechanical Engineers, ASME, etc.), (3) equipment and system manufacturer's instructions, and (4) procedures outlined in the *LaRC Safety Manual*. The Plan shall address:

(1) Normal operating ranges (i.e., temperature, speed, pressure, etc.) of the steam, heat and service air generation equipment that must be met.

(2) The systems' operating instructions including a detailed description in correct sequence of the observations and adjustments to be made, the minimum frequency of the observations and adjustments, and who shall perform them.

(3) Procedures used for calculating boiler efficiency standards, determining actual efficiency, and for reporting the results.

(4) Procedures for interfacing with 1288 to insure maximum operational efficiency of the steam system is maintained, fuel consumption is minimized and the system is not over pressurized or wasting steam.

(5) Boiler water sampling, testing and treatment plan and procedures.

(6) Boiler overhaul plan and procedures

(7) Systems inspection and certification plan and procedures, as applicable.

(8) Emergency procedures for steam production and/or distribution disruptions.

(9) Safety and accident response and reporting procedures.

A draft initial plan shall be submitted to the Contracting Officer for approval within 90 days of the contract start date, and the final plan shall be submitted for approval within 45 days after the Contractor receives the Government's response to the initial plan, unless otherwise noted. The initial Plan should incorporate existing LaRC documentation, procedures, and standards pertinent to this Subsection. The Contractor shall review the Plan at least quarterly, make updates, and resubmit the updated Plan (or a written memorandum validating that the existing Plan is still accurate in all respects) to the Contracting Officer for approval by the third work day of the start of each quarter. Deviation from the approved standard operating procedures is acceptable only with the approval of the Contracting Officer.

e. System Description.

(1) Steam and Service Air Generation. The primary purpose of this function is the provision of reliable and efficiently produced steam, heat, hot water and service air. These products are generated through the operation of the Central Steam Generation Plant, Building 1215; the operation of three (3) - 350 horsepower boilers at buildings 647 and 646; the operation of 12 individual heating units using propane, natural gas and oil; the operation of two (2) steam to water heat exchangers in buildings 1203 and 1154; the operation of three (3) air compressors in Building 1215 (One 2,166 cfm and one 1,500 cfm air compressor, with one running continuously, supply the 110-psi air, and one 1,000 cfm air compressor supplies the 350-psi air.) for the production of service air. The Steam Generation Plant is manned on a 24-hour basis and serves as the coordinating center for activities beyond regular working hours through the Duty Office. Steam is used for building heat, domestic hot water, air condition absorption units, re-heat, JT heaters, steam ejectors, heat exchangers, and research facilities projects. Production is approximately 124,000,000 pounds of steam per year. The Refuse Steam Generating Facility (Building 1288 RECOUP) furnishes approximately 378,000,000 pounds of steam per year. RECOUP is Government owned (NASA/LAFB) and operated and maintained by the City of Hampton, Va. The Steam Generating Plant Building 1215 has a total connected steam capacity of 390,000 pounds per hour using natural gas as fuel and 340,000 pounds per hour using #2 fuel oil. The fuel storage capacity for #2 fuel is 250,000 gallons in five underground storage tanks. The total capacity of the individual heating units is 10,170,000 BTU per hour using #2 fuel oil and 4,188,000 BTU per hour using propane and

natural gas (See Attachments J-C1-24B and J-C13-24B for a description and drawings of the natural gas distribution system.).

(2) Steam and Service Air Distribution. Attachments J-C13-24A and J-C13-31 list the drawings associated with the steam and air distribution systems, respectively. Underground walk-through tunnels are used to convey the steam and service air from the generating plant. They total 11,841 linear feet of walk-through tunnels: also there are 4,925 linear feet of shallow trenches. There are 50 steam reducing stations, approximately 140 steam trap assemblies, 28 condensate tanks with tandem pump units, and 28 sump pump stations with one (1) electric and one (1) air driven pump at each station. The domestic hot water is supplied by two (2) instantaneous hot water heaters and circulated by two (2) centrifugal pumps, with one (1) running continuously.

f. Parts and Materials. The Contractor shall maintain a stock of spare parts in accordance with Subsection C.5., *Government Furnished Property and Services*, and C.6., *Contractor Furnished Items*. Experience has shown that selected items of long lead time parts and materials must be stocked to ensure repair of critical equipment in the event of failure. A list of these critical reserve items and minimal stocking levels is contained in Attachment J-C4-5.

g. Steam Plant (Building 1215) Operation, Maintenance, and Repair.

(1) Steam Plant Requirements. The Contractor shall be responsible for the effective and efficient operation, maintenance, and repair of the central steam, service air, natural gas, and domestic water systems 24 hours per day, 7 days per week, including holidays. The domestic water booster pumps shall be available to meet 100% of the system design capacity at all times. The steam system includes boilers, the physical plant, and related equipment including fuel oil storage and handling, natural gas distribution, water treatment equipment, associated pumps, components, controls, and the steam distribution system including steam lines, condensate return lines, and related equipment as identified in the Attachments J-C1-22A-G and J-C1-24. Work to be performed by the Contractor includes, but is not limited to:

(a) Operation and monitoring of boilers, air compressors, air dryers, hot water systems, domestic water booster pumps, water softeners, emergency generators, and auxiliary equipment.

(b) Monitoring, maintenance, repair and overhaul of all hot water and steam reducing valves, control valves, relief valves, pressure reducing valves, pumps, steam turbines, air compressors, air dryers, piping regulators, high pressure switches, transmitters, hydraulic pumps, and forced draft and flue gas recirculation fans in the Central Steam Plant (Building 1215) and utility tunnels.

(c) Weekly checks of sump pumps, telephones and alarms in the utility tunnels and shallow trenches.

(d) Daily checks of remote boilers (Buildings 646 and 647), furnaces and heat exchangers during the heating season.

(e) Preventive maintenance to the equipment and systems listed in Attachment J-C1-22A-H in accordance with the frequencies and job plans identified in Attachment J-C9.

(f) Installation, modification and repair of piping systems and insulation in the Central Steam Plant (Building 1215) and utility tunnels. Periodic maintenance shall be performed on heat exchangers, steam traps, backflow devices, expansion devices, and/or vibration eliminators, hangers, brackets, filters, strainers, and reducing stations.

(g) Purchase, installation and operation of various units of auxiliary equipment such as distillers, deionizers, water softeners and pumps.

(h) Testing and maintenance of all boiler, return condensate and cooling tower water for proper chemistry.

(i) Maintenance of the spare parts inventory for critical systems.

(j) Maintenance of data recording equipment for all machinery and systems.

(k) Painting and preservation of building equipment and systems. Surfaces to be coated under this subsection include interior steel structures, piping, boilers and other mechanical equipment. See also Subsection C.17, *Corrosion Control and Coating Services.*

(l) Hydrostatic testing of all piping and system components prior to installation into systems above 125 psig, including research-metering devices, controls, gages, and temperature/pressure readout devices. See also Subsection C.19., *Calibration, Testing and Component Verification.*

(m) Boiler overhauls and recertification support of all boilers and pressure vessels listed in Attachment J-C1-22A-G. See also Subsection C.21, *Buildings and Structures Maintenance and Repair.*

(n) Monitoring fuel tank levels and maintaining at least a 90% of capacity fuel supply for Buildings 1215 and 647, remote boilers and furnaces.

(o) Reviewing drawings, securing and venting systems, and red tagging systems.

(p) Monitoring all chemical usage, maintenance of MSDSs, and reporting chemical usage and other data quarterly to the Contracting Officer.

(q) Operation of fuel transport equipment to refuel all generators, diesel pumps, and the NASA LaRC boat when the boat is stationed at LaRC.

(r) Maintenance of building and utility tunnel cleanliness.

(s) Handling, removing, working with, and/or packaging for disposal, hazardous materials.

(2) Plant Operation. The operation of the central heating plant (Building 1215) includes the start-up and shutdown of heating equipment, operator inspection, and the efficient and economical production of steam to assure its availability to the Government at the lowest possible cost. The LaRC heating season spans from approximately October 15 to April 15 annually.

(a) Steam Generation. The Contractor shall operate, maintain, and repair all LaRC equipment including, but not limited to, power boilers, electrical and mechanical controls, gauges, thermometers, flowmeters, pumps, sample coolers, dampers, stacks, chemical treatment, fans, valves, piping, piping supports and hangars, regulators, relief and safety valves, traps, radiators, coils, thermostats, monitoring systems, heaters, and insulation. Equipment shall be in operation continually, 24 hours a day, 365 days per year, at designated capacities and efficiencies, to meet year round domestic and industrial hot water and seasonal domestic heating demand requirements and to ensure system reliability.

(b) Steam Pressure. The Contractor shall maintain the steam pressure at the required pressure (maximum 350 psig) and the maximum temperature of 436 degrees F exiting the Central steam plant, Building 1215, for distribution. The pressure of condensate is 15 psig and 30 psig.

(c) Other Utility Operations.

1 Domestic Water. The Contractor shall operate, monitor, and maintain the domestic water booster pumps located in Building 1215 to ensure that the system is capable of operating at 100% of design capacity at all times (See also Subsection C.29., *Potable Water Distribution System Maintenance and Repair.*) The Contractor shall submit monthly, to the CO by the 5th of the following month, the water usage for LaRC in Excel format.

2 Low-pressure Air. The Contractor shall operate, monitor and maintain low pressure air compressors (two (2) at 100 psig and one (1) at 350 psig) located in Building 1215. The Contractor shall submit monthly, by the 5th of the following month, the total air produced by each system daily to the CO in Excel format.

3 Natural Gas. The Contractor shall monitor, maintain and repair the natural gas distribution system, as described in Attachments J-C1-24B and J-C13-24B. Natural gas is used to fire the boilers in the steam plant, heat furnaces in the foundry, support research operations, and provide building heat. The Contractor shall submit monthly by the 5th of the following month, the amount of natural gas usage and cost by facility to the CO in Excel format.

(d) Operator Maintenance. The Contractor shall perform operator maintenance as a collateral duty on facility equipment within facilities where operation services are provided. Operator maintenance includes individual maintenance, inspection, troubleshooting, or repair tasks up to 16 hours or $2,000 total material, labor, and equipment costs (the same as TC scope). Repairs or maintenance that exceed those limitations, and which are not covered by the Preventive Maintenance program furnished in Attachment J-C9, will be considered IQ work. Operator maintenance is firm fixed price recurring work, and shall not be included in the Trouble Call quantity or documentation. However, a log shall be kept in the CMMS of all operator maintenance performed for the Contracting Officer's review. The Contractor shall follow approved maintenance procedures and associated checklists in the performance of operator maintenance work. In addition to performing operator maintenance on on-line equipment, the Contractor shall periodically operate and inspect idle equipment and clean, preserve, lubricate, and adjust personal property equipment listed in Attachment J-C1-22A-G.

(3) Plant Maintenance and Repair. The maintenance of the central boiler plant shall include steam heating sources; fuel storage and handling, feedwater, condensing, flue gas, and air system equipment; miscellaneous pumps and plant instrumentation; electrical equipment and components; as well as associated appurtenances necessary to generate and deliver steam to the distribution system external to the plant. When equipment or systems are required to be secured or deenergized for work to be performed, safety clearance shall be provided by the Contractor. Equipment and its respective system, if applicable, shall be available for operations not be less than 90 percent of the time during its operational season. During boiler safety inspections and/or certifications the Contractor shall provide a qualified operator for support. Plant maintenance shall be performed in accordance with the approved operating procedures as defined previously in this subsection and as required by ASME I and IV, American National Standards Institute (ANSI)-B31.1 of 1989 and National Board of Boiler Inspectors of 1989.

(4) Operational Emergencies. Operational emergencies such as ruptured mains, loss of boilers, etc., that reduce boiler pressure below 80 percent of normal operating pressure for a period extending beyond 30 minutes or which result in a change in the plant's reliability or capacity shall be reported within thirty (30) minutes of the occurrence to the Contracting Officer. The Contractor shall identify the probable cause for the reduction and the estimated time to restore full steam capacity. If full capability cannot be restored within five (5) hours, the Contractor shall install and operate emergency steam generation equipment with a capacity of not less than 350 psig and 436 degrees F. Historically, emergency equipment has not had to be employed over the past three years.

(5) Water Testing and Treatment. At least once during each day that the plant is in operation the Contractor shall collect feedwater, boiler water, and condensate samples from each operating boiler, cooling tower and closed loop system for testing. The Contractor shall perform or have performed the necessary tests to meet applicable manufacturer requirements or local requirements on hardness, phosphate, sulfite, causticity (alkalinity as OH), pH, conductivity, and total dissolved solids in PPM. Test results shall be made available on the CMMS to the Contracting Officer within two working days of taking the samples, and a monthly water analysis report shall be forwarded to the Contracting Officer by the fifth calendar day of each month for the previous month. The Contractor shall provide all water treatment chemicals required for plant operations. Attachment J-C18-24 lists historical data of the chemical consumption for LaRC boilers. See Subsection C.24.k., *Annual Chemical Evaluation.* Boiler water shall be maintained within the following limits:

Phosphate:	20 - 40 PPM
Conductivity:	2500 - 3000 mmhos
Sulfite:	20 – 50 PPM
pH:	8.2 to 8.5
Hardness:	0-1 PPM
Causticity (alkalinity as OH):	200 – 600 PPM
Total Dissolved Solids:	2000-4000 PPM.

The Contracting Officer must approve changes in the approved water treatment plan discussed in Subsection C.24.d., *Operation Procedures Plan.* At no additional cost to the Government, the Contracting Officer has the option of requiring sampling and testing once per shift, specifying the time(s) the samples are taken, observing the sampling extraction, and directing that the samples be analyzed by an independent laboratory.

(6) Operation Efficiency Standards. The Contractor shall be responsible for meeting the present operating standard of the heating plant. This shall be based on the present efficiency of the boilers. Boiler efficiency shall be calculated by the ASME input/output method. For boilers not equipped with instrumentation that permits the determination of thermal efficiency by the input/output method, exit flue gas temperatures shall be used as an indicator of the boiler efficiency. Each monthly average 50 degree Fahrenheit increment increase in exit gas temperature above the base temperature shall be equated to a 1 percent decrease in boiler efficiency for the month. The procedure for determining the efficiency used in the calculation shall be consistent throughout the term of the contract. The minimum acceptable boiler efficiency shall be 90% or the maximum exit gas temperature shall be 700 degrees Fahrenheit. These standards are subject to revision based on change in future operational conditions of the boiler plant. For example, improvements in the boiler plant that are

accomplished at Government expense may require an increase in minimum acceptable efficiency.

(7) Boiler Performance Report. A boiler performance report shall be prepared on the CMMS for each operating boiler on a weekly basis. A copy shall be provided for review by the Contracting Officer as required. This complete, updated and final boiler performance report is due on the CMMS not later than 4:00 PM each Wednesday for the previous week (Sunday through Saturday) and shall include:

(a) A plot of boiler combustion efficiency versus boiler load.

(b) A plot of the temperature difference between the boiler water and exit gas temperature versus load for steam boilers.

(c) Plots of combustion efficiency and temperature difference versus load should be reported for the full range of operating loads each week.

(d) Combustion efficiency. This can be obtained by direct measurement using a combustion analyzer. Combustion efficiency can also be obtained by measuring boiler intake air temperature, exhaust gas temperature, and CO2 or O2 charts for the particular fuel being fired. If measured combustion efficiencies are more than three percent (3%) below the optimum combustion efficiencies, corrective action is required.

(e) Water and flue gas temperature difference as an indicator of the cleanliness of the boiler watersides and firesides. The Contractor shall prepare a plot of this temperature difference after the boiler watersides and firesides have been cleaned. If the temperature difference rises by more than 80 degrees at several load points, deposits have probably formed and should be removed. As a check, combustion efficiency should drop as the temperature difference rises.

h. Boiler Overhaul.

(1) Maintenance work on boilers and direct support auxiliary equipment that cannot be performed while the boiler is in operation shall be accomplished as an overhaul item. Each boiler shall be overhauled annually during the facility's annual shutdown (See Attachment J-C9-12A). The overhaul shall be performed in accordance with the PM program requirements, manufacturer's recommendations, and Section VII of the ASME Boiler and Pressure Vessel Code. All required overhaul work that is not part of the PM program requirements is non-recurring work, and shall be accomplished in accordance with Subsection C.13., *General Requirements and Procedures for Non-recurring (Indefinite Quantity) Work.* Boiler Overhaul work shall be fully warranted against defects due to material or workmanship for a period of 180 days.

(2) The Contractor shall prepare a boiler overhaul schedule indicating the time and duration of the shutdown, and shall be submitted as part of the Operation Procedures Plan (Subsection C.24.d.) to the Contracting Officer for approval. Within 15 days after completion of each overhaul, the Contractor shall prepare and submit a detailed report to the Contracting Officer of the findings and work accomplished. Work affecting the structural or pressure integrity of the boiler shall be performed only when directed by the Contracting Officer and in accordance with written procedures approved by an ASME-certified boiler inspector. The certified boiler inspector prior to returning the affected unit to operation shall inspect completed work.

(3) In conjunction with the overhaul, the Contractor shall schedule the work with the ASME-certified Boiler Inspector to perform such inspections and witness tests that are required while

the unit is open and before it is returned to service. The PM program in Attachment J-C9 includes the estimated time for inspections and the contractor certification process support.

i. Certification. The Government will provide an ASME-certified boiler inspector for Central Steam Plant boiler and pressure vessel certifications. The Contractor shall not operate any power boiler that does not have a valid inspection certificate. The Contracting Officer shall be notified if unsafe conditions are found, following repair of a pressure part, or after any major modification to boilers, control equipment or auxiliaries. The affected equipment shall not be placed back in operation until written authorization is received from a certified boiler inspector.

(1) During the boiler and pressure vessel recertification process, the Contractor shall clean and prepare the steam system boilers and unfired pressure vessels in the system for certification. The Contractor shall operate the boilers during the certification as approved by the inspector. Hydrostatic pressure testing for certification shall be performed by the Contractor.

(2) All other (i.e., non-Central Steam Plant) boilers and unfired pressure vessels shall be inspected and certified by a Contractor-provided ASME certified inspector in accordance with the ASME Boiler and Pressure Vessel Code. Units for which certification has been withheld shall not be operated without the written concurrence of the Contracting Officer. Boiler inspection safety certificates shall be void immediately on the discovery of a safety deficiency regardless of the expiration date on the certificate. The certificate will again be valid only after the deficiency has been corrected by the Contractor and concurrence of the certified inspector is obtained.

(3) The preparation of boilers for temporary or extended standby shall be performed in accordance with the *LaRC Facility Configuration Management (CM) Program Effort Code 98.*

j. Remote Operations. The Contractor shall maintain completely all oil and gas-fired, remote heating units. All heating units shall be cleaned and tuned for proper operation at the end of the heating season or as needed. This shall include, but not be limited to, maintenance of burners, pumps, switches, stacks, fire box chambers, the outer casings, fire tubes, line strainers, and nozzles. Refer to Subsection C.21., *Buildings and Structures Maintenance and Repair.*

k. Annual Chemical Evaluation. In conjunction with the annual boiler overhaul and certification a chemical evaluation and analysis of the boiler water shall be performed to determine if the proper mix of the most appropriate chemicals has been applied throughout the year and to modify future applications, as necessary. The Contractor is responsible for coordinating and having this analysis performed and for any associated costs. In the past, the supplier of the chemicals has performed this service as part of an annual Contractor-Chemical Supplier agreement at no additional cost to the Government or to the Contractor. Any subcontract for boiler water chemical services is subject to Contracting Officer approval.

l. Steam Distribution System. The Contractor shall monitor daily, maintain and repair the entire steam distribution and condensate return systems, including all aspects of the utility tunnels, identified in Attachments J-C1-22A-G , J-C1-21A-B and J-C13-24 and described in Attachment J-C1-24A to provide a continuous minimum pressure of 15 psig of steam at end points and to minimize condensate losses due to leakage. The steam distribution system originates at the Central Steam Plant (Building 1215) and extends throughout LaRC to and including the pressure-reducing valve (PRV) or the building shut off valve where there is no PRV. This system includes elevated and underground steel steam supply piping and condensate return piping, fittings, vaives, traps, insulation and lagging, aluminum jacketing, expansion joints, expansion loops, pipe hangars, anchors, conduit and manholes, structural supports and other related items. The utility tunnels and trenches for which the Contractor is responsible for monitoring and inspecting daily, maintaining and repairing as necessary consist of the following:

- Tunnel #1 - 3,222 ft.

- Tunnel #2 - 3,147 ft.
- Tunnel #3 - 843 ft.
- Tunnel #4 - 4,620 ft.
- 50 steam reducing stations
- 25 condensate return pump stations
- 21 sets of sump pumps (one eject and one air pump per set)
- Trench – Refuse Fired Steam Generating Facility, Building 1288:
  - 2,000 ft of 2-inch air line
  - 2,000 ft of 8-inch steam line
  - 1,300 ft of high pressure condensate line
  - 5 steam trap stations
  - 3 sump pumps
- Building 1154:
  - 1,200 ft of 4-inch steam line
  - 1,200 ft of low and high-pressure condensate line

m. Fuel Oil.

(1) The Government will furnish Number 2 fuel oil for boiler operation. The Contractor shall monitor fuel levels of all the fuel tanks listed in Attachment J-C1-24A (including remote sites) and maintain the fuel level in each one at no less than 90% of capacity, keep advised of the amount of Government funds available for fuel purchases, initiate fuel orders directly to the Government fuel supplier when required, receive fuel from tanker trucks at Building 1215 (unless otherwise arranged by the Contractor), transfer the fuel to and among storage tanks (including remote sites), and make all operational fuel transfers. The Contractor shall maintain on the CMMS an accurate record of the amount of fuel received in each delivery. Entries shall be made by the Contractor within 24 hours of each delivery and be easily accessible by the Contracting Officer. A summary report of the total fuel deliveries shall be submitted to the Contracting Officer electronically by the 5th day of each month for the previous month deliveries. Tank soundings shall be taken and recorded before and after each fuel delivery to verify the actual quantities received. The Contractor shall maintain all fuel oil handling equipment including storage tanks, pumps, fuel transport vehicles, piping, and heaters, and shall comply with all federal regulations pertaining to fuel operations. Historical data indicating the quantity of fuel oil used is listed in Attachment J-C8-24. The Contractor shall submit monthly, by the 5th of the following month, the amount of #2 fuel oil and cost, delivered, by Building/Site to the CO in Excel format.

(2) Fuel Deliveries. The Contractor shall deliver (or have delivered) fuel oil to outlying areas, including emergency generators and remote heating units, listed in Attachment J-C1-24A. Some of these deliveries may be under emergency circumstances. These deliveries are part of the firm fixed price work.

n. Propane. The Contractor shall furnish propane required for boiler operations. Historical data indicating the quantity of propane used is listed in Attachment J-C8-24. The Contractor shall submit monthly, by the 5th of the following month, the amount and cost of propane usage to the CO in excel format.

o. Natural Gas. The Government will furnish Natural Gas used for boiler operation. The Contractor shall monitor Natural Gas use in accordance with Subsection C.24.g.(2)(c)3.

p. Housekeeping. See Subsection C.7.t., *Housekeeping*.

q. Waste Oil and Hazardous Waste. See Subsection C.7.r, *Hazardous Materials*.

END OF SUBSECTION C.24

C.25. FIRE PROTECTION AND LIFE SAFETY SYSTEM MAINTENANCE AND REPAIR

a. General Requirements. The Contractor shall provide maintenance, repair and programming services for the fire protection and life safety systems at NASA LaRC (see J-C1) in accordance with the requirements specified herein. These systems and equipment to be serviced under this contract subsection include: fire and smoke detection/alarm and alarm monitoring systems; automatic sprinkler (wet, dry pipe, pre-action, and deluge system) and standpipe systems, including fire water distribution systems, pumps and fire hydrants; deluge systems; gaseous extinguishing systems; dry and wet chemical extinguishing systems; fire and smoke containment systems; and oxygen depletion systems. All work in this subsection shall comply with the most recent edition of the NFPA codes, Underwriter's Laboratories Listings and Factory Mutual Approvals, and other reference specifications and standards listed in Attachment J-H1, unless otherwise specified in the *LaRC Fire Protection Handbook* or by the Contracting Officer. The Contractor shall report in writing within 24 hours to the Contracting Officer the reason for any faults or false alarms in the facility fire protection system.

b. Scope of Work. Work includes:

(1) Trouble Call Work. Trouble calls (included in the firm fixed price portion of the contract) shall be received, managed and worked in accordance with Subsection C.11, *General Requirements and Procedures for Trouble Call Work,* and this subsection.

(2) Recurring Work. Recurring work (included in the firm fixed price portion of the contract) in this subsection includes preventive maintenance (including system testing and inspection) and preparation and maintenance of the Operation Procedures Plan. This recurring work shall be accomplished in accordance with Subsection C.12., *General Requirements and Procedures for Recurring Work,* and this subsection.

(3) Non-recurring Work. Non-recurring work shall be accomplished in accordance with Subsection C.13., *General Requirements and Procedures for Non-recurring (Indefinite Quantity) Work,* and this subsection.

c. Documentation. All work shall be documented in accordance with the requirements of Subsection C.11 for Trouble Calls, C.12 for Recurring Work, and C.13 for Indefinite Quantity Work. The Contractor shall retain and maintain in the CMMS throughout the term of the contract all documentation from system inspections, tests, and maintenance performed. Additional reports required, their formats, and their reporting frequencies are identified in the *LaRC Fire Protection Handbook* and are included in Attachment J-C6-25. System and equipment deficiency information obtained from daily operations, failed and marginally passed tests and certifications, or noticed during maintenance or trouble call work shall be reported in accordance with Subsection C.7.o., *Reporting System and Equipment Deficiencies.* The Contractor shall initiate Change Notification Sheets when required to update, prepare and maintain accurate procedures, checklists, and as-built drawings when systems are deleted, added or modified in accordance with Subsection C.7.j., *As-built Drawings.*

d. Operation Procedures Plan. The Contractor shall develop an Operations Procedures Plan for work on the fire protection and life safety systems at LaRC. The objective is to perform fire protection and life safety system related work in accordance with written and bound procedures to ensure that these systems operate safely, reliably, and efficiently and without preventable interruption. The Operations plan should address the contractor's approach to furnish steady, fault-free fire and emergency alarm and fire suppression system protection at all affected facilities at all times. The Plan shall be developed using the following guidelines: (1) applicable LaRC Standard Operating Procedures (SOPs), (2) manufacturer's instructions, (3) industry standards and national codes (National Fire Protection Association, NFPA, and American Society of Mechanical Engineers, ASME, Sections VI and VII of 1989, etc.) and (4) procedures outlined in

the *LaRC Safety Manual.* The Plan shall address (1) the systems' operating procedures including the frequency and description in correct sequence of the observations and adjustments to be made; (2) the systems testing and inspection plan and notification procedures; (3) safety and accident response and reporting procedures; and (4) a prequalified list of subcontractors to perform fire and safety alarm and fire suppression system work on short notice. A draft initial plan shall be submitted to the Contracting Officer for approval within 90 days of the contract start date, and the final plan shall be submitted for approval within 45 days after the Contractor receives the Government's response to the initial plan, unless otherwise noted. The initial Plan should incorporate existing LaRC documentation, procedures, and standards pertinent to this Subsection. The Contractor shall review the Plan at least quarterly, make updates, and resubmit the updated Plan (or a written memorandum validating that the existing Plan is still accurate in all respects) to the Contracting Officer for approval by the third work day of the start of each quarter. Deviation from the approved standard operating procedures is acceptable only with the approval of the Contracting Officer.

e. Trouble Call Emergency Response for Fire Protection Systems. All emergency trouble calls and system outages shall be responded to at the site within 15 minutes during normal working hours. Such calls during off duty hours, weekends, and holidays shall be responded to within 15 minutes by phone or radio, and if necessary, be at the Center within 2 hours of notification. Refer to Section C.11., *General Requirements and Procedures for Trouble Call Work.*

f. Requirements for Fire Alarm and Air Sample Detection Systems. The Contractor shall inspect, test, maintain, and repair the fixed fire alarm and air sampling detection systems, emergency sirens, and equipment listed in Attachments J-C1-22A-G and J-C1 -25A so that they are continuously maintained in complete, reliable, and safe operating condition as originally designed and intended. NASA LaRC has fire alarm systems and air sampling detection systems of several different manufacturers in its facilities, with the primary ones being Notifier, Pyrotronics, and Edwards. Also included is a Notifier central fire alarm system. These system and equipment requirements are included in the firm fixed-price portion of the contract except for repairs that exceed trouble call limits and are included in the non recurring work portion of the contract. The Contractor shall acquire manufacturer's catalog cuts as needed to troubleshoot or repair fire alarm systems if they are not currently available in the Government's files. This requirement shall be performed in accordance with Section C.13, Indefinite Quantity work unless within the limits of a Trouble Call. Electrical connections required to operate alarm and siren systems shall be maintained back to the source of electricity, up to but not including circuit breakers and disconnects. Wires (other than telephone lines) connecting remote station alarm and siren systems shall be maintained throughout the fire alarm system. Telephone lines in remote station alarm systems shall be maintained back to the interface with the main telephone lines. Work on the air sampling detection systems includes, but is not limited to changing filters, pumps, and cleaning air inlets. PMs shall be scheduled and conducted as specified in the Subsection C.12, *General Requirements and Procedures for Recurring Work,* Attachment J-C9, current National Fire Protection Codes, and the recommendations of the equipment manufacturer unless otherwise stipulated in the *LaRC Fire Protection Handbook.*

(1) Inspections. All equipment shall be visually inspected monthly to ensure that the systems have not been damaged, that the batteries are clean and free of corrosion and that any detector, heat and/or smoke, is clean and free of any dust, lint, paint, or substance that may effect its proper operation. The fire alarm control panel connections and wiring terminals shall be checked to ensure that all points are correctly installed and that none are loose, stripped, or frayed.

(2) Modifications. The Fire Alarm Systems are under Configuration Management (CM) and all modifications must follow CM procedures. All modifications shall be approved first by the Contracting Officer before the job starts and/or tested and accepted by the Contracting Officer and shall be inspected and tested by the Contractor to ensure compliance with the appropriate NFPA standards as well as compatibility with the existing fire alarm equipment.

(3) Configuration Document Support. The Contractor shall prepare and maintain accurate as-built drawings and facility resume information when systems are deleted, added or modified and submitted to the Contracting Officer in accordance with Subsection C.7.j., *As-built Drawings.*

(4) Testing. The Contractor shall notify the Contracting Officer before any tests are conducted. This requirement is also for evacuation drills. As a minimum testing shall comply with the testing criteria and frequencies indicated in the *LaRC Fire Protection Manual*, LAPG 1710.11.

(5) Computer Updates. In addition to performing inspection, testing and maintenance of the Notifier central fire alarm system (UNINET), the Contractor shall keep up-to-date the system's computer based graphical displays. This includes changing the facilities' graphical layout as facilities, devices and systems change. Keeping the graphics up-to-date is included in the indefinite quantity portion of the contract (Subsection C.13.)

(6) Test Equipment. The Contractor shall provide all equipment, materials, and instruments required for the thorough testing of the systems. These items shall include but not be limited to, the following:

(a) Ionization type smoke detector test gas;
(b) Photoelectric type smoke detector smoldering fire source;
(c) Ionization detector sensitivity and alarm threshold device;
(d) Heat producing device suitable for testing all types of thermal detectors;
(e) Electrical test equipment including multi-meters;
(f) Explosion-proof equipment such as lights and test equipment for work in hazardous areas;
(g) Testing UV/IR detectors.

(7) Materials and Equipment. Materials and equipment furnished shall be of the same manufacturer as the existing equipment and shall be Underwriters Laboratory (UL) listed or Factory Mutual (FM) approved and shall comply with the specifications as applicable for the specific fire alarm system service. All circuits shall contain a separate grounding conductor with green colored insulation.

(8) Reporting System. Where scheduled interruption of the LaRC fire alarm loop is required to perform the required maintenance, a written request to the Contracting Officer shall be submitted scheduling the interruption five (5) days prior to the anticipated date.

g. Requirements for Automatic Sprinkler and Standpipe Systems. The Contractor shall inspect, test, maintain, and repair fire sprinkler systems listed in Attachments J-C1-22A-G and J-C1 - 25B in accordance with the latest NFPA codes and standards so that they are continuously maintained in complete, reliable, and safe operating condition as originally designed and intended. These system and equipment requirements are recurring work included in the firm fixed-price portion of the contract except for repairs that exceed trouble call limits which are included in the non recurring work portion of the contract. The Contractor shall acquire manufacturer's catalog cuts as needed to troubleshoot or repair automatic sprinkler and standpipe systems if they are not currently available in the Government's files. This requirement shall be performed in accordance with Section C.13, Indefinite Quantity work unless within the limits of a Trouble Call. PMs shall be scheduled and conducted as specified in the General Requirements and Procedures For Recurring Work, Subsection C.12, and the recommendations of the equipment manufacturer.

(1) Automatic Sprinkler and Standpipe Systems. Automatic sprinkler and standpipe systems shall be maintained back to the main water distribution system, including backflow preventers, post indicator valves, check valves, and waterflow meters. Spare sprinkler heads are currently on hand and available for the Contractor's use for each sprinkler system. The

Contractor shall provide a replacement unit within 14 calendar days after the use of any sprinkler head, and shall check and report missing heads and wrenches as part of each PM .

(a) Inspections. The Contractor shall develop and maintain a log of the inspections and tests performed. This log shall indicate at a minimum: the date tested; building number; name of the facility; type of system or area covered by the system tested; and the type of devices actuated. This log shall also indicate any modifications that have been performed since the last inspection and the maintenance and/or repairs required, if any, to return the system(s) to a working condition. The Contractor shall conduct inspections according to NFPA code requirements, recommendations, and specifications. The Contractor shall visually inspect the existing installation to ensure that the systems have not been damaged, that all valves are in working order, the sprinklers are free of dust, lint, paint, etc., which may affect its proper operation. Any deficiencies noted, including incorrect arrangement of the sprinkler heads or inadequate coverage shall be reported to the Contracting Officer.

(b) Modifications. The Sprinkler Systems are under Configuration Management (CM) and all modifications must follow CM procedures. The Contractor shall inspect all modifications to ensure system compliance with NFPA codes, standards, and recommended guides and practices. The Contractor shall prepare and maintain accurate as-built drawings and facility resume information when systems are deleted, added or modified and submitted to the Contracting Officer in accordance with Subsection C.7.j., *As-built Drawings.*

(c) Testing. The Contractor shall conduct testing according to the requirements and recommendations of NFPA codes and the fire equipment manufacturer's recommendations. The Contractor shall notify the Contracting Officer in writing five (5) days prior to testing. As a minimum, sprinkler system testing shall comply with the criteria and frequencies indicated in the *LaRC Fire Protection Manual*, LAPG 1710.11. The Contractor shall:

1 Operate *all* control valves, test valves, drain valves, etc., to ensure proper operation and that all valves reseat themselves properly. Check that rising stem valves do in fact operate their valves.

2 Check water pressure gauges on alarm check valves for holding (higher) system pressure above alarm valve.

3 Flush all system strainers, verify that all system water motor gongs operate, and system pressure switches and their related functions notify the station fire department.

4 Perform system drain tests by fully opening the 2-inch drain and note and record the pressure drop on the water supply gauge. When so equipped, check operation of the system alarm check valves by noting pressure gauge readings above and below the alarm check.

5 Inspect all system piping; check for missing or damaged hangars, bent piping, obstructed sprinkler heads and areas where sprinkler coverage is lacking.

6 Fire pumps shall be maintained up to and including the starting equipment. Tests and PMs shall be performed to ensure optimum performance.

(d) Test Equipment. The Contractor shall provide all equipment, materials, and instruments required for thorough testing of systems.

(e) Materials and Equipment. Materials and equipment furnished shall be of the same manufacturer as the existing equipment, shall be Underwriter's Laboratory (UL) listed and/or Factory Mutual Approved, and shall comply with the applicable specifications.

(f) Securing Water. Five (5) days prior to shutting off any fire protection valve the Contractor shall notify the Contracting Officer of the location of the valve and of the expected duration of the shut off. The Contracting Officer must approve the shut off of any system that will remain off for more than two (2) hours or during an overnight period. The Contractor must follow the "Impairment Policy" as outlined in the *LaRC Fire Protection Handbook.*

(2) Fire Hydrants. Fire hydrants shall be maintained back to and including the valves and laterals to the main water distribution system. The following summarizes the principal annual tests and PMs required:

(a) Flush and conduct a flow test of all fire hydrants above and below ground on other than dead-end fire mains. Flow rating information from past tests will be provided to the Contractor, if available. Water shall be discharged until clear and hydrants checked for proper drainage. Flow tests shall be coordinated with the Contracting Officer and test results shall be provided to the Contracting Officer upon completion.

(b) Check the general condition and take remedial action as necessary of all hydrants, including: the tightness of nozzles, particularly at the point where the nozzles enter the hydrant barrel; leaks in the top of the hydrant, past gaskets under caps, and defective gaskets; cracks in the barrel; tightness of the valve and seat; the operating nut; nozzle threads for damage; and the stem for sufficient lubrication.

(c) Additionally, the following items shall be ordered in accordance with Subsection C.13., *General Requirements and Procedures for Non-recurring (Indefinite Quantity) Work.* Unless noted otherwise in the WSR or in following clauses, all work must be complete within ten (10) days after WSR receipt:

1 Replacement. Fire hydrant replacement shall include removal of the existing hydrant and installation of a new hydrant meeting the requirements specified in the applicable specifications and NFPA 24 and 25, including all required fittings and connections to the water distribution system.

2 Rebuilding. Fire hydrant rebuilding shall include removal and replacement of all packing, gaskets, operating nuts, and nozzle threads. Upon completion the hydrant shall operate as designed.

3 Replace Post Indicator Valves. Post indicator valve replacement shall include removal of the existing valve and installation of a new valve meeting the requirements specified in the applicable specifications and NFPA 24 and 25, including all required fittings and connections to the water distribution system.

h. Requirements for Deluge Systems. The Contractor shall inspect, test, maintain and repair the deluge systems and equipment listed in Attachments J-C1-22A-G so that they are continuously maintained in complete, reliable, and safe operating condition as originally intended and designed. These system and equipment requirements are included in the firm fixed-price portion of the contract except for repairs that exceed trouble call limits and are included in the non recurring work portion of the contract. Deluge systems shall be maintained back to the main water distribution system, including backflow preventers, post indicator valves, check valves, and waterflow meters; and electrical connections back to the source of electricity, up to but not including circuit breakers and disconnects. Additionally, there are four (4) diesel fire pumps located in building 1244A. The Contractor shall inspect, test and maintain these units in

accordance with NFPA and *LaRC Fire Protection Handbook* criteria and the four pumps must be fully operational as intended and designed at all times. PMs shall be scheduled and conducted as specified in the *General Requirements and Procedures For Recurring Work* Subsection C.12, and PM procedures shall conform to the recommendations of the equipment manufacturer. Quality and workmanship shall conform to NFPA, the applicable specifications and other standards listed in Attachment J-H-1

(1) Inspections. The Contractor shall develop and maintain a log of the inspections and tests performed. This log shall indicate at a minimum: the date tested; building number; name of the facility; type of system or area covered by the system tested; and the type of devices actuated. This log shall also indicate any modifications that have been performed since the last inspection and the maintenance and/or repairs required, if any, to return the system(s) to a working condition. The Contractor shall conduct inspections according to NFPA code requirements, recommendations, and specifications. The Contractor shall visually inspect the existing installation to ensure that the systems have not been damaged, that all valves are in working order, and that the nozzles and sprinklers are free of dust, lint, paint, etc., which may affect its proper operation. Any deficiencies noted shall be reported to the Contracting Officer.

(2) Modifications. The Contractor shall inspect all modifications to ensure system compliance with NFPA codes. Any noncompliance shall be reported to the Contracting Officer.

(3) Testing. The Contractor shall conduct testing according to the requirements and recommendations of NFPA codes, local codes and requirements, and the fire equipment manufacturer's recommendations. The Contractor shall notify the Contracting Officer in writing five (5) days prior to testing.

i. Requirements for Gaseous Extinguishing Systems. The Contractor shall inspect, maintain, and repair the gaseous extinguishing systems and equipment listed in Attachments J-C1-22A-G and described in Attachment J-C1-25A-D so that they are continuously maintained in complete, reliable, and safe operating condition as originally designed and intended. These system and equipment requirements are included in the firm fixed-price portion of the contract except for repairs that exceed trouble call limits and are included in the non recurring work portion of the contract. Gaseous extinguishing systems shall be maintained up to and including tanks, cylinders and hoses. Electrical connections shall be maintained back to the source of electricity, up to but not including circuit breakers and disconnects. PMs shall be scheduled and conducted as specified in the *General Requirements And Procedures For Recurring Work* Subsection C.12, and PM procedures shall conform to the recommendations of the equipment manufacturer. Principal tests and PMs include checking and taking remedial action as necessary of: the liquid level in low-pressure CO_2 storage tanks; CO_2 and Halon nozzles and hand hose lines; devices and connections of low-pressure CO_2 systems for leakage; cylinders; tank alarm pressure switches and identification devices; and performing actuating and operating tests of CO_2 and Halon system cylinders. Test and inspection frequencies shall meet NFPA and LaRC Fire Protection Handbook requirements.

j. Requirements for Dry and Wet Chemical Extinguishing Systems. The Contractor shall inspect, maintain, and repair the dry and wet chemical extinguishing systems and equipment listed in Attachments J-C1-22A-G so that they are continuously maintained in a complete, reliable, and safe operating condition as originally designed and intended. These system and equipment requirements are included in the firm fixed-price portion of the contract except for repairs that exceed trouble call limits, which are included in the non recurring work portion of the contract. Wet and dry extinguishing systems shall be maintained up to and including cylinders, piping, hoses, detectors, and associated alarm systems. PMs shall be scheduled and conducted as specified in *the General Requirements and Procedures For Recurring Work* Subsection C.12, and PM procedures shall conform to the recommendations of the equipment manufacturer. *Note that systems using alternative gas agents such as FM200 and Inergen are not currently part of LaRC*

inventory; however, installation of these systems is anticipated in the future. Consequently, fire sprinkler technicians must be capable and certified by the manufacturer to work on such alternative gas agent systems by the time the systems are installed and functional. Principal tests and PMs include checking and taking remedial action as necessary on: nozzles and hand hose lines; physical damage to the system; dry chemical expellent gas cylinders; heat links; the condition of the agent; and conducting actuating and operating tests of systems and hydrostatic tests of cylinders and hoses that have evidence of corrosion, pitting, or other damage. Test and inspection frequencies shall meet NFPA and LaRC Fire Protection Handbook requirements.

k. Specific Requirements for Fire and Smoke Containment Systems. The Contractor shall ensure that fire doors and their respective safety hardware operate correctly and adequately as designed and intended. The Contractor shall inspect, test, maintain, and repair the stairwell pressurization and zoned smoke control systems and equipment listed in Attachments J-C1-22A-G and described in Attachment J-C1-25A-D so that they are continuously maintained in complete, reliable, and safe operating condition as originally designed and intended. These system and equipment requirements are included in the firm fixed-price portion of the contract except for repairs that exceed trouble call limits and are included in the non recurring work portion of the contract. Smoke control systems shall be maintained up to and including the electrical connections back to the source of electricity, but not including the circuit breakers and disconnects. PMs shall be scheduled and conducted as specified in the *General Requirements and Procedures For Recurring Work* Subsection C.12, and PM procedures shall conform to the recommendations of the equipment manufacturer. Principal tests and PMs required include checking and taking remedial action as necessary on: smoke control system fans, dampers, control devices, and their operating sequences. Test and inspection frequencies shall meet NFPA and LaRC Fire Protection Handbook requirements.

l. Requirements for Miscellaneous Life Safety Systems.

(1) Oxygen Depletion Systems. The Contractor shall operate, maintain, calibrate, periodically test, and troubleshoot false alarms for several oxygen depletion systems identified in Attachments J-C1-22A-G and described in Attachment J-C1-25A-D in accordance with procedures set forth in SOP-18A. Calibrations of the O_2 monitoring systems are mandated by the LaRC Metrology Office and shall be performed according to the PM schedule, Attachments J-C9, and shall be reported to the Metrology Office. These systems have components located throughout the facilities, including central, portable, and stand-alone sensors. This work is firm fixed price except for repairs that are beyond the scope of trouble calls, and includes, but is not limited to, changing detector heads and cleaning air inlets. Contractor personnel shall be trained to program, inspect, test, maintain, repair and modify these systems. All work on oxygen depletion systems shall meet NFPA, UL Listing and Factory Mutual Approvals, and manufacturer's guidelines for the respective systems.

(2) Emergency Lighting. See Paragraph C.21.g., Requirements for Electrical.

END OF SUBSECTION C.25

C.26. ELEVATOR MAINTENANCE AND REPAIR

a. General Requirements. The Contractor shall perform inspection, testing, certification, maintenance, repair, and component replacement required to maintain elevator and dumbwaiter equipment systems at NASA LaRC (see J-C1) in accordance with the manufacturer's original specifications. The Contractor shall perform load tests with test weights provided by the Government (See Subsection C.5, *Government Furnished Property and Services*). There are approximately 31 elevators, two (2) dumbwaiters, and seven (7) manlifts located at LaRC. This work may be performed during the affected facility's Annual Maintenance Shutdown. Refer to Subsection C.8., *Management*.

b. Scope of Work. Work includes:

(1) Trouble Call Work. Trouble calls (included in the firm fixed price portion of the contract) shall be received, managed and worked in accordance with Subsection C.11., *General Requirements and Procedures for Trouble Call Work*, and this subsection.

(2) Recurring Work. Recurring work (included in the firm fixed price portion of the contract) in this subsection includes preventive maintenance (including periodic inspection, testing, and certification) and the preparation and maintenance of the Operation Procedures Plan. This recurring work shall be accomplished in accordance with Subsection C.12, *General Requirements and Procedures for Recurring Work*, and this subsection.

(3) Non-recurring (Indefinite Quantity) Work. Non-recurring work shall be ordered using the fixed rates from Section B and shall be accomplished in accordance with Subsection C.13., *General Requirements and Procedures for Non-recurring (Indefinite Quantity) Work*.

c. Documentation. All work shall be documented in accordance with the requirements of Subsection C.11 for Trouble Calls, C.12 for Recurring Work, and C.13 for Indefinite Quantity Work. The Contractor shall retain and maintain in the CMMS throughout the term of the contract all documentation from system inspections, tests, and maintenance performed. Additional reports required, their formats, and their reporting frequencies are identified in Attachment J-C6-26. System and equipment deficiency information obtained from daily operations, failed and marginally passed tests and certifications, or noticed during maintenance or trouble call work shall be reported in accordance with Subsection C.7.o., *Reporting System and Equipment Deficiencies*.

d. Operation Procedures Plan. The Contractor shall develop an Operations Procedures Plan for work on the elevator, manlift and dumbwaiter systems at LaRC. The objective is to perform elevator work in accordance with written and bound procedures to ensure that LaRC elevators are safe, reliable, and efficient. The Plan shall be developed using the following guidelines: (1) manufacturer's instructions (2) the *LaRC Safety Manual*, and (3) industry standards and national codes (American Standards Institute, ANSI, National Fire Protection Association, NFPA, and American Society of Mechanical Engineers, ASME A17.1, etc.). The Plan shall address: (1) the systems' operating procedures including the frequency and description in correct sequence of observations and adjustments to be made; (2) systems testing, inspection and certification plan and procedures; (3) safety and accident response and reporting procedures, and (4) a prequalified list of subcontractors to provide elevator repair services on short notice. A draft initial plan shall be submitted to the Contracting Officer for approval within 90 days of the contract start date, and the final plan shall be submitted for approval within 45 days after the Contractor receives the Government's response to the initial plan, unless otherwise noted. The initial Plan should incorporate existing LaRC documentation, procedures, and standards pertinent to this Subsection. The Contractor shall review the Plan at least quarterly, make updates, and resubmit the updated Plan (or a written memorandum validating that the existing Plan is still accurate in all respects) to the Contracting Officer for approval by the third work day of the start of each quarter.

Deviation from the approved standard operating procedures is acceptable only with the approval of the Contracting Officer.

e. Requirements for Elevator Work. In addition to Subsection C.12., *General Requirements and Procedures for Recurring Work*, the following general performance and workmanship standards for elevator system work are included.

(1) Scope. PM work includes periodic Contractor operation, inspection, checks, adjustments, and maintenance of elevator systems as necessary to ensure that each system complies with applicable NASA LaRC, local, ASME, and manufacturers' standards of safety, reliability, and satisfactory operating condition. PM work shall be performed in accordance with the appropriate PM frequency and task code in Attachments J-C-9. The intent of PM is to provide routine maintenance services that permit the early detection and correction of items that, if deficient or defective, would: (a) interfere with the normal effective operation of the elevator, dumbwaiter and manlift systems; (b) endanger life and/or property; or (c) involve high cost or long lead time for repair. PM work shall include, but not necessarily be limited to: comprehensive operational inspection and adjustments to ensure the satisfactory functioning of machinery and normal and emergency operating controls, car speeds, leveling devices, car and hoistway doors, safety edge mechanisms, safety systems and mechanisms, and emergency phones; detecting and correcting the causes of unusual noises or vibrations; manufacturer's recommended machinery lubrication; lubricating and maintaining within allowable limits of wear all cables; adjustments to bring system operation within the manufacturer's specifications; repairs, including defective part and component replacements; equipment space housekeeping; equipment cleaning; changing burned-out lights and indicator lamps; and other services as required to maintain all systems at a safe and acceptable operating condition. Key replacement parts that are normal inspection or code required items shall be labeled to indicate the part replacement date. Maintenance shall include servicing, repairing or replacing all elevator, dumbwaiter and manlift parts including, but not limited to, the following:

(a) Generators, brushes, controllers, selectors, brake magnet coils, brake motors, windings, motors, coils for operating motor circuits, contacts, magnet frames, car door operating devices, pushbuttons, annunciator indicators, all signals, machines, brake shoes, gears, thrusts, bearings, leveling devices, cams, car and hoistway door hangers, tracks, safety and emergency stops, and all other accessory equipment.

(b) The Contractor shall examine and equalize tension of all hoisting cables and renew all hoisting cables, including governor cables, when necessary to ensure proper maintenance or adequate safety factors.

(c) The Contractor shall repair or replace all damaged electrical wiring and conductors from the disconnect switch to the unit being serviced.

(d) The Contractor shall keep guide rails clean and properly lubricated as required, including replacing guide shoe gibs or rollers required for smooth and quiet operation. All oil reservoirs shall be kept properly sealed to prevent leakage.

(e) The Contractor shall keep the exterior of all machinery and equipment parts subject to rusting properly cleaned and painted at all times.

(f) The Contractor shall keep motor windings and controller coils properly treated with correct types and grades of insulating compounds.

(g) The Contractor shall inspect and refinish, repair or replace damaged elevator car enclosures, hoistway enclosures, hoistway door panels, frames, and/or sills.

(h) The Contractor shall verify and ensure the proper operation of emergency call phones in all elevators so equipped.

(2) Frequency. Minimum acceptable frequencies for the accomplishment of PM services are indicated in Attachment J-C9.

(3) PM Documentation. Documentation shall be in compliance with Subsection C.12., *General Requirements and Procedures for Recurring Work.*

f. Inspections, Testing, and Certification. The Contractor shall provide inspection and testing services as required in accordance with Subsection C.12.a., Preventive Maintenance, to support routine and periodic certification requirements of elevator, dumbwaiter and manlift systems. All inspections and tests shall be performed in the presence of a Contractor-provided certified inspector. All inspection and testing shall be performed in accordance with applicable sections of the American Standards Institute, Inc. (ANSI) Safety Codes, including current revisions, current OSHA regulations, and other statutes, regulations and standards listed in Attachment J-H-1, except as modified herein. Deficiencies discovered during inspection and testing shall be corrected as part of each inspection or test up to trouble call limits for each system to keep the elevators capable of providing their initially designed capacity, speed, and performance in a safe and efficient manner.

(1) Documentation. The Contractor shall provide copies of the inspection report to the Contracting Officer within two days of completion of the inspection. Each certificate issued shall be posted in its respective elevator with a copy provided to the Contracting Officer within 24 hours of issuing the certificate.

(2) Scheduling Requirements. The schedule in Attachment J-C9 indicates the month and year during which the Contractor shall provide semiannual, annual, three-year, and five-year inspections/tests during the base and option periods of the contract. Within 30 calendar days after award of the contract the Contractor shall submit for the Contracting Officer's approval a proposed schedule for the accomplishment of all such inspections and tests during the base and option periods of the contract. The schedule shall indicate the proposed date of each inspection or test for each specific system. Schedule changes required by the Government after approval shall be made at no additional cost if notice is provided to the Contractor three (3) working days or more prior to the scheduled date of accomplishment. Changes to the approved schedule proposed by the Contractor shall be submitted for the Contracting Officer's approval at least three (3) working days in advance of the proposed inspection/test date.

(a) Elevators Equipped for Firefighters' Service. For elevators so equipped, testing of firefighters' service shall be performed monthly in accordance with Rule 1206.7 of ASME A17.1.

(b) Periodic Five Year Inspection/Test Requirements. ASME A17.1, Rules 1002.3 and 1005.4, requires certain full load and speed tests to be performed at five-year intervals. Electric traction elevators require a safety test that includes testing the governor and safety buffers at rated speed and rated load. The Contractor shall perform these tests on the elevator systems specified in Attachment J-C9 in accordance with the ASME rules specified.

g. Housekeeping. See Subsection C.7.t, Housekeeping.

h. Waste Oil and Hazardous Waste. See Subsection C.7.r, Hazardous Materials.

END OF SUBSECTION C.26

C.27. ROADS AND OTHER SURFACED AREAS MAINTENANCE AND REPAIR

a. General Requirements. The Contractor shall perform temporary and permanent patching of sections of flexible and rigid pavement, pavement marking, the cutout of pavement for utility repairs, and shoring for utility repairs at NASA LaRC (see J-C1). The Contractor shall also be responsible for the maintenance of signs (street, traffic, etc.) guardrails, gutters, curbs, ramps, sidewalks, pads, wheelblocks and storm drainage structures such as culverts (open ditches are not included), inlets, catchbasins, gutters, storm sewer piping of between 2 and 60 inches in diameter, skimming basins located behind buildings 1223, 1247E and 720. (Outfalls are identified on subsurface drawings.) and minor repair of underground utility systems. All work shall comply with Americans With Disabilities Act (ADA) specifications. Also included in this Subsection is the removal of ice and snow from the surfaced areas of LaRC.

b. Scope of Work. Work includes:

(1) Trouble Call Work. Trouble calls (included in the firm fixed price portion of the contract) shall be received, managed, and worked in accordance with Subsection C.11, *General Requirements and Procedures for Trouble Calls* and this Subsection.

(2) Recurring Work. Recurring work (included in the firm fixed-price portion of the contract) shall be accomplished in accordance with Subsection C.12, *General Requirements and Procedures for Recurring Work.* Recurring work in this contract subsection includes weekly monitoring and cleaning as needed of two storm drainage skimming basins, performing a condition inspection and assessment of roads and surfaced areas annually in early Spring and reporting on their general condition, and preparing and maintaining the Snow Removal Plan of Operations. All other work in this subsection beyond the scope of trouble call will be non-recurring, indefinite quantity work as discussed below.

(3) Non-recurring Work. Non-recurring work shall be ordered using the fixed rates from Section B and shall be accomplished in accordance with Subsection C.13, *General Requirement and Procedures for Non-recurring Work* and the following. Indefinite quantity, unit priced labor or task work included in this contract subsection includes:

- Pavement repairs
- Replacement of wheel stops in parking areas
- Repairs to miscellaneous surfaces and drainage/utility access systems
- Pavement striping and stenciling
- Signage installation, repair and refurbishment
- Snow and ice removal

c. Exclusions. The following work associated with roads and surfaced areas will be performed by others and is excluded from the requirements of this contract:

(1) Marking underground utilities

(2) Surveying

(3) Storm drain and culvert inspection

(4) Street sweeping

(5) Maintenance of open drainage ditches

d. Documentation. All work shall be documented in accordance with the requirements of Subsection C.11 for Trouble Calls, C.12 for Recurring Work, and C.13 for Indefinite Quantity Work. The Contractor shall retain and maintain in the CMMS throughout the term of the contract all documentation from road and surfaced area (including drainage systems) inspections and maintenance performed. Additional reports required, their formats, and their reporting frequencies are identified in Attachment J-C6-27. Facility deficiency information obtained from daily operations, user input, or noticed during maintenance or trouble call work shall be reported in accordance with Paragraph C.7.o., *Reporting System and Equipment Deficiencies.*

e. Condition Inspection and Assessment. The Contractor shall perform a visual inspection of all roads and surfaced areas identified in Attachment J-C1-27A annually, during each April, and assess and report their conditions and degree of remedial urgency on the CMMS to the Contracting Officer within seven calendar days of the inspections. Specifically, the Contractor shall report conditions that will imminently develop into potholes, sunken asphalt in need of patching, other obstacles to driving safety, large cracks (1/2 inch or greater) in need of filling, deteriorated expansion joints, spalled or broken concrete surfaces, faded road and parking lot markings, displaced wheel blocks in need of replacement and/or repinning, missing or damaged signage, etc. This condition assessment *shall complement* the Annual Facility Condition Assessment (See C.8.f., *Facility Condition Assessment)* but *not duplicate it.* This visual inspection and report shall be accomplished as firm fixed price recurring work in accordance with Subsection C.12., *General Requirements and Procedures for Recurring Work.*

f. Requirements for Pavements. The Contractor shall provide pavement maintenance, repair, and alteration services for the pavements listed in Attachment J-C1-27A in accordance with the directives/publications listed in Attachment J-H1; applicable specifications as indicated below. All work specified in this Paragraph beyond the limitations of a trouble call is included in the indefinite quantity, unit priced labor or unit priced task portion of the contract.

(1) Bituminous Pavements.

(a) Sealing Cracks. Cracks and joints 1/8 inch or wider in surfaced areas shall be sealed in accordance with the Asphalt Institute Manual Series No. 4 (MS) 1989 edition *The Asphalt Handbook.* The sealing material shall conform to Federal Specification SS-S-1401 for roads and parking areas and Federal Specification SS-S-1614 for airfield pavements. The areas to be crack sealed shall be thoroughly cleaned of weeds and loose material and sealed under dry conditions.

(b) Patching.

1 Temporary Patch. Potholes and depressions in bituminous and concrete pavements at ordered locations shall be temporarily patched by the Contractor with either bituminous cold mix or hot mix. The final compacted surface of the patched area shall be approximately level with the adjacent pavement surface.

2 Permanent Patch. Areas to be permanently patched shall be properly prepared. Replacement materials shall be of equal or better quality than the existing, and shall equal the existing material in thickness, including all existing overlays up to six (6) inches maximum. Bituminous courses shall be constructed only when the ambient temperature is above 40 degrees F and the underlying base course is dry. Additionally, the Contractor shall ensure that: edges are straight, vertical and square; loose and soft material is removed down to firm support; the bituminous material is bonded to the bottom and sides using a tack coat of rapid-curing cut-back liquid asphalt conforming to ASTM D-2028; base and surface bituminous hot mix conforming to specifications is placed in layers (each not to exceed 2 inches after

compaction) and compacted to match the grade and elevation of the surrounding pavement; and the edges of the new patch are sealed with a pourable crackfiller conforming to Federal Specification and squeegeed straight and smooth.

(2) Portland Cement Concrete.

(a) Concrete Pavement Permanent Patch. The Contractor shall ensure that: edges are straight, squared and the sides saw-cut vertical; shallow patches are primed with a cement or epoxy grout as required; when placing new concrete, the air temperature is at least 40°F and air-entrained Portland cement high early strength concrete with a minimum compressive strength of 3,000 pounds per square inch at 28 days, is used; joints and edges are tooled and fibrous bituminous expansion joint material installed to match existing joints in adjacent pavements in accordance with ACI 325.9R; new concrete is finished by floating and brooming to match the existing adjacent pavement; and freshly deposited concrete is protected from premature drying and excessive hot or cold temperature during the curing period in accordance with the applicable SPECIFICATIONS.

(b) Concrete Curb and Gutter. Areas designated for new curb and gutter shall be properly prepared in accordance with the applicable specifications and replacement materials shall be of equal or better quality than the existing. The Contractor shall ensure that: edges are taken from an existing joint or saw-cut vertical; the subgrade conforms to ACI standards; when placing new concrete, the air temperature is at least 40°F; air-entrained Portland cement concrete with a minimum compressive strength of 3,000 pounds per square inch at 28 days and a maximum slump of four (4) inches is used; reinforcing steel is in accordance with ACI 315 and ACI 318; concrete is placed using single-course monolithic construction; concrete is finished by floating and brooming to match the existing adjacent concrete, with a uniform texture free of waves and irregularities, true to line and grade and with no variations greater than 1/8 inch under a 10-foot straightedge; edges of the gutter, back top edges of curbs, and joints are rounded to a radius of ¼ inch; joints and edges are tooled and fibrous bituminous expansion joint material installed to match existing joints in adjacent pavements in accordance with ACI 325.9R; and fresh concrete is protected from premature drying and excessive hot or cold temperature during the curing period in accordance with the applicable specifications.

(c) Parking Bumpers (Wheel Blocks). The Contractor shall replace damaged existing or install new parking bumpers as required. Replacement materials shall be of equal or better quality than the existing. The Contractor shall ensure that the following requirements are met when installing concrete parking bumpers at ordered locations:

1 Bumpers shall be reinforced precast concrete, installed in accordance with the recommendations of the manufacturer using steel rods driven into the asphalt pavement and subgrade or glued with an acceptable concrete adhesive to concrete surfaces.

2 Unless otherwise directed by the Contracting Officer, replacement bumpers shall be sized and configured to match existing and adjacent bumpers.

(d) Concrete Sidewalk. Areas designated for new sidewalk shall be properly prepared in accordance with the applicable specifications and ACI guidance. Replacement materials shall be of equal or better quality than the existing. The Contractor shall ensure that: edges are taken from an existing joint or saw-cut vertical; the subgrade conforms to ACI standards and to the applicable specifications; when placing new concrete, the air temperature is at least 40°F; air-entrained Portland cement concrete with a minimum compressive strength of 3,000 pounds per square inch at 28 days and a maximum slump

of four (4) inches is used; wire mesh and reinforcing steel is in accordance with ACI 315 and ACI 318; concrete is finished by floating and brooming to match the existing adjacent concrete, with a uniform texture free of waves and irregularities, true to line and grade and with no variations greater than 1/8 inch under a 10-foot straightedge; joints and edges are tooled and fibrous bituminous expansion joint material installed to match existing joints in adjacent pavements in accordance with ACI 325.9R; and fresh concrete is protected from premature drying and excessive hot or cold temperature during the curing period in accordance with the applicable specifications.

(e) Concrete Slabs. The replacement of existing or construction of new concrete slabs, such as for dumpster pads, handicap ramps, stoops and patios, require proper preparation and conformance to acceptable standards. Replacement materials shall be of equal or better quality than the existing. Subgrade and concrete material thickness shall be in conformance with applicable standards for the maximum anticipated wheel loads. Additionally, the Contractor shall ensure that: edges are taken from an existing joint or saw-cut vertical; the subgrade conforms to ACI standards and to the applicable specifications; when placing new concrete, the air temperature is at least 40°F; air-entrained Portland cement concrete with a minimum compressive strength of 3,000 pounds per square inch at 28 days and a maximum slump of four (4) inches is used; wire mesh, reinforcing steel and dowels for tying in with existing structures is in accordance with ACI 315 and ACI 318; concrete is finished by floating and brooming to match the existing adjacent concrete, with a uniform texture free of waves and irregularities, true to line and grade and with no variations greater than 1/8 inch under a 10-foot straightedge; joints and edges are tooled and fibrous bituminous expansion joint material installed to match existing joints in adjacent pavements in accordance with ACI 325.9R; and fresh concrete is protected from premature drying and excessive hot or cold temperature during the curing period in accordance with the applicable specifications.

(f) Sealing Concrete Joints and Cracks. The Contractor shall seal joints and cracks in accordance with the concrete sealant manufacturer's instructions and the applicable specifications, including the removal of all existing sealant; refacing, rebuilding, and cleaning joints; crack preparation and cleaning; and the application and curing of sealant. Sealant material shall be a single component, cold applied, self leveling silicone or a hot-pour, self-leveling rubberized asphalt formulated for sealing cracks in concrete surfaces including roadways.

g. General Requirements for Storm Drainage System and Miscellaneous Surfaces.

(1) Storm Drainage System. The Contractor shall maintain, patch or repair, as required, pipe culverts, drop inlets and other drainage or utility access systems described in Attachment J-C1-27B so that they operate properly and to their full capacity as designed. Included is approximately 88,850 linear feet of various types of storm drainage pipe ranging in diameter from two to 60 inches, 483 catchbasins and 153 manholes. As part of the firm fixed price, the Contractor shall also monitor weekly and clean as needed two storm drainage outfalls and skimming basins located behind Buildings 1223 and 1247E so they operate correctly and to their full capacity as designed.

(2) Miscellaneous Surfaces. The Contractor shall provide maintenance, repair, and alteration services for the miscellaneous surfaces (such as earthen, gravel, river rock, etc.) listed in Attachment J-C1-27A in accordance with the directives/publications listed in Attachment J-H1, applicable specifications, and as specified below. Potholes, ruts, washouts, and other irregularities shall be removed and adequate crowns and drainage shall be maintained on all miscellaneous surfaces.

h. Requirements for Traffic Services. The Contractor shall maintain and repair traffic signs and pavement markings. Work shall be performed on roads and streets in strict conformance with the

Manual of Uniform Traffic Control Devices for Streets and Highways and on airfield taxiways in strict conformance with local LaRC criteria.

(1) Signs. The Contractor shall repair, refurbish, install and reinstall all types of traffic control signs. All materials and configurations used in the repair, rehabilitation and the installation of traffic control signs shall conform to the *Manual on Uniform Traffic Control Devices* issued by the U. S. Department of Transportation. These requirements are included in the trouble call (firm fixed-price) portion of the contract except for repairs that exceed trouble call limits and are included in the indefinite quantity work portion of the contract.

(a) Repair and/or Refurbishment. Signs, including posts and sign supports, shall be repaired and/or refurbished to a like-new condition and shall be of the same size, color, design and durability as the original.

(b) New or Replacement. The installation of new and replacement of missing signs shall be as directed by the Contracting Officer.

(2) Pavement Markings. All work specified in this clause is included in the indefinite quantity, unit price portion of the contract.

(a) Material and Equipment. Fast drying paints for airfields and roads and streets shall conform to Federal Specification TT-P-85, color as ordered. Reflective media shall conform to Federal Specifications TT-B-1325, Type III, Gradation A for airfields and Type I, Gradation A for roads and streets. The Contractor shall provide written certification from the paint and reflective media manufacturer that the materials meet these specifications. Paint applicators shall be of the size and type suitable for the particular work.

(b) Application.

1 Surface Preparation. Surfaces to be marked shall be thoroughly cleaned and treated for oil and grease deposits before application of the paint.

2 Painting. Apply paint with approved equipment, free of unsightly drip marks and ragged edges, at a rate of coverage specified below. The maximum drying time requirements of the paint specifications shall be strictly enforced to prevent undue softening of bitumen and pickup, displacement, or discoloration by traffic tires. Discontinue painting operations if there is a deficiency in drying of the markings until the cause of the slow drying is determined and corrected. Cones, barricades, reflective tape, etc. should be used for traffic control until the paint is thoroughly dried and to prevent the tracking of paint by vehicles.

3 Reflective Marking Rates. Apply paint evenly to the pavement area to be coated at a rate of 105 (plus or minus 5) square feet per gallon. Apply glass spheres uniformly to the wet paint on airfield pavement at a rate of 10, and on road and street pavement at a rate of 6 (plus or minus 0.5) pounds of glass spheres per gallon.

4 Nonreflective Marking Rates. Apply paint evenly to the pavement surface to be coated at a rate of 105 (plus or minus 5) square feet per gallon.

5 Specifications. Unless otherwise directed by the Contracting Officer, existing layouts shall be followed for restriping. Layout drawings shall be used for new work. General specifications for pavement striping are provided:

Requirement	Color Paint	Specification
Roadway Striping	White or Yellow (Match Existing Unless Otherwise Directed), Reflectorized	Mechanically Applied; 4 Inches Wide; Straight and Continuous; Protect With Traffic Cones
Parking Lot Striping	White	Mechanically Applied; 4 Inches Wide; Straight and Continuous For the Stall Length; Stalls Parallel and Aligned;
Pavement Crosswalks	White Reflectorized	Mechanically Applied; Perpendicular to Traffic Flow; Rung and Rail Lines 6 Inches Wide; Rung Lengths 5 Feet Spaced 16 Inches Apart; Rail Lengths Extend Full Width of Pavement Being Marked; Each Line Segment Straight, Continuous, and Parallel
Pavement Stop Bars	White Reflectorized	Mechanically Applied; Extends Full Width and Perpendicular to Traffic Lane; 12 Inches Wide; In Line With Related Stop Sign Unless Other-wise Directed by CO.
Traffic Letters and Numbers	White	Applied Mechanically or by Hand (Roller) Using 18 Inch Brass or Heavy Gauge Plastic Stencils; Straight and Aligned.
Handicap Symbols	Blue Box, White Symbol and White Border	Applied by Hand (Roller) in Accordance With ADA Specifications; Use Metal or Heavy Gauge Plastic Stencils; White Symbol Centered in Blue Box; Outline Outer Perimeter In White
Parking Stall Letters and Numbers	White	Applied by Hand (Roller) Using 6 Inch Brass or Heavy Gauge Plastic Stencils; Centered at End of Stall
Curb Painting	Yellow, Red or Blue (To Match Existing Unless Otherwise Directed by the CO)	Thoroughly Scrape, Wire Brush or Water Blast All Loose Material; Use Correct Water- or Oil-Based Paint, as Appropriate; Applied By Hand or Mechanically; Protect All Surrounding Surfaces.
Curb Stenciling	White or Black to Match the Existing	Applied by Hand (Roller) Using 4- inch Brass or Heavy Gauge Plastic Stencils; Words or Markings Horizontally Straight and Centered or Evenly Spaced, as Appropriate

i. Requirements for Snow and Ice Removal. The Contractor shall provide all labor, supervision, tools, materials, equipment, transportation and management necessary for the removal of ice and snow from the roads, walkways, parking lots, handicap ramps, aircraft ramps, taxiways and other surfaced areas identified in Attachments J-C21-27A-C. The Contractor shall provide clear access to safety and emergency systems such as fire hydrants and call boxes. The Contractor shall also remove the sand and other residual materials used during the snow and ice removal process from the surfaced areas at the first opportunity following the unsafe conditions, the cost of which is included in the application cost. All operations shall be performed in accordance with the Government-approved Snow Removal Plan of Operations and LHB 1046.1, *LaRC Emergency Plan*, Chapter 2, unless otherwise specified herein. Work will be ordered in accordance with Subsection C.13., *General Requirements and Procedures for Non-recurring (Indefinite Quantity) Work.*, with a fixed unit price as defined in the unit price task portion of Section B of this contract.

Section B includes a schedule for snow and ice removal operations based on the official severity of the snowstorm (at LaRC per the official forecast by the LaRC Emergency Preparedness Officer) coupled with the total known quantity from Attachments J-C21-27A-C of surfaced areas that will be serviced. Specifically, work shall be ordered based on prices provided for:

- Snow plowing/removal for each storm up to 4 inches of snow depth
- Snow plowing/removal for each storm of 4 to 8 inches of snow depth
- Snow plowing/removal for each storm of 8 to 14 inches of snow depth
- Snow plowing/removal for each storm greater than 14 inches of snow depth
- Ice treatment: cost per ton of sand applied
- Ice treatment: cost per ton of salt applied
- Ice treatment: cost per ton of other chemicals applied

(1) Equipment and Material Readiness. Snow and ice removal shall include the use of mechanical equipment, i.e., snowplows, sand spreaders, blowers or other equipment that the Contractor considers necessary. Government furnished equipment available for the Contractor's use is identified in Attachment J-C-3. The Government shall furnish initial quantities of 5 tons of salt and 75 tons of sand in anticipation of inclement weather and worsening safety conditions. The Contractor shall ensure that these quantities are maintained at this level for the duration of the contract. The Contractor shall ensure that the snow and ice equipment intended for use is in an acceptable state of readiness, materials are on hand, and personnel are available to promptly and effectively remove and/or treat the surfaced areas at LaRC for snow and ice immediately when they are required. The Contractor shall provide and install temporary 5-foot stakes to mark fire hydrants, headwalls to culverts, speed bumps, or access roads that might be covered by drifting snow or by snowplow operations as required. The Contractor shall monitor weather conditions and coordinate all snow and ice removal operations with the Contracting Officer.

(2) Plan of Operation. As part of the firm fixed price work, within thirty (30) calendar days after the contract start date, the Contractor shall submit to the Contracting Officer for approval a Draft General Snow and Ice Removal Plan of Operations. The initial Plan should incorporate existing procedures, standards and scheduling documentation, pertinent to this Subsection and modified and updated as required, and bound. This plan shall provide an anticipated order of precedence for snow and ice removal operations considering all of the affected surfaced areas and their relative priorities as provided in LHB 1046.1, required emergency access such as to fire hydrants and call boxes, equipment that will be used, and available manpower. Additionally, the plan shall identify the quantities of salt, sand, and other chemicals that shall be stockpiled by a specific date in anticipation of seasonal ice and snow conditions. The Contractor shall, at no additional cost to the Government, review the Plan at least twice annually, during the months of November and January, make updates, and resubmit the updated Plan (or a written memorandum validating that the existing Plan is still accurate in all respects) to the Contracting Officer for approval no later than the 15th day of each of those months.

(a) Pre-Storm Update. Additionally, at least four (4) hours prior to a forecasted snow- or icestorm the Contractor shall submit to the Contracting Officer an update of the Plan of Operation, modified as necessary with greater detail to reflect the specific, current forecasted conditions. This update shall include:

- A brief summary of the Contractor's understanding of the scope of the particular storm as conveyed by the LaRC Emergency Preparedness Officer.

- A prioritized order and estimated schedule for snow and ice removal operations, based on the General Snow and Ice Removal Plan of Operations previously approved and modified as necessary to reflect the immediate conditions.

- Identification of any special circumstances known to the Contractor that may impact on the snow removal operations (such as a known VIP visit or meeting requiring prioritized, early clearance of a particular parking lot).

(b) Commencement of Operations. The Contractor shall follow the Contracting Officer-approved General Snow and Ice Removal Plan of Operations (updated), including reasonable adherence (within 1 hour except for extenuating circumstances approved by the Contracting Officer) to the estimated schedule, during snow removal and ice treatment operations.

1 Snow. The Contractor shall commence snow removal operations from all surfaced areas listed in Attachment J-C21-27A when 2-inches, or less if and when specifically directed by the Contracting Officer, of snow have accumulated on the surfaced areas at LaRC . This service shall include the sanding and salting of all areas and shall continue until all paved surfaces are clear of accumulated snow; there are no blockages of driveways, sidewalk accesses, and parking lot entrances; there is clear access to safety and emergency systems such as fire hydrants and handicap ramps; and the Contracting Officer concurs with the Contractor that the Center is safe for vehicular and pedestrian traffic.

2 Ice. Preventive measures against ice shall be taken in conjunction with snow removal operations. This includes the dispersal of sand, salt and/or other chemicals as well as scraping or taking other manual or mechanical measures during and immediately following snow removal to minimize ice accumulation and buildup and the hazards of slipping, sliding, skidding, or otherwise causing damage to vehicles, Government property or injury to personnel. This ice prevention shall be included in the fixed, unit price associated with snow removal. Situations not immediately associated with snow removal where ice treatment is required, such as snow thaw and freeze conditions and water run-off freezing during cold temperatures, shall be ordered separately by the Contracting Officer as an indefinite quantity unit price labor contract item.

(c) Vehicle Towing and Removal of Obstructions. The Contractor shall notify the Contracting Officer immediately when it is known that parked or stalled vehicles or other obstructions hinder access to snow removal areas or preclude the safe, proper and thorough clearing of streets and other paved areas. Unless advised otherwise by the Contracting Officer, these obstructions shall not relieve the Contractor of the responsibility to service these areas. Towing will be by others.

(d) Post-storm. All residual sand and other materials used during the snow and ice removal operations shall be removed from the affected areas. This process shall begin immediately after the snow and ice have melted sufficiently to permit this activity. The collection of snow removal materials shall be considered a part of the snow removal operations and accordingly included in the appropriate fixed unit price costs.

END OF SUBSECTION C.27

C.28. BUILT-IN CRANES, HOISTS, MONORAILS AND LIFTING DEVICES OPERATIONS, MAINTENANCE AND REPAIR

a. General Requirements. The Contractor shall perform inspection, testing, certification, maintenance, repair, modification, inventory control and component replacement as required to maintain built-in (fixed) cranes at NASA LaRC. Included are such types as overhead traveling, jib and wall cranes; monorails; hoists, slings and other lifting devices; and to inspect and load test certain other equipment such as mobile cranes, forklifts, and specialized research apparatus all in accordance with the manufacturer's original specifications. The Contractor shall perform load tests with test weights provided by the Government (See Subsection C.5., *Government Furnished Property and Services*). There are approximately 74 cranes, 178 hoists, 125 monorails, 1,000 wire rope and nylon slings, and 850 other miscellaneous lifting devices such as chain-falls, come-a-longs, fixed and mobile non-powered cranes, forklifts, jacks, winches, and lifting harnesses. This work may be performed during the affected facility's Annual Maintenance Shutdown. Refer to Subsection C.8., *Management.*

b. Scope of Work. Work includes:

(1) Trouble Call Work. Trouble calls (included in the firm fixed price portion of the contract) shall be received, managed and worked in accordance with Subsection C.11., *General Requirements and Procedures for Trouble Call Work*, and this subsection.

(2) Recurring Work. Recurring work (included in the firm fixed price portion of the contract) in this subsection includes preventive maintenance (including periodic inspection, load testing, and certification) and the preparation and maintenance of the Operation Procedures Plan. This recurring work shall be accomplished in accordance with Subsection C.12, *General Requirements and Procedures for Recurring Work*, and this subsection.

(3) Non-recurring Work. Non-recurring work shall be ordered using the fixed rates from Section B and shall be accomplished in accordance with Subsection C.13., *General Requirements and Procedures for Non-recurring (Indefinite Quantity) Work.*

c. Documentation. All work shall be documented in accordance with the requirements of Subsection C.11 for Trouble Calls, C.12 for Recurring Work and C.13 for Indefinite Quantity Work. The Contractor shall retain and maintain in the CMMS throughout the term of the contract all documentation from system inspections, tests, and maintenance performed. Additional reports required, their formats, and their reporting frequencies are identified in Attachment J-C6-28. System and equipment deficiency information obtained from daily operations, failed and marginally passed tests and certifications, or noticed during maintenance or trouble call work shall be reported in accordance with Subsection C.7.o., *Reporting System and Equipment Deficiencies.*

d. Operation Procedures Plan. The Contractor shall develop an Operations Procedures Plan for work on the crane, hoist, monorail and lifting device systems at LaRC. The objective is to perform crane, hoist, monorail and lifting device work in accordance with written and bound procedures to ensure that they are safe, reliable, and efficient. The Plan shall be developed using the following guidelines: (1) manufacturer's instructions, (2) NSS/GO-1740.9B, *NASA Safety Standard for Lifting Devices and Equipment*, (3) the *LaRC Safety Manual*, and (4) industry standards and national codes (American Standards Institute, ANSI, National Fire Protection Association, NFPA, and American Society of Mechanical Engineers, ASME, etc.). The Plan shall address: (1) the systems' operating procedures including the frequency and description in correct sequence of observations and adjustments to be made; (2) systems testing, inspection and certification plan and procedures; (3) safety and accident response and reporting procedures; and (4) a prequalified list of subcontractors to provide crane repair services on short notice. A draft initial plan shall be submitted to the Contracting Officer for approval within 90 days of the contract start date, and the final plan shall be submitted for approval within 45 days after the

Contractor receives the Government's response to the initial plan, unless otherwise noted. The initial Plan should incorporate existing LaRC documentation, procedures, and standards pertinent to this Subsection. The Contractor shall review the Plan at least quarterly, make updates, and resubmit the updated Plan (or a written memorandum validating that the existing Plan is still accurate in all respects) to the Contracting Officer for approval by the third work day of the start of each quarter. Deviation from the approved standard operating procedures is acceptable only with the approval of the Contracting Officer.

e. Requirements of Crane Recurring and Non-recurring Work. In addition to Subsection C.12, General Requirements and Procedures for Recurring Work, the following general performance and workmanship standards for crane system work are included. All work shall comply with the original equipment manufacturer's specifications, recommendations and manuals; ANSI Safety Codes; NASA Safety Standard for Lifting Devices and Equipment, NSS/GO 1740.9B; applicable OSHA requirements; and requirements dictated by NASA LHB-1740.2, except as modified herein. Work includes periodic Contractor operation, inspection, checks, adjustments, and maintenance of crane, monorail, hoist, sling and lifting device systems as necessary to ensure that each system complies with applicable NASA, OSHA, ANSI, ASME, and manufacturers' standards of safety, reliability, and satisfactory operating condition. PM work shall be performed in accordance with the appropriate PM frequencies and task codes listed in Attachment J-C9. The intent is to provide routine maintenance services that permit the early detection and correction of items that, if deficient or defective, would: (a) interfere with the normal effective operation of the crane; (b) endanger life and/or property; or (c) involve high cost or long lead time for repair. Work shall include, but not necessarily be limited to: comprehensive operational inspection, load testing, and adjustments to ensure the satisfactory functioning of machinery and controls, trolley, bridge and hoist brakes, gears and bearings, hooks and wire rope, limit switches and emergency stop switches, conductors, etc.; detecting and correcting the causes of unusual noises or vibrations; manufacturer's recommended machinery lubrication; adjustments to bring system operation within the manufacturer's specifications; repairs, including defective part and component replacements; equipment cleaning; and other services as required to maintain all systems at a safe and acceptable operating condition. The Contractor shall take whatever remedial action is necessary to ensure the system is code compliant and recertifiable within five (5) calendar days of failing any certification inspection. This work shall be firm fixed price, except for that beyond trouble call scope which would be indefinite quantity unit priced labor. Key replacement parts that are normal inspection or code required items shall be labeled to indicate the part replacement date.

f. Safety Inspections and Testing. The Contractor shall provide safety inspection and testing services to ensure safety and to support requirements for the continuous certification of crane, monorail, hoist, sling and lifting device systems, all as part of the firm fixed price recurring work (Subsection C.12). Additionally, load testing shall also be performed on an indefinite quantity, non-recurring basis (Subsection C.13) on certain other equipment such as mobile cranes, forklifts, and special research apparatus. All inspections and tests shall be performed by or in the presence of a Contractor-provided, qualified crane mechanic leader. All inspection and testing shall be performed in accordance with applicable sections of the American Standards Institute, Inc. (ANSI) Safety Codes, current OSHA regulations, NASA Safety Standard NSS/GO 1740.9, ASME B-30 series, and other statutes, regulations and standards listed in Attachment J-H-1, applicable specifications, and the LaRC Safety Manual, except as modified herein. Deficiencies discovered during the inspection and testing of cranes, monorails, hoists, slings and lifting devices shall be corrected as part of each inspection or test up to trouble call limits for each system to keep them capable of providing their initially designed capacity, speed, and performance, as appropriate, in a safe and efficient manner.

(1) Outside Cranes. In addition to the requirements above, the Contractor, after the inspection, shall ensure that gaskets on motor and control cabinets are firmly in place and all control units are in a secure, watertight condition.

(2) Hooks and Wire Rope. The Contractor shall check annually, correct and record any deformations found in hooks and wire rope. Magnetic particle crack detection shall be included and performed as part of the annual inspection. Inspection, maintenance and load testing shall be performed in accordance with the approved Operation Procedures Plan; NSS/GO-1740.9B, NASA LaRC Safety Standard for Lifting Devices and Equipment; by the original equipment manufacturer's specifications, recommendations and manuals; ANSI Safety Codes; applicable OSHA requirements; requirements dictated by the LaRC Safety Manual; and other applicable codes listed in Attachment J-H-1.

(3) Slings. The Contractor shall inspect annually as required by NSS/GO-1740.9B, NASA LaRC Safety Standard for Lifting Devices and Equipment, all slings and take out of service any that are deformed, fail inspection or testing or otherwise are non-compliant with Code. Attachment J-C1 -28A lists the nylon and steel slings that require inspection.

(4) Weights. Weights required for load testing cranes, monorails, hoists, slings, and lifting devices are IAGP (See Attachment J-C3). The Contractor shall store the weights at a location at LaRC as specified by the Government.

(5) Documentation. The Contractor shall provide copies of the inspection report to the Contracting Officer within two days of completion of the inspection.

(6) Scheduling Requirements. Within 30 calendar days after award of the contract the Contractor shall review the current certification status of all cranes and weight handling systems and then submit for the Contracting Officer's approval a proposed schedule in the Contractor's format for the accomplishment of those inspections and tests during the base and option periods of the contract. The schedule shall indicate the proposed date of each inspection and test for each specific system. Schedule changes required by the Government after approval shall be made at no additional cost if notice is provided to the Contractor three (3) working days or more prior to the scheduled date of accomplishment. Changes to the approved schedule proposed by the Contractor shall be submitted for the Contracting Officer's approval at least three (3) working days in advance of the proposed inspection/test date.

g. Special Requirements. The Contractor shall perform load testing on components and systems not otherwise covered in this subsection, such as forklifts, mobile cranes and specialized research apparatus, as indefinite quantity non-recurring work in accordance with Subsection C.13., General Requirements and Procedures for Non-Recurring (Indefinite Quantity) Work. The load test results shall be entered onto the CMMS within 24 hours of completion of the test. This documentation shall include as a minimum:

(1) Identification of the component or system being tested, its location, identification of the requestor and the reason for the test.

(2) The name and qualifications of the individual(s) who performed the load test.

(3) Test data, including the methodology used and the test results.

(4) Any other information the Contractor chooses to include in the report, at no additional cost to the Government.

h. Housekeeping. See Subsection C.7.t., Housekeeping.

i. Waste Oil and Hazardous Waste. See Subsection C.7.r., Hazardous Materials.

END OF SUBSECTION C.28

C.29. POTABLE WATER DISTRIBUTION SYSTEM MAINTENANCE AND REPAIR

a. General Requirements. The Contractor shall perform operation, maintenance, monitoring and repair of the potable water distribution and storage system at NASA LaRC (see J-C1). These requirements are included in the firm fixed-price portion of the contract except for repairs that exceed trouble call limits. The work shall include the distribution of potable water via above- and below-ground waterlines (14" and less, PVC, CPV, cast iron, galvanized steel, copper), preventive maintenance and repair of the system, including the domestic water booster pumps in Building 1215, any incidental excavation work, the once per year flushing of a dead-ended water line from the Air Force property and system monitoring to provide potable water 24 hours per day, 7 days per week throughout LaRC for the duration of the contract. Available schematics and line diagrams of those facilities are in Attachment J-C13-29.

b. Scope of Work. Work includes:

(1) Trouble Call Work. Trouble calls (included in the firm fixed price portion of the contract) shall be received, managed and worked in accordance with Subsection C.11., *General Requirements and Procedures for Trouble Call Work*, and this subsection.

(2) Recurring Work. Recurring work (included in the firm fixed price portion of the contract) in this subsection includes yearly flushing of Bethel Reservoir Supply, operation, monitoring, preventive maintenance and the preparation and maintenance of the Operation Procedures Plan and shall be accomplished in accordance with Subsection C.12, *General Requirements and Procedures for Recurring Work*, and this subsection.

(3) Non-recurringWork. Non-recurring work shall be ordered using the fixed rates from Section B and shall be accomplished in accordance with Subsection C.13., *General Requirements and Procedures for Non-recurring (Indefinite Quantity) Work.*

c. Exclusions. Services excluded from this Subsection are:

(1) The routine testing and chemical treatment of potable water.

(2) The water distribution system on Langley Air Force Base (LaRC "East Side") up to the supply valve entering each building (at which point it becomes the Contractor's responsibility under Subsection C.21, *Buildings and Structures Maintenance and Repair*) Refer to Attachment J-C1-29 for details of the water distribution system requirements included under this contract.

d. Documentation. All work shall be documented in accordance with the requirements of Subsection C.11 for Trouble Calls, C.12 for Recurring Work, and C.13 for Indefinite Quantity Work. The Contractor shall retain and maintain in the CMMS throughout the term of the contract all documentation from system inspections, tests, and maintenance performed. System and equipment deficiency information obtained from daily operations, failed and marginal inspections, or noticed during maintenance or trouble call work shall be reported in accordance with Paragraph C.7.o., *Reporting System and Equipment Deficiencies.*

e. Operation Procedures Plan. The Contractor shall develop an Operations Procedures Plan for work on the potable water distribution system at LaRC. The objective is to perform potable water distribution system-related work in accordance with written and bound procedures to ensure that it is safe, reliable, efficient and without preventable interruption. The Plan shall be developed using the following guidelines: (1) manufacturer's instructions, (2) the *LaRC Safety Manual*, and (3) industry standards and national codes (American Standards Institute, ANSI, National Fire Protection Association, NFPA, and American Society of Mechanical Engineers, ASME, etc.). The Plan shall address: (1) the systems' operating and monitoring procedures including temporary and emergency procedures; (2) systems testing and inspection plan and procedures, including quality standards, system pressures, etc., that are to be met; and (3) safety and accident

response and reporting procedures. A draft initial plan shall be submitted to the Contracting Officer for approval within 90 days of the contract start date, and the final plan shall be submitted for approval within 45 days after the Contractor receives the Government's response to the initial plan, unless otherwise noted. The initial Plan should incorporate existing LaRC documentation, procedures, and standards pertinent to this Subsection. The Contractor shall review the Plan at least quarterly, make updates, and resubmit the updated Plan (or a written memorandum validating that the existing Plan is still accurate in all respects) to the Contracting Officer for approval by the third work day of the start of each quarter. Deviation from the approved standard operating procedures is acceptable only with the approval of the Contracting Officer.

f. Contract Interfaces. The Contractor is advised that in performing the work under this subsection there will be a need to interact with others at one or more interface points. These interfaces, summarized in Attachment J-C1-29, may be with NASA LaRC, Air Force or other Government, Utility Company or other contractor personnel.

g. System Performance Requirements. The Contractor shall, as part of the firm fixed price work, monitor, maintain and repair up to Trouble Call limits the potable water pumping, storage and distribution system within the LaRC compound in order to provide the safe, continuous, cost effective, and efficient conveyance of potable water in meeting all end user requirements. Flow shall be maintained within LaRC properties so as to prevent interruptions of service, potable water contamination, and to ensure compliance with applicable health and regulatory agency standards at all times. The system pressure shall be monitored and maintained to ensure system pressure of between 76 and 80 PSI. The Pressure Gauge Readout and domestic water booster pumps are located at Building 1215, the Steam Generation Plant.

h. Temporary and Emergency Services. Temporary and emergency potable water services may be necessary to accomplish certain repairs, maintenance efforts, and new service connections. Such temporary and emergency services shall be coordinated with the Contracting Officer and shall be accomplished using methods to avoid service interruptions, where possible, or to minimize system downtime where such interruptions of service are unavoidable. The Contracting Officer shall be notified of scheduled temporary service conditions at the time of job scheduling and shall be notified of all service interruptions as soon as possible, with the notification time not to exceed one hour after Contractor identification of an emergency. For the purposes of this specification, an emergency situation is defined as any condition that requires immediate action to eliminate life or serious injury hazards to personnel, prevent loss or damage to Government property, or restore essential services.

END OF SUBSECTION C.29

C.30. SANITARY SEWER SYSTEM MAINTENANCE AND REPAIR

a. General Requirements. The Contractor shall perform operation, maintenance, excavation, and repair of the sanitary sewer system at NASA LaRC, including approximately 30 lift stations, a main pumping station with parallel pumping capability and emergency power backup system in building 1223, an 8-inch force main, and standard drainage system components including cast iron, PVC and terra-cotta piping of between 4 and 24 inches in diameter, in accordance with the requirements herein and referenced in Attachment J-H1 and the applicable specifications. The Hampton Roads Sanitation District provides actual treatment of the sewage. The Contractor is responsible for the sanitary sewer system within the confines of LaRC property. These requirements are included in the firm fixed-price portion of the contract except for repairs that exceed trouble call limits and are included in the non-recurring work portion of the contract. The Contractor shall monitor the sanitary sewer system to ensure that the system provides sewage collection capability throughout LaRC and disposal 24 hours per day, seven (7) days per week for the duration of the contract. Available schematics and line diagrams of those systems are listed in Attachment J-C13-30.

b. Scope of Work. Work includes:

(1) Trouble Call Work. Trouble calls (included in the firm fixed price portion of the contract) shall be received, managed and worked in accordance with Subsection C.11., *General Requirements and Procedures for Trouble Call Work*, and this subsection.

(2) Recurring Work. Recurring work (included in the firm fixed price portion of the contract) in this subsection includes preventive maintenance, sewage system inspections and preparation and maintenance of the Operation Procedures Plan and shall be accomplished in accordance with Subsection C.12, *General Requirements and Procedures for Recurring Work*, and this subsection. Refer to Attachment J-C13-30 for details of the sanitary sewer system.

(3) Non-recurring (Indefinite Quantity) Work. Non-recurring work shall be ordered using the fixed rates from Section B and shall be accomplished in accordance with Subsection C.13., *General Requirements and Procedures for Non-recurring (Indefinite Quantity) Work.*

c. Exclusions. Services excluded from this Subsection are:

(1) The routine testing and treatment of sewage.

(2) The sanitary sewer system on Langley Air Force Base (LaRC "East Side") up to the five (5) foot line around each LaRC-owned facility listed in Attachment J-C1-21A (at which point it becomes the Contractor's responsibility under Subsection C.21, *Buildings and Structures Maintenance and Repair*).

d. Documentation. All work shall be documented in accordance with the requirements of Subsection C.11 for Trouble Calls, C.12 for Recurring Work, and C.13 for Indefinite Quantity Work. The Contractor shall retain and maintain in the CMMS throughout the term of the contract all documentation from system inspections, tests, and maintenance performed. Additional reports required, their formats, and their reporting frequencies are identified in Attachment J-C6-30. System and equipment deficiency information obtained from daily operations, failed and marginally inspections, or noticed during maintenance or trouble call work shall be reported in accordance with Subsection C.7.o., *Reporting System and Equipment Deficiencies.* The Contractor shall submit monthly, by the 5th of the following month, the amount and cost of effluent discharged, to the CO in Excel format.

e. Operation Procedures Plan. The Contractor shall develop an Operations Procedures Plan for work on the sanitary sewer system at LaRC. The objective is to perform sanitary sewer

collection system-related work in accordance with written and bound procedures to ensure that it is safe, reliable, efficient and without preventable interruption. The Plan shall be developed using the following guidelines: (1) manufacturer's instructions, (2) the *LaRC Safety Manual*, and (3) industry standards and national codes (American Standards Institute, ANSI, National Fire Protection Association, NFPA, and American Society of Mechanical Engineers, ASME, etc.). The Plan shall address: (1) the systems' operating and monitoring procedures including temporary and emergency procedures; (2) an inspection plan to ensure all pumping stations are in good working order and (3) safety and accident response and reporting procedures. A draft initial plan shall be submitted to the Contracting Officer for approval within 90 days of the contract start date, and the final plan shall be submitted for approval within 45 days after the Contractor receives the Government's response to the initial plan, unless otherwise noted. The initial Plan should incorporate existing LaRC documentation, procedures, and standards pertinent to this Subsection. The Contractor shall review the Plan at least quarterly, make updates, and resubmit the updated Plan (or a written memorandum validating that the existing Plan is still accurate in all respects) to the Contracting Officer for approval by the third work day of the start of each quarter. Deviation from the approved standard operating procedures is acceptable only with the approval of the Contracting Officer.

f. Contract Interfaces. Work under this subsection often requires interaction with others at one or more interface points. These interfaces, summarized in Attachment J-C1-30A, may be with NASA LaRC, Air Force or other Government, Hampton Roads Sanitary District Commission, or other contractor personnel.

g. Compliance. The Contractor shall comply with the instructions of the LaRC Office of Safety, Environment and Mission Assurance with respect to avoidance of conditions that create a nuisance or may be hazardous to the health of LaRC personnel. Notice of violations of any local, State, or Federal regulatory permit or law or of any lift station bypassing shall be prepared by the Contractor and submitted to the Contracting Officer within 24 hours of the Contractor's identification of the noncompliance.

h. System Inspections. The Contractor shall inspect the sewage pumping stations (Attachment J-CI-30A) using the checklist shown in Attachment J-C9-30. Buildings 1223, 1251, 1154, 1291, 1244 and 1231 shall be inspected weekly. The remaining stations shall be inspected monthly. Inspections shall be documented on a sewage inspection form (See Attachment J-C6-30.) and input onto the CMMS, following the prescribed format and available for review by the Government, within one working day of each inspection. This inspection shall be included as part of the firm fixed price recurring work in accordance with Subsection C.12., *General Requirements and Procedures for Recurring Work*.

i. System Performance Requirements. The Contractor shall, as part of the firm fixed price work, monitor, maintain and repair (within the TC limits) the sanitary sewer system at NASA LaRC in order to provide the safe, continuous, cost effective, and efficient conveyance of sanitary sewage. Flow shall be maintained in gravity lines and force mains within LaRC properties so as to prevent the cause of nuisance odors, interruptions of service and to ensure compliance with applicable health and regulatory agency standards at all times. Systems shall be maintained to minimize unsatisfactory service conditions including flooding conditions, pump station failures, pipe blockages, and excessive infiltration and inflow conditions. The main pumping station is in Building 1223 from which a constant system pressure of 60 psi shall be monitored and maintained to the Hampton Roads Sanitary System facilities. High water alarms are monitored 24 hours per day, seven days per week by the Duty Officer in Building 1215, which is also the location of the insertion valve that records the total sewage flow from LaRC to the Hampton Roads Sanitary System.

j. Temporary and Emergency Services. Temporary and emergency sanitary sewage services may be necessary to accomplish certain repairs, maintenance efforts, and new service connections. Such temporary and emergency services shall be coordinated with the Contracting Officer and

shall be accomplished using methods to avoid service interruptions, where possible, or to minimize system downtime where such interruptions of service are unavoidable. The Contracting Officer shall be notified of scheduled temporary service conditions at the time of job scheduling and shall be notified of all service interruptions as soon as possible, with notification time not to exceed one hour after Contractor identification of an emergency. For purposes of this specification, an emergency situation is defined as any condition that requires immediate action to eliminate life or serious injury hazards to personnel, prevent loss or damage to Government property, or restore essential services.

END OF SUBSECTION C.30

C.31. RESEARCH FACILITY MECHANICAL, ELECTRICAL AND FLUID SYSTEMS MAINTENANCE AND REPAIR

a. General Requirements. The Contractor shall perform maintenance, repair, alterations, modifications, and inspection of mechanical, electrical and fluid systems in research facilities at NASA LaRC that will result in their safe, proper, and efficient and reliable operation. These systems include hydraulic and lubrication oil systems; test medium liquid and gas systems; drive systems, including motors and fan blades; mechanical testing equipment; and fluid delivery systems. The fluid systems are comprised of oxygen, hydrogen, argon, refrigerant, and nitrogen pumping and nitrogen dispensing facilities; central high pressure air compression facilities; heavy gas (134A) and helium compression and reclamation facilities and systems. The Contractor shall make every effort to minimize disruptions to Government research activities by developing an acceptable maintenance and repair work schedule. Refer to Subsection C.8.a, *Work Control.*

b. Scope of Work. Attachment J-C1-22A-G describes the equipment and systems to be maintained in this contract. The work in this subsection includes:

(1) Trouble Call Work. Trouble calls (included in the firm fixed price portion of the contract) shall be received, managed, and worked in accordance with Subsection C.11, *General Requirements and Procedures for Trouble Call Work*, except that all trouble calls for ~~equipment components and systems included in this subsection~~ (~~See Subsection~~ C.31.a. *General Requirements*) shall be treated as *Emergency Trouble Calls.*

(2) Recurring Work. Recurring work (included in the firm fixed price portion of the contract) in this subsection includes preventive maintenance on equipment and systems and the preparation and maintenance of the Operation Procedures Plan and will be accomplished in accordance with Subsection C.12, *General Requirements and Procedures for Recurring Work.*

(3) Non-recurring Work. Non-recurring work shall be accomplished in accordance with Subsection C.13., *General Requirements and Procedures for Non-recurring (Indefinite Quantity) Work*, and this subsection.

c. Documentation. All work shall be documented in accordance with the requirements of Subsection C.11 for Trouble Calls, C.12 for Recurring Work, and C.13 for Indefinite Quantity Work. The Contractor shall retain and maintain in the CMMS throughout the term of the contract all documentation from system inspections, tests, and maintenance performed. System and equipment deficiency information obtained from daily operations, failed and marginally passed inspections, or noticed during maintenance or trouble call work shall be reported in accordance with Subsection C.7.o, *Reporting System and Equipment Deficiencies.* The Contractor shall prepare and maintain accurate as-built drawings in accordance with Subsection C.7.j, *As Built Drawings.* Required reports, their formats, and their reporting frequencies are identified in Attachment J-C6-31.

d. Operation Procedures Plan. The Contractor shall develop an Operations Procedures Plan for work on the research facility mechanical, electrical and fluid systems at LaRC. The objective is to perform research facility mechanical, electrical and fluid systems-related work in accordance with written and bound procedures to ensure that the systems are safe, reliable, and operate at their designed precision and without preventable interruption. The Plan shall address procedures for notifying appropriate personnel of work to be performed in research facilities, plans for coordinating the work with on-going facility operations, and emergency, safety and accident reporting procedures. A draft initial plan shall be submitted to the Contracting Officer for approval within 90 days of the contract start date, and the final plan shall be submitted for approval within 45 days after the Contractor receives the Government's response to the initial plan, unless otherwise noted. The initial Plan should incorporate existing LaRC documentation, procedures, and standards pertinent to this Subsection. The Contractor shall review the Plan at least

quarterly, make updates, and resubmit the updated Plan (or a written memorandum validating that the existing Plan is still accurate in all respects) to the Contracting Officer for approval by the third work day of the start of each quarter. Deviation from the approved standard operating procedures is acceptable only with the approval of the Contracting Officer.

e. Coordination. See Subsection C.7.k., *Interface With Government Personnel and Other Contractors*.

f. Personnel Qualifications. The Contractor shall ensure that employees are journeyman-level technicians trained and capable of performing all work under this Subsection. See also Subsection C.7.b, *Staffing*.

g. Requirements For Machining, Welding, and Metal Work. The Contractor shall provide maintenance, repair, or replacement of research facility mechanical, electrical and fluid systems and shall construct and install metal components in support of other repair activities as required by this subsection.

(1) Metal Work. Metal work shall include heating and bending to form metal shapes, drilling, torch cutting, hammer forging, grinding, sawing and fitting of metal parts. The Contractor shall perform metal work to maintain and repair or fabricate and replace metal components of research facility mechanical, electrical and fluid systems. Also included is the construction and installation of metal components in support of other maintenance activities. The Contractor shall work with materials from a variety of sheet metal stocks including aluminum, copper, galvanized and stainless steel.

(2) Piping and Tubing Fabrication. The Contractor shall fabricate and install piping of various materials including carbon steel, stainless steel, monel, inconel, and aluminum, using fit-up and weld methods such as open butt E.B. insert, socket weld, and chill rings. Additionally, the Contractor shall fabricate and install high-pressure stainless steel tubing. The work requires bending, flaring, soldering, welding, and the installation of various types of compression fittings.

(3) Welding. The Contractor shall provide all types of welding and brazing required for the maintenance and repair of research facility mechanical, electrical and fluid systems. Welding shall be performed on light, heavy gauge and hardened metals and castings using flat, vertical, horizontal, and overhead positions. Welding typically shall be performed on fixtures, brackets, tools, machinery, high pressure piping systems, and pressure vessels. Processes include shielded metal arc welding (SMAW), gas metal arc welding (GMAW), preheating, brazing, bead welding, tack welding, plasma and flame cutting, pressure welding and heat treating. Welding, burning and open flame work will be permitted, but shall only be performed under the following conditions: (1) the method must be approved by the Contracting Officer and (2) the Contractor shall provide an adequate fire watch and the required fire extinguishing equipment. The Contractor shall notify the Contracting Officer and obtain a welding permit before proceeding. All Contractor welders shall be qualified and certified for the specific welding process in accordance with applicable American Society of Mechanical Engineers (ASME) Section IX, American National Standards Institute (ANSI), and American Welding Society (AWS) D1.1 and D1.3 standards.

(4) Machinist Tasks. The Contractor shall perform machinist tasks such as drilling, tapping, boring, reaming, and grinding a variety of materials such as steel, cast iron, stainless steel, aluminum, copper, brass, bearing bronze, manganese, babbitt, etc. The Contractor shall install equipment requiring critical alignment of motors, pumps, blowers, gear reducers, etc. The Government will provide the Contractor access to IAGP shop equipment located in 1189 and listed in J.C3-5C.

h. Repair Work. For any individual repair item, the Contractor is responsible to perform any work item within the scope of trouble calls as part of the firm fixed price. When the repair exceeds the trouble call limit, the work shall be processed as indefinite quantity work in accordance with Subsection C.13. After completing repairs to an area that affects the integrity of a fluids system, the Contractor shall pressurize the system and check for leaks. Refer to Subsection C.19., *Calibration, Testing and Component Verification*. If the repair is made to a buried section of the system, a pressure test shall be accomplished prior to covering the repaired area. The appropriate anti-seize compound shall be used on all fasteners. When required by deterioration or missing or damaged threads, the Contractor shall remove the existing and install new fasteners that conform to standards and specifications listed in the applicable specifications. Types of systems that require repairs include, but are not limited to, model support systems, high pressure compressors, standard and unique valves, programmable logic controls, model injection systems, test section drives, arc sectors, test section doors and hydraulic systems.

i. Requirements for Lubrication and Hydraulic Systems. Work shall include trouble calls, maintenance and repair of the lubrication systems and hydraulic systems up to 10,000 psi in each research facility. Included are various piping systems, tubing, hoses, reservoirs, accumulators, gages, valves, pumps, servo control valves, filters, check valves, and failsafe systems. Included also are troubleshooting; the replacement, cleaning, relining, and installation of pipe and tubing; rebuilding pumps; certification of relief valves and gages; calibration of pressure and temperature switches; installation of sampling ports and quick disconnects; obtaining routine oil samples for analysis by the Government; and adjustments to components in accordance with established flow control diagrams. When repaired, lubrication and hydraulic systems shall be free flowing, in good, safe operating condition, and free of leaks and drips. All fluids shall be filtered to 3 micron absolute before being introduced into the system. The Contractor shall provide lubricant samples to the Government to verify system cleanliness is maintained to manufacturer and NASA LaRC standards. In addition, work will require component calibration and verification, nondestructive testing consisting of hydrostatic testing of all piping and system components prior to installation into systems above 125 PSI, including research metering devices, controls, gages, and temperature/pressure readout devices. See Subsection C.19., *Calibration, Testing and Component Verification*. Configuration controlled documents associated with each research facility describe and provide schematic drawings of each lubrication and hydraulic system covered in this subsection. All work shall be in accordance with LHB 1710.12, *Potentially Hazardous Materials* and LHB 1710.40, *Safety Regulations Covering Pressurized Systems*.

j. Requirements for Test Medium Liquid and Gas Systems . The Contractor shall provide maintenance, repair, and/or overhaul of mechanical and electrical systems including machinery; centrifugal, rotary and reciprocating compressors; high pressure and vacuum valves; gear and piston-type vacuum and miscellaneous pumps; plant instrumentation; vacuum spheres and gas storage cylinders and tanks; electrical equipment and components; and various mechanical equipment as well as associated appurtenances necessary to generate and deliver various liquids and gases to their respective dispensing or distribution system or to evacuate and reclaim the gases and liquids from such systems. Specifically, these test medium fluid systems include:

(1) Central High Pressure Compressed Air Plant (Building 1247E). Work shall include the maintenance, repair, and/or overhaul of plant equipment, instrumentation, data recording equipment, system safety alarms, components, various mechanical and electrical ancillary equipment and associated appurtenances necessary to generate and deliver high pressure compressed air to its distribution system.

(2) Heavy Gas Compression and Reclamation. Work shall include the maintenance and repair of the heavy gas (134A) handling system and related equipment associated with the Transonic Dynamics Tunnel, Building 648. The Heavy Gas Reclamation System consists of a vaporizer, low temperature condenser, vacuum pumps, compressors, dryers, and a liquid storage vessel required for the evacuation, vaporization and liquification of heavy gas as a test medium.

(3) Helium Compression and Reclamation. Work shall include the maintenance and repair of helium compressors and related equipment identified in Attachment J-C1-22A-G and located in Buildings 1247B and 1265. Facility systems consist of compressors for the evacuation and purification of helium, as well as the air/nitrogen evacuation and liquid nitrogen pumping equipment. Vacuum spheres and storage vessels shall be maintained as part of the vacuum systems.

(4) Other Liquid and Gas Test Medium Pumping and Dispensing Systems. Work shall include the maintenance and repair of pumping and dispensing systems identified in Attachments J-C1-22A-G for fluid test mediums in various facilities including, but not limited to liquid and gaseous nitrogen LN_2/GN_2 (Buildings 648, 1236, 1242, 1247B, 1221 and 1277), hydrogen (GH_2) (Building 1265, 1247B, & 1221), liquid oxygen (LOX) (Building 1265), argon (CF_4) (Buildings 1265 and 1275), helium (Building 1265), methane (Building 1265) and silane (Buildings 1221, 1265 and 1275). The Contractor is advised that these fluids are hazardous to personal safety, property and/or the environment and strict adherence to the provisions of LHB 1710.12, *Potentially Hazardous Materials*, is mandatory.

When equipment or systems are required to be secured or deenergized for work to be performed, safety clearance shall be coordinated with the Facility Coordinator. Plant maintenance shall be performed in accordance with the approved operating procedures as defined previously in this subsection and as required by ASME and ANSI.

k. Requirements For Liquid and Gas Piping/Distribution Systems. The work under this subsection shall include maintenance, trouble calls, repair, and modification to piping, insulation and associated system components, including above- and underground valves, piping regulators, relief valves, servo valves, high pressure switches, transmitters, hydraulic pumps, and pressure reducing valves. In addition, the work involves component calibration and verification (Refer to Subsection C.19., *Calibration, Testing and Component Verification.*), nondestructive testing and hydrostatic testing. Piping systems to be maintained under this subsection include:

- Air systems up to 6,000 psig with piping of various materials and sizes up to 24 inches.
- High and low pressure gaseous and liquid nitrogen systems with piping of all materials for pressures up to 12,000 psig.
- Methane gas systems up to 6,000 psig.
- Liquid and gaseous oxygen systems with pressures up to 6,000 psig.
- Helium systems up to 6,000 psig.
- Argon systems – low pressure purge (less than 125 psig).
- CF_4 gas system up to 2,500 psig.
- Vacuum systems up to 72 inches (in size)
- Silane systems
- Hydrogen systems up to 2,500 psig.
- Freon R-134 systems up to 600 psig.
- Natural gas systems

(1) Piping Services Requirements. Work includes the fabrication and installation of piping using all types of fitup and weld methods including all types of materials: carbon steel, stainless steels, monel, inconel, aluminum, etc. The work also includes the fabrication and installation of high pressure stainless tubing requiring bending, flaring, soldering, welding, and the installation of various types of compression fittings used in high pressure systems. The

Contractor shall have the knowledge, training, and experience necessary to perform all of these requirements so as to meet or exceed applicable work standards and code requirements.

(2) Touch-up Painting. See Subsection C.21.m., *Requirements for Painting*

(3) Non-Destructive Testing. Non-destructive testing shall be performed as required on all systems above 125 psig. Non-destructive testing includes radiograph inspection, magnetic particle inspection, and/or die penetrant testing and shall be performed in accordance with the applicable specifications.

l. Requirements for Mechanical and Electrical Drive Systems. The Contractor shall maintain unique mechanical and electrical drive system components to minimize system failures and to prolong the service life of the equipment.

(1) Work Requirements. The Contractor shall perform all component, equipment and system maintenance and repair in accordance with the specific configuration controlled procedures and checklists prepared for their respective component, equipment or system; the frequencies and job plans listed in Attachment J-C9; the *LaRC Safety Manual;* the applicable specifications; and other standards listed in Attachment J-H-1. Included is a wide variety of work such as setting, aligning, balancing, lubricating, assembling, disassembling, monitoring, testing overhauling, major servicing, and diagnosis of trouble. The Contractor shall install shafts, align couplings and mesh gears in gear boxes, dismantle the equipment, examine for wear, lubricate parts, test circuitry and various alarm systems, and replace worn parts. The Contractor shall test, inspect, scrape, shim, and adjust components for proper operation. The Contractor shall clean systems such as heat exchangers, cooling circuits, and unique heat transfer equipment. Services shall include the disposal of contaminants that are generated by the cleaning process. The Contractor shall perform preventive maintenance (PM) on the equipment and systems listed in Attachment J-C9 in accordance with Subsection C.12.a., *Preventive Maintenance.* The Contractor shall perform these and other tasks on wind tunnel main drive and auxiliary mechanical systems (e.g., motors, bearings, shafts, couplings, gear boxes, compressors, speed control regulators, journals, seals, vanes, fan blades, lubrication systems, etc.); electrical systems (e.g., motor-generators, rheostats, power supplies, circuitry, drive control mechanisms, switchgear, transformers, alarm systems); cooling systems (e.g., cooling towers, isolation valves, pumps, cooling tower fans, piping); research equipment systems (e.g., vacuum pumps, hydraulic systems, test section struts, heat exchangers, valves, other miscellaneous pumps, filters, exhaust fans, compressors, etc.); and other machinery, electrical components, natural gas systems, pumps and equipment within LaRC buildings and structures not otherwise covered in Subsection C.21, *Buildings and Structures Maintenance and Repair*; Subsection C.22., *HVAC and Refrigeration Systems Maintenance and Repair*; or other subsection of this specification. The Contractor shall update PM schedules as necessary to reflect any changes in equipment inventory.

(2) Mechanical and Electrical Drive and Auxiliary Systems. The Contractor shall perform on-site machining (including precision layout, drilling, tapping, milling, reaming, etc.) of test equipment and apparatus; the assembly of research test hardware and components that could require electrical, mechanical, and controls and fluid systems support; the optical, mechanical and laser alignment of research equipment; and the balance (as appropriate) and repair of mechanical and electrical drive and auxiliary equipment and systems included in this subsection and identified in Attachment J-C1-22A-G, including, but not limited to:

Mechanical and Electrical Drive Systems

(a) Bearings – babbit, roller, sleeve, ball, thrust

(b) Motors – fractional HP to approximately 135,000 HP; AC, DC, synchronous, wound rotor induction (WRIM), condensers

(c) Generators – operating at voltages up to 13,800 volts

(d) ~~AC and DC Power Supplies – 10 MW, 6,600V~~

(e) Couplings – gear, flexible, rigid

(f) Alignment – laser, optical and mechanical

(g) Turning Gears, motors, switches, and Gear Boxes

(h) Lubrication systems – lift pumps, lube pumps, flow-raters, filters, heat exchangers

(i) Compressors – high pressure, methane, helium, nitrogen, freon

(j) Piping and Piping Systems (air, water, gas)

(k) Integrated Drive and Speed Control Mechanisms and Regulators

(l) Circuitry (power, control, ground detection, thermal and temperature, annunciator)

(m) Electrical switchgear (2.3 KV and 13 KV), reostats, transformers, power distribution system and relays

(n) Alarm Systems (temperature monitoring, vibration monitoring, security)

(o) Cooling System (cooling towers, isolation valves, pumps, cooling tower fans)

(p) Balancing of Rotating Equipment.

Auxiliary Systems.

(a) Vacuum Pumps

(b) Hydraulic Systems – pumps, filters, control devices, bladders, accumulators

(c) Test Section Components, Struts, Arc Section Drives, Flat Drives, Corner Fillet Drives, ~~Gear Boxes~~, ~~Motors~~, Test Section Side Walls, Test Section Doors, etc.

(d) Heat Exchangers – air, water, lubricant

(e) Valves – gas, liquid, vacuum up to 10,000 psi

(f) Pumps – condensate, sump, hot water, chilled water, water pumps

(g) Air Filters

(h) Exhaust Fans

(i) Compressors – high pressure, nitrogen, helium, freon

(j) Piping and Piping Systems

(k) Tunnel Physical Attributes (doors, vanes, interior surfaces, insulation)

m. Housekeeping. See Subsection C.7.t., *Housekeeping.*

n. Waste Oil and Hazardous Waste. See Subsection C.7.r., *Hazardous Materials.*

END OF SUBSECTION C.31.

SECTION E - INSPECTION AND ACCEPTANCE

E.1 FINAL INSPECTION AND ACCEPTANCE (LaRC 52.246-94) (OCT 1992)

Final inspection and acceptance of all items specified for delivery under this contract shall be accomplished by the Contracting Officer or his duly authorized representative at destination.

E.2 CONSEQUENCES OF CONTRACTOR'S FAILURE TO PERFORM REQUIRED SERVICES FOR FIRM FIXED PRICE WORK

A. The Government may deduct from the Contractor's invoice or otherwise withhold payment for any item(s) of nonconforming service as specified below. Examples of deductions calculated for reduction of the Contractor's monthly invoice due to non-performed or unsatisfactorily performed work, using the Schedule of Deductions and the Performance Requirements Summary can be found in Exhibit H.

The Government will apply an inspection technique which covers all or part of the work to either assess the Contractor's performance or determine the amount of payment due or both. The defect rate for the purpose of assessing the Contractor's performance will be the sum of all defects observed during the course of the work expressed as a percentage of the total population of work items on a monthly basis. The defect rate will not be extrapolated to the total population of work items to determine payment due. If the defect rate exceeds the Maximum Allowable Defect Rate (MADR) in the Performance Requirements Summary, (PRS), the Contractor has demonstrated a repetitive trend of non-performed and unsatisfactory work and the Contractor's quality control is considered unsatisfactory. Failure to consistently maintain adequate quality control can result in termination for default. Deductions may be taken for each incidence of non-performed or unsatisfactorily performed work, regardless of the MADR.

B. The Government will provide the Contractor written notice of deficiencies prior to deducting for non-performed or unsatisfactory work. Therefore:

1. In the case of non-performed work, the Government:

a. May deduct from the Contractor's invoice all amounts associated with such non-performed work at the prices established by the Schedule of Deductions and the PRS or provided by other provisions of this contract, or

b. May, at the Government's option, afford the Contractor an opportunity to perform the non-performed work within a reasonable period subject to the discretion of the Contracting Officer's Technical Representative (COTR) at no additional cost to the Government, or

c. May, at the Government's option, perform the services by Government personnel or other means, and initiate deductions per paragraph B.1.a above.

2. In the case of unsatisfactory work, the Government

a. May deduct from the Contractor's invoice all amounts associated with such unsatisfactory work at the prices established by the Schedule of Deductions and the PRS or provided by other provisions of the contract, or

b. May, at the Government's option, afford the Contractor an opportunity to correct the unsatisfactory work within a reasonable period subject to the discretion of the Contracting Officer's Technical Representative (COTR) at no additional cost to the Government, or

c. May, at the Government's option, perform the services by Government personnel or other means, and initiate deductions per paragraph B.2.a above.

C. Should the Government elect options B.1.a., B.1.b., B.2.a., or B.2.b. above, the Government will not assess additional remedies if: (1) the Contractor is working in good faith with the Government to correct the problem(s) in the future; (2) the Contractor does not have a repetitive trend of non-performed and unsatisfactory work for the same requirements; and (3) the Contractor is willing to re-perform defective services at no additional cost to the Government.

D. Should the Government elect B.1.c. or B.2.c. above, the Government will further reduce the contract payment by the amount paid to any Government personnel (based on wages, retirement and fringe benefits – see H.3) plus material, or the actual costs of other means that accomplished the services.

E. In the event the price of non-performed or unsatisfactory work cannot reasonably be determined from the prices established in the Schedule of Deductions or on the basis of the actual cost to the Government, estimating methods may be used, including Means Facilities Cost Data or other estimating guides and methods. Where appropriate, the Contractor's proposed unit priced labor rates and fixed burden rates will also be used.

F. When the Government exercises its options in B.1.b. or B.2.b., the original inspection results shall not be modified upon re-inspection. Some reductions may be offset upon satisfactory re-performance of the work, when the Contractor in its monthly invoice (see G.5) furnishes proper documentation. However, a deduction will not be eligible for offset where the Contractor has failed to meet a task's timeliness requirement.

G. The Government's exercise of rights under this clause shall not preclude either (1) single occurrences of such nonperformance or unsatisfactory performance, or (2) multiple occurrences of nonperformance or unsatisfactory performance, regardless of whether deductions were taken, from being grounds for termination in accordance with the clause 52.249-8, Default (Fixed Price Supply and Service), in Section I.

E.3 CONSEQUENCES OF CONTRACTOR'S FAILURE TO PERFORM REQUIRED SERVICES FOR IDIQ WORK

A. The Government will withhold payment for any Work/Service Request (WSR) that does not conform to the requirements specified. The Government will give the Contractor written notice of deficiencies by copy of the final inspection results or other applicable documentation.

B. IDIQ work accepted by the Government may be subject to the following deductions for the reasons specified:

DEDUCTION SCHEDULE FOR IDIQ WORK	
Failure to satisfy WSR requirements by completion date specified on WSR (Timeliness)	Reduce total approved WSR amount by 10%.
Failure to avoid unplanned disruptions to building occupants during WSR performance. (Schedule)	Reduce total approved WSR amount by 5%.

C. Should the Government be required to perform the deficient services by Government or other personnel, the Government will further reduce the contract payment by the amount paid to any Government personnel (based on wages, retirement and fringe benefits – see H.3) plus material and equipment costs, or the actual costs of other means that accomplished the services. If the actual costs

cannot be readily determined, the prices established in the Contractor's WSR proposal may be utilized in establishing a deduction amount.

D. The Government's exercise of its rights under this clause shall not preclude the associated occurrences of unperformed work or unsatisfactory work, regardless of whether deductions were taken from being grounds for termination for default in accordance with the clause 52.249-8, Default (Fixed Price Supply and Service) and/or Clause 52.249-10, Default (Fixed Price Construction) in Section I.

E.4 CONTRACTORS SELF- EVALUATION OF PERFORMANCE

Contractor's Self-evaluation of Performance shall be submitted by the 10th working day of each month along with the contractor's properly certified invoice, complete with backup and analyses for all firm fixed price and IDIQ work completed in performance of this contract. This includes computing deductions taken from firm fixed price work Schedule of Deductions. The Government in its evaluation will consider the Contractor's self-evaluation.

E.5 PERFORMANCE EVALUATION MEETINGS

The Contractor shall meet with the Government on a monthly basis to discuss the contractor's prior month performance. The Contractor's Self-evaluation of Performance will be assessed by the Contracting Officer, the Contracting Officer's Technical Representative (COTR), and the Government Quality Assurance Evaluators (QAE). A mutual effort will be made to resolve all problems identified. The Performance Evaluation Meeting and performance results will be determined before monthly invoices are paid. The Contractor's representative and the Government's representative shall sign the written minutes of these meetings, prepared by the Government. Should the Contractor not concur with the minutes, the Contractor shall state, in writing to the Contracting Officer, any areas of disagreement within five (5) working days.

E.6 ALTERNATE DISPUTES RESOLUTION

Notwithstanding the provisions of the clause entitled "Disputes" of this contract, no claim shall be submitted for monthly contract adjustments made pursuant to the "Consequences of Contractor's Failure to Perform Required Services" clauses in Section E.2 and E.3 that in the aggregate for each month do not exceed $10,000. These adjustments shall be considered final and not subject to the "Disputes" clause of this contract.

The Government and Contractor will develop, after contract award, a mutually acceptable alternative for resolving disputes that may arise during the performance of this contract.

E.7 PERFORMANCE REQUIREMENTS SUMMARY (PRS)

The contract requirements listed in the Performance Requirements Summary (see Exhibit G) summarize specific firm fixed price tasks that are to be performed under this contract, and include:

Work Requirements. A series of subtasks associated with each particular Contract Requirement are listed in column 3 of the PRS.

Weight. The value of each Work Requirement is specified as a percentage of the Contract Requirement with which it is associated in column (4) of the PRS. The percentages are based on judgment, taking into account both the costs incurred by the Contractor in carrying out a particular Work Requirement and the detriment to the Government if the Work Requirement is not satisfied. The Weight compared with the accepted line item unit prices provided in the Schedule of Deductions, will be the primary basis for deducting for partially performed, unsatisfactorily performed and non-performed work.

Maximum Allowable Defect Rate (MADR). The MADR for each Work Requirement is identified in column (4a) of the PRS. The MADR is the defect rate for a monthly population of services which, when exceeded, indicates that the Contractor's quality control is unsatisfactory. The MADR does not represent a threshold for payment deductions. Deductions may be taken for all defects (with appropriate credit for rework) regardless of whether the MADR was exceeded. The MADR is expressed as a percentage of the total population per month or as a number of defects per month.

Standard of Performance. The Standard of Performance for each Work Requirement is identified in column (5) of the PRS with a reference to the respective paragraph in Section C that specifies in detail the work to be performed.

E.8 SCHEDULE OF DEDUCTIONS

The established Schedule of Deductions is at Exhibit I. Unit prices listed will be utilized in calculating deductions pursuant to E.2, "Consequences of Contractor's Failure to Perform Required Services for Firm Fixed Price Work." At contract award, the total annual firm fixed price specified in each Schedule of Deductions shall equal the total annual price for firm fixed price work in the corresponding Price Schedule. Adjustments to the contract value as a result of contract modifications may not warrant an adjustment to this schedule.

SECTION F - DELIVERIES OR PERFORMANCE

F.1 PERIOD OF PERFORMANCE

a. The period of performance of this contract shall be 24 months from the effective date of the contract.

b. The period of performance for each of the three option periods shall be 12 months. In the event the Government elects to exercise its option(s) pursuant to the terms of this contract, Paragraph a. above will be adjusted accordingly.

F.2 PLACE(S) OF PERFORMANCE (LaRC 52.211-98) (OCT 1992)

The place(s) of performance shall be:

NASA, Langley Research Center, Hampton, Virginia; and other sites as may be designated by Work or Service Request (WSR).

SECTION G - CONTRACT ADMINISTRATION DATA

G.1 TECHNICAL DIRECTION (NASA 1852.242-70) (SEP 1993)

(a) Performance of the work under this contract is subject to the written technical direction of the Contracting Officer's Technical Representative (COTR), who shall be specifically appointed by the Contracting Officer in writing in accordance with NASA FAR Supplement 18-42.270. "Technical direction" means a directive to the Contractor that approves approaches, solutions, designs, or refinements; fills in details or otherwise completes the general description of work or documentation items; shifts emphasis among work areas or tasks; or furnishes similar instruction to the Contractor. Technical direction includes requiring studies and pursuit of certain lines of inquiry regarding matters within the general tasks and requirements in Section C of this contract.

(b) The COTR does not have the authority to, and shall not, issue any instructions purporting to be technical direction that -

(1) Constitutes an assignment of additional work outside the statement of work;

(2) Constitutes a change as defined in the changes clause;

(3) In any manner causes an increase or decrease in the total estimated contract cost, the fixed fee (if any), or the time required for contract performance;

(4) Changes any of the expressed terms, conditions, or specifications of the contract; or

(5) Interferes with the Contractor's rights to perform the terms and conditions of the contract.

(c) All technical direction shall be issued in writing by the COTR.

(d) The Contractor shall proceed promptly with the performance of technical direction duly issued by the COTR in the manner prescribed by this clause and within the COTR's authority. If, in the Contractor's opinion, any instructions or direction by the COTR falls within any of the categories defined in paragraph (b) above, the Contractor shall not proceed but shall notify the Contracting Officer in writing within 5 working days after receiving it and shall request the Contracting Officer to take action as described in this clause. Upon receiving this notification, the Contracting Officer shall either issue an appropriate contract modification within a reasonable time or advise the Contractor in writing within 30 days that the instruction or direction is -

(1) Rescinded in its entirety; or

(2) Within the requirements of the contract and does not constitute a change under the changes clause of the contract and that the Contractor should proceed promptly its performance.

(e) A failure of the Contractor and Contracting Officer to agree that the instruction or direction is both within the requirements of the contract and does not constitute a change under the changes clause, or a failure to agree upon the contract action to be taken with respect to the instruction or direction shall be subject to the Disputes clause of this contract.

(f) Any action(s) taken by the Contractor in response to any direction given by any person other than the Contracting Officer or the COTR shall be at the Contractor's risk.

G.2 LIST OF INSTALLATION-ACCOUNTABLE PROPERTY AND SERVICES (NASA 18-52.245-77) (JUL 1997)

In accordance with the clause at 1852.245-71, Installation-Accountable Government Property, the Contractor is authorized use of the types of property and services listed below, to the extent they are available, in the performance of this contract within the physical borders of the installation which may include buildings and space owned or directly leased by NASA in close proximity to the installation, if so designated by the Contracting Officer.

(a) Office space, work area space, and utilities. Government telephones are available for official purposes only.

(b) General- and special-purpose equipment, including office furniture.

(1) Equipment to be made available is listed in Attachment J-C3. The Government retains accountability for this property under the clause at 1852.245-71, Installation-Accountable Government Property, regardless of its authorized location.

(2) If the Contractor acquires property, title to which vests in the Government pursuant to other provisions of this contract, this property also shall become accountable to the Government upon its entry into Government records as required by the clause at 1852.245-71, Installation-Accountable Government Property.

(3) The Contractor shall not bring to the installation for use under this contract any property owned or leased by the Contractor, or other property that the Contractor is accountable for under any other Government contract, without the Contracting Officer's prior written approval.

(c) Supplies from store stock: Not Available.

(d) Publications and blank forms stocked by the installation.

(e) Safety and fire protection for on-site Contractor personnel and facilities.

(f) Medical treatment of a first-aid nature for Contractor personnel injuries or illnesses sustained during on-site duty.

(g) Cafeteria privileges for Contractor employees during normal operating hours.

(h) Building maintenance for facilities occupied by Contractor personnel.

(i) Moving and hauling for office moves, and delivery of supplies. Moving services shall be provided on-site, as approved by the Contracting Officer.

(j) The user responsibilities of the Contractor are defined in paragraph (a) of the clause at 1852.245-71, Installation-Accountable Government Property.

G.3 PROVIDING FACILITIES TO CONTRACTORS (LaRC 52.245-90) (AUG 1997)

A. In accordance with FAR 45.302-1, it is policy of the Government that Contractors shall furnish all facilities required for performing Government contracts. "Facilities" include real property and plant equipment including personal property such as general purpose off-the-shelf equipment, machine tools, test equipment, furniture and vehicles. "Facilities" do not include material, special test equipment, special tooling or agency-peculiar property.

B. In keeping with the policy set forth in FAR 45.302-1, the Government will not provide NEW "facilities," except as provided for in the Statement of Work.

C. However, the Government will provide EXISTING facilities as listed in G.2 and Attachments J-C2 and J-C3. Any of these existing facilities that reach the end of their useful life during the contract period, or which are beyond economical repair, shall be replaced by the Contractor, if the facilities are still needed for contract performance.

G.4 RESERVED

G.5 INVOICES AND PAYMENTS

A. Proper invoices, as determined under the Section I clause entitled, "Prompt Payment," shall be submitted by the 10th working day of each month to the designated payment office shown in Block 25 on Page 1 of this contract. An information copy, accompanied with a copy of the Contractor's Self-Evaluation of Performance (See E.4), shall be furnished to the Contracting Officer and the Contracting Officer's Technical Representative.

B. The following information shall be provided on all invoices:

Company name and address
Contract Number
Invoice Number
Performance period covered
Fixed Price Work: 1/12 of the annual fixed price for recurring work
Fixed Price Work Offset
Trouble Call Work: 1/12 of the annual fixed price for trouble calls
Number of trouble calls completed during the period
Trouble Call Work Offset
IDIQ Work: Itemize work by WSR for completed and accepted work during the period

C. The Contractor will be paid monthly 1/12 of the annual fixed price for recurring work and 1/12 of the annual fixed price for trouble calls, minus any deductions made by the Government pursuant to Clause E.2, Consequences of Contractor's Failure to Perform Required Services for FFP work. Deductions for nonconforming work will be taken on a monthly basis from the Contractor's invoice. Payments may be offset for satisfactory re-performance for which deductions were made under previous

invoices. Include supporting documentation to validate offsets. The Contractor's self-evaluation will be considered by the Government in its monthly evaluation of nonconforming work.

D. The Contractor shall be paid monthly for completed and accepted IDIQ work as ordered through Work/Service Requests (WSRs), minus any deductions made by the Government pursuant to Clause E.2, Consequences of Contractor's Failure to Perform Required Services for IDIQ work.

E. Payments of award fee shall be made in response to and in the amount of the Contracting Officer's written Notice of Award Fee. Payments of award fee are subject to the withholding provisions of the Section I clause entitled "Award Fee". No provisional award fee payments will be made under this contract.

SECTION H - SPECIAL CONTRACT REQUIREMENTS

H.1 RIGHTS TO PROPOSAL DATA (TECHNICAL) (FAR 52.227-23) (JUN 1987)

Except for data contained on pages _____, it is agreed that as a condition of award of this contract, and notwithstanding the conditions of any notice appearing thereon, the Government shall have unlimited rights (as defined in the "Rights in Data - General" clause contained in this contract) in and to the technical data contained in the proposal dated _____, upon which this contract is based.

H.2 LIMITATION OF FUNDS (FIXED-PRICE CONTRACT) (NASA 18-52.232-77) (MAR 1989)

(a) Of the total price of items identified in Section B.5, the sum of $_____ for firm fixed price work and $_____ for indefinite quantity work is presently available for payment and allotted to this contract. It is anticipated that from time to time additional funds will be allocated to the contract on a quarterly basis, until the total price of said items is allotted.
(b) The Contractor agrees to perform or have performed work on the contract as specified in paragraph (a) above up to the point at which, if this contract is terminated pursuant to the Termination for Convenience of the Government clause of this contract, the total amount payable by the Government (including amounts payable for subcontracts and settlement costs) pursuant to paragraphs (f) and (g) of that clause would, in the exercise of reasonable judgment by the Contractor, approximate the total amount at the time allotted to the contract. The Contractor is not obligated to continue performance of the work beyond such point. The Government is not obligated in any event to pay or reimburse the Contractor more than the amount from time to time allotted to the contract, anything to the contrary in the Termination for Convenience of the Government clause notwithstanding.
(c)(1) It is contemplated that funds presently allotted to this contract will cover the work to be performed until _____. (2) If funds allotted are considered by the Contractor to be inadequate to cover the work to be performed until that date, or an agreed date substituted for it, the Contractor shall notify the Contracting Officer in writing when within the next 60 days the work will reach a point at which, if the contract is terminated pursuant to the Termination for Convenience of the Government clause of this contract, the total amount payable by the Government (including amounts payable for subcontracts and settlement costs) pursuant to paragraphs (f) and (g) of that clause will approximate 75 percent of the total amount then allotted to the contract. (3)(i) The notice shall state the estimated date when the point referred to in subparagraph (2) above will be reached and the estimated amount of additional funds required to continue performance to the date specified in subparagraph (1) above, or an agreed date substituted for it. (ii) The Contractor shall, 60 days in advance of the date specified in subparagraph (1) above, or an agreed date substituted for it, advise the Contracting Officer in writing as to the estimated amount of additional funds required for the timely performance of the contract for a further period as may be specified in the contract or otherwise agreed to by the parties. (4) If, after the notification referred to in subdivision (3)(ii) above, additional funds are not allotted by the date specified in subparagraph (1) above or an agreed date substituted for it, the Contracting Officer shall, upon the Contractor's written request, terminate this contract on that date or on the date set forth in the request, whichever is later, pursuant to the Termination for Convenience of the Government clause.
(d) When additional funds are allotted from time to time for continued performance of the work under this contract, the parties shall agree on the applicable period of contract performance to be covered by

these funds. The provisions of paragraphs (b) and (c) above shall apply to these additional allotted funds and the substituted date pertaining to them, and the contract shall be modified accordingly.

(e) If, solely by reason of the Government's failure to allot additional funds in amounts sufficient for the time by performance of this contract, the Contractor incurs additional costs or is delayed in the performance of the work under this contract, and if additional funds are allotted, an equitable adjustment shall be made in the price or prices (including appropriate target, billing, and ceiling prices where applicable) of the items to be delivered, or in the time of delivery, or both.

(f) The Government may at any time before termination, and, with the consent of the Contractor, after notice of termination, allot additional funds for this contract.

(g) The provisions of this clause with respect to termination shall in no way be deemed to limit the rights of the Government under the default clause of this contract. The provisions of this Limitations of Funds clause are limited to the work on and allotment of funds for the contract set forth in paragraph (a) above. This clause shall become inoperative upon the allotment of funds for the total price of said work except for rights and obligations then existing under this clause.

(h) Nothing in this clause shall affect the right of the Government to terminate this contract pursuant to the Termination for Convenience of the Government clause of this contract.

H.3 STATEMENT OF EQUIVALENT RATES FOR FEDERAL HIRES (FAR 52.222-42) (MAY 1989)

In compliance with the Service Contract Act of 1965, as amended, and the regulations of the Secretary of Labor (29 CFR Part 4), this clause identifies the classes of service employees expected to be employed under the contract and states the wages and fringe benefits payable to each if they were employed by the contracting agency subject to the provisions of 5 U.S.C. 5341 or 5332.

THIS STATEMENT IS FOR INFORMATION ONLY: IT IS NOT A WAGE DETERMINATION

Employee Class	Monetary Wage
Asbestos Worker	$ 9.73
Asphalt Worker	12.21
Backhoe Operator	13.46
Bricklayer (Mason)	14.09
Carpenter	13.46
Concrete Worker	12.83
Crane Mechanic	14.72
Drywall Finisher/Taper	13.46
Drywall Installer	13.46
Electrician, Fire Alarm Systems	18.55
Electrician, High Voltage	18.55
Electrician	18.55
Electronics Technician	18.55
Elevator Mechanic	13.46
Fire Sprinkler Technician	16.89
Front End Loader Operator	13.46
HVAC Mechanic	14.72
HVAC Technician	16.89
Insulator/Coverar	12.83
Laborer	9.73
Machinist	18.55
Machinist, Precision/Repairman	16.89
Millwright	14.09
Operator, Boiler	14.09

Oxygen Cleaning Technician	14.09
Painter, Maintenance	13.46
Pipefitter, Maintenance	14.09
Power Equipment Operator, Crane	14.72
Rigger, Maintenance	14.09
Roofer	13.46
Sheet Metal Worker	14.72
Engineer, Steam Stationary	16.89
Drafter 1	8.03
Plant Technician	16.89
Specialist, Water Treatment	13.46
Steamfitter	16.89
Person, Utility	6.55
Mechanic	16.89

FRINGE BENEFITS

Annual Leave - Receives 13 days paid leave for service up to 3 years; 20 days for 3 to 15 years service; and 26 days for 15 years service or over.

Sick Leave - Receives 13 days paid leave per year.

Holidays - Receives 10 paid holidays per year.

Health Insurance - Government pays up to 60% of health insurance.

Group Life Insurance - Government pays two-thirds of life insurance rate premiums.

Retirement - The Government provides three retirement plans identified as the Civil Service Retirement System (CSRS), the Federal Employees Retirement System (FERS), and the CSRS Offset. Under the CSRS, the Government contributes 7% of the employees' base pay towards the retirement benefit and 1.45% towards Medicare. Under the FERS, the Government contributes 11.4% of the employees' base pay towards a basic benefit plan, 6.2% to Social Security, 1.45% towards Medicare, and 1% (plus matching contributions of up to 4% of basic pay, depending on employees' contributions) to a thrift savings plan. Under the CSRS Offset, the Government contributes 0.8% of the employees' base pay towards the retirement benefit, 6.2% to Social Security, and 1.45% towards Medicare.

Part-time Federal employees receive pro rata annual leave, sick leave, holiday leave, health insurance, and group life insurance benefits based on the number of hours worked.

H.4 CONTRACTOR EMPLOYEE'S SECURITY CLEARANCE (LaRC 52.204-90) (OCT 1996)

By virtue of their particular work assignment, certain Contractor employees, may be required to have a security clearance granted in accordance with the National Industry Security Program Operating Manual (NISPOM) dated March 14, 1996. Clearances will be issued by the Department of Defense (DOD). Within 10 working days after an employee is identified by the Government and/or the Contractor as requiring a SECRET or higher clearance, the Contractor shall submit to the Contracting Officer evidence of the submittal of a request for clearance to DOD for such employee. If the clearance for an

employee has not been issued by DOD within 120 calendar days of the submittal of the request for clearance to DOD, the Contractor may be required to remove the employee from the contract.

H.5 SECURITY PROGRAM/FOREIGN NATIONAL EMPLOYEE INVESTIGATIVE REQUIREMENTS (LaRC 52.204-91) (AUG 1997)

Prior to reporting to Langley Research Center (LaRC) to perform under a contract or grant, each Foreign National shall have approval for access to LaRC facilities from NASA Headquarters, Office of Space Science and Aeronautics (Code IS). A copy of the access authorization request shall be provided to the LaRC Chief of Security. Additionally, an investigation by the Government shall be completed on each Foreign National contractor prior to reporting to LaRC to perform under a contract or grant. A properly executed "Name Check Request" (NASA Form 531) and a completed "applicant" fingerprint card shall be submitted to the LaRC Security Office, Mail Stop 450, for each Foreign National contractor at least 75 days prior to the estimated entry on duty date. The NF 531 and fingerprint card may be obtained from the LaRC Security Office. If the access approval is obtained from NASA Headquarters prior to completion of the investigation, and the Contracting Officer requires a Foreign National to work on LaRC, an escort request may be considered by the LaRC Chief of Security.

H.6 WORK SCHEDULE--ON-SITE ONLY (LaRC 52.211-103) (JUL 1991)

In order that the necessary and proper inspection of the Contractor's work may be effectively accomplished, and to assure the availability of required Government interface, the Contractor shall schedule work performance hereunder so as to be compatible with the established workweek and hours of work observed by the Government organization having cognizance over the work being performed, which is 7:00 a.m. to 4:30 p.m., Monday through Friday.

H.7 OBSERVATION OF REGULATIONS AND IDENTIFICATION OF CONTRACTOR'S EMPLOYEES--ALTERNATE I (LaRC 52.211-104) (AUG 1998)

A. Observation of Regulations--In performance of that part of the contract work which may be performed at Langley Research Center or other Government installation, the Contractor shall require its employees to observe the rules and regulations as prescribed by the authorities at Langley Research Center or other installation including all applicable Federal, NASA and Langley or other local installation safety, health, environmental and security regulations.

B. Identification Badges--At all times while on LaRC property, the Contractor shall require its employees, subcontractors and agents to wear badges which will be issued by the NASA Contract Badge and Pass Office, located at 1 Langley Boulevard (Building No. 1228). Badges shall be issued only between the hours of 6:30 a.m. and 4:30 p.m., Monday through Friday. Contractors will be held accountable for these badges and may be required to validate outstanding badges on an annual basis with the NASA LaRC Security Office. Immediately after employee termination or contract completion, badges shall be returned to the NASA Contract Badge and Pass Office.

H.8 QUALITY SYSTEM REQUIREMENTS (ISO9002)

The Contractor's quality system shall be compliant with the requirements of ANSI/ISO/ASQC Q9002 – 1994, Quality Systems-Model for Quality Assurance in Production, Installation, and Servicing. In the event the Contractor's quality system is not already compliant with the requirements of ANSI/ISO/ASQC Q9002 – 1994, the contractor shall develop quality system procedures and associated documentation to become compliant within 9 months after the contract effective date. The contractor's quality system shall remain in compliance with ANSI/ISO/ASQC Q9002 – 1994 during the contract term. The Government reserves the right to audit the Contractor's quality system at any time.

NOTE: Compliance achievement will be evaluated in second award fee evaluation during the first contract year.

H.9 INCORPORATION OF SECTION K OF THE PROPOSAL BY REFERENCE (LaRC 52.215-107) (JUN 1998)

Pursuant to FAR 15.204-1(b), the completed Section K of the proposal dated _____ is hereby incorporated herein by reference.

H.10 ADVANCE APPROVAL FOR RELEASE OF TECHNICAL INFORMATION (LaRC 52.227-92) (JUL 1998)

The Contractor shall not release technical information based on or containing data first produced in the performance of this contract and describing the work performed under this contract unless prior written approval is given by NASA. The Contractor shall submit technical information regarding the contract effort, such as journal articles, meeting papers, and technical documents to the Contracting Officer's Technical Representative (COTR) for review and concurrence with approval by the Center Export Administrator or designee prior to publication, presentation or release to others. The Contractor may proceed upon receipt of written concurrence by the COTR, unless directed otherwise in the COTR concurrence letter.

H.11 RESERVED

H.12 YEAR 2000 COMPLIANCE (MAY 1998)

(a) Definition: "Year 2000 compliant", as used in this clause, means that the Information Technology (IT) (hardware, software and firmware, including embedded systems or any other electro-mechanical or processor-based systems used in accordance with its associated documentation) accurately processes date and date-related data (including, but not limited to, calculating, comparing, and sequencing) from, into, and between the twentieth and twenty-first centuries, and the years 1999 and 2000 and leap year calculations, to the extent that other information technology, used in combination with the information technology being acquired, properly exchanges date and date-related data with it.

(b) Any IT provided or maintained under this contract must be Year 2000 compliant. To ensure this result, the Contractor shall provide documentation describing how the IT items demonstrate Year 2000 compliance.

Documentation and testing for Year 2000 compliance shall be based on complexity and the risk associated with the IT item. The Contractor shall use the documents "NASA Year 2000 Agency Test and Certification Guidelines and Requirements" dated July 2, 1998 (available at http://cio.larc.nasa.gov/y2k/) and "NASA LaRC Y2K Guideline for Documentation and Testing Requirements" (Exhibit F) as guidance to establish the appropriate testing and documentation. The Contractor shall provide the "Contractor Y2K Compliance Verification Form" (Exhibit F) for each IT item/system provided or maintained under this contract.

(c) The Contractor warrants that any IT items or services provided under this contact that involve the processing of date and date-related data are Year 2000 compliant. If the contract requires that specific listed products must perform as a system in accordance with the foregoing warranty, then that warranty shall apply to those listed products as a system.

(d) The remedies available under this warranty shall include repair or replacement, at no additional cost to the Government, of any provided items or services whose non-compliance is discovered and made known to the Contractor in writing within 90 days after acceptance. In addition, all other the terms and limitations of the Contractor's standard commercial warranty or warranties shall be available to the Government for the IT items or services acquired under this contract. Nothing in this warranty shall be construed to limit any rights or remedies the Government may otherwise have under this contract with respect to defects other than Year 2000 performance.

H.13 VARIATION IN QUANTITY - TROUBLE CALLS

A. If the furnished or delivered quantity of Trouble Calls (TCs) varies on an annual basis more than 10 percent above or below the 11,000 number of TCs per year, negotiations for an equitable adjustment in the contract price may be initiated by either party. The equitable adjustment shall be based upon any increase or decrease in costs above 110 percent or below 90 percent of the number of TCs specified. An issued TC shall not be counted against the specified quantity of TCs until it is satisfactorily performed.

B. For purposes of determining the applicability of this clause, there shall not be included in the count of Trouble Calls performed: (1) any services or items which the Contractor is required to provide to remedy the consequences of any act or omission on the part of the Contractor, its agents, employees, or subcontractors; (2) any services which the Contractor performs or delivers in order to support its own operations (rather than satisfy the requirements of this contract); or (3) any services which do not conform to the applicable quality standards set forth in the statement of work in Section C (also see the "Consequences of Contractor's Failure to Perform Required Services" clause in Section E).

C. Within 30 working days after the end of a contract year, the Contractor shall submit a proposal comparing furnished or delivered quantities that deviate from the above number of TCs with the associated price impact, if any. Adjustment to the contract price shall be made annually and only for that portion of any increase or decrease in the total cost which exceeds 10 percent for TCs for that contract year. The price adjustment shall be determined by multiplying the TCs outside the 10% accepted variation by the annual average TC cost. (Annual TC cost divided by 11,000 equals annual average TC cost).

H.14 VARIATION IN QUANTITY – PREVENTIVE MAINTENANCE (PM)

The required PM program requirements are set forth in Section C. It is expected that changes will occur to the PM program requirements over the term of the contract. The Government will provide revised PM program requirements to the contractor whenever such changes occur. If the net cost impact of these changes exceeds $50,000 annually, either the Government or the contractor will be entitled to an equitable adjustment in the firm-fixed-price set forth in B-5. Any such equitable adjustment will be for the negotiated net cost impact less $50,000. The Contractor must assert any claim for equitable adjustment under this clause by submitting a proposal within 30 days after the end of a contract year. This proposal shall detail the hours and materials for both the increases and the decreases in effort and shall apply the unit price labor rates and material and equipment burden rates set forth in Section B, Price Schedule, for the appropriate period. The Contractor agrees to prepare an equitable adjustment proposal as set forth above when requested by the Government. Notwithstanding the above, any Contractor initiated savings in recurring costs submitted in the annual work plan will be handled in accordance with Section C.8.b.(d).

H.15 PARTNERING

(a) The terms "partnering" and "partnership" used herein shall mean a relationship of open communications and close cooperation of all parties. There is no intent to create a legal relationship nor a contractual commitment. Partnering will be totally voluntary; however, once an arrangement is agreed upon, commitment to its success is essential.

(b) NASA intends to facilitate contract management by encouraging the foundation of a cohesive partnership with the Contractor, its subcontractors, and NASA's contract management staff. This partnership will be structured to draw on the strengths of each organization to identify and achieve reciprocal goals.

(c) To implement the partnership relationship, it is anticipated that during the phase-in period the prime Contractor's key personnel, subcontractors key personnel and NASA will attend a partnership development and team building workshop. Follow-up team building workshops will be held periodically

throughout the duration of the contract as agreed to by the Contractor and NASA. All cost for activity outside the personnel cost within this fixed price contract will be borne by the Government.

H.16 UNESCORTED ACCESS BY CONTRACTOR EMPLOYEES

Background investigations are required for Contractor employees to have unescorted access to the Langley Research Center. All Contractor employees must as a minimum have a favorably adjudicated National Agency Check (NAC). The NAC is not required if the Contractor can certify that an employee has a Confidential or higher security clearance or a favorably adjudicated current investigation. When it is necessary for an employee to perform work prior to completion of the NAC, the employee may be escorted while at the site by an individual who has a favorable NAC or a higher level of investigation favorably adjudicated, or a Confidential or higher level security clearance or as otherwise approved by the LaRC Security Officer.

H.17 SMALL DISADVANTAGED BUSINESS PARTICIPATION--CONTRACT TARGETS (LaRC 52.219-91) (JAN 1999)

(a) This clause does not apply to, and should not be completed by, Small Disadvantaged Business (SDB) offerors unless the SDB offeror has waived the price adjustment evaluation adjustment {see paragraph (c) of FAR clause 52.219-23.}

(b) FAR 19.1202-4(a) requires that SDB participation targets be incorporated in the contract.

(i) If the prime offeror is an SDB (including joint venture partners and team members) that has waived the price evaluation adjustment, the target for the work it intends to perform as a prime contractor in authorized SIC Major Groups, as determined by the Department of Commerce (DOC), is as follows:

	Dollars	Percent of Contract Value
1. Basic Year 1		
2. Basic Year 2		
3. Option Year 1		
4. Option Year 2		
5. Option Year 3		

(ii) Targets for SDB participation as subcontractors in authorized SIC Major Groups, as determined by the DOC, are as follows:

	DOC Major SIC Group	Dollar Target	Percent of Contract Value
1. Basic Year 1			
	Total		

2. Basic Year 2

Total

3. Option Year 1

Total

4. Option Year 2

Total

5. Option Year 3

Total

(c) FAR 19.1202-4(b) requires that SDB concerns that are specifically identified by the offeror be listed in the contract when the extent of the identification of such subcontractors was part of the SDB evaluation subfactor. SDB concerns (subcontractors) specifically identified by the offeror are as follows:

Names of Concerns

_____

_____

_____

_____

The contractor shall notify the Contracting Officer of any substitution of firms that are not SDB concerns.

H.18 RIGHTS IN DATA

Unlimited rights as used in this clause means that the Government has the right to use, disclose, reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, in any manner and for any purpose, and to have or permit others to do so. The Government shall have unlimited rights in-

(a) all data input into the Computerized Maintenance Management System;

(b) data first produced in the performance of this contract; and

(c) all data identified as a deliverable under this contract or delivered under this contract.

PART II - CONTRACT CLAUSES

SECTION I - CONTRACT CLAUSES

I.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE APPLICABLE TO ENTIRE CONTRACT

FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1) CLAUSES

CLAUSE NUMBER	TITLE AND DATE
52.202-1	Definitions (OCT 1995)
52.203-3	Gratuities (APR 1984)
52.203-5	Covenant Against Contingent Fees (APR 1984)
52.203-6	Restrictions on Contractor Sales to the Government (JUL 1995)
52.203-7	Anti-Kickback Procedures (JUL 1995)
52.203-10	Price or Fee Adjustment for Illegal or Improper Activity (JAN 1997)
52.204-4	Printing/Copying Double-Sided on Recycled Paper (JUN 1996)
52.209-6	Protecting the Government's Interest when Subcontracting with Contractors Debarred, Suspended, or Proposed for Debarment (JUL 1995)
52.211-5	Material Requirements (OCT 1997)
52.211-15	Defense Priority and Allocation Requirements (SEP 1990)
52.215-2	Audit and Records--Negotiation (AUG 1996)
52.215-8	Order of Precedence--Uniform Contract Format (OCT 1997)
52.215-11	Price Reduction for Defective Cost or Pricing Data-- Modifications (OCT 1997)
52.215-13	Subcontractor Cost or Pricing Data--Modifications(OCT 1997)
52.215-14	Integrity of Unit Prices (OCT 1997)
52.215-15	Pension Adjustments and Asset Reversions ((DEC 1998)
52.215-17	Waiver of Facilities Capital Cost of Money (OCT 1997)
52.215-18	Reversion Or Adjustment Of Plans For Postretirement Benefits (PRB) Other Than Pensions (OCT 1997)
52.215-19	Notification of Ownership Changes (OCT 1997)
52.215-21	Requirements For Cost or Pricing Data or Information Other Than Cost or Pricing Data--Modifications (OCT 1997)
52.219-8	Utilization of Small Business Concerns (JAN 1999)
52.219-9	Small Business Subcontracting Plan (JAN 1999) Alternate II (JAN 1999)
52.219-16	Liquidated Damages - Subcontracting Plan (JAN 1999)
52.222-1	Notice to the Government of Labor Disputes (FEB 1997)
52.222-3	Convict Labor (AUG 1996)
52.222-4	Contract Work Hours and Safety Standards Act - Overtime Compensation (JUL 1995)
52.222-26	Equal Opportunity (FEB1999)
52.222-35	Affirmative Action for Disabled Veterans and Veterans of the Vietnam Era (APR 1998)
52.222-36	Affirmative Action for Workers with Disabilities (JUN 1998)
52.222-37	Employment Reports on Disabled Veterans and Veterans of the Vietnam Era (JAN 1999)

CLAUSE NUMBER	TITLE AND DATE
52.222-43	Fair Labor Standards Act And Service Contract Act - Price Adjustment (Multiple Year And Option Contracts) (MAY 1989)
52.222-50	Nondisplacement of Qualified Workers (AUG 1997)
52.223-2	Clean Air and Water (APR 1984)
52.223-4	Recovered Material Certification (OCT 1997)
52.223-5	Pollution Prevention and Right-To-Know Information (APR 1998)
52.223-6	Drug-Free Workplace (JAN 1997)
52.223-9	Certification and Estimate of Percentage of Recovered Material Content for EPA Designated Items (OCT 1997)
52.223-10	Waste Reduction Program (OCT 1997)
52.223-11	Ozone-Depleting Substances (JUN 1996)
52.223-12	Refrigeration Equipment and Air Conditioners (MAY 1995)
52.223-14	Toxic Chemical Release Reporting (OCT 1996)
52.225-3	Buy American Act - Supplies (JAN 1994)
52.225-11	Restrictions on Certain Foreign Purchases (AUG 1998)
52.227-1	Authorization and Consent (JUL 1995)
52.227-2	Notice and Assistance Regarding Patent and Copyright Infringement (AUG 1996)
52.227-3	Patent Indemnity (APR 1984)
52.228-5	Insurance--Work on a Government Installation (JAN 1997)
52.229-3	Federal, State, and Local Taxes (JAN 1991)
52.229-5	Taxes - Contracts Performed in U.S. Possessions or Puerto Rico (APR 1984)
52.230-2	Cost Accounting Standards (APR 1998)
52.230-6	Administration of Cost Accounting Standards (APR 1996)
52.232-1	Payments (APR 1984)
52.232-8	Discounts For Prompt Payment (MAY 1997)
52.232-9	Limitation on Withholding of Payment (APR 1984)
52.232-17	Interest (JUN 1996)
52.232-23	Assignment of Claims (JAN 1986)
52.232-33	Mandatory Information for Electronic Funds Transfer Payment (AUG 1996)
52.233-1	Disputes (DEC 1998)--Alternate I (DEC 1991)
52.233-3	Protest After Award (AUG 1996)
52.237-2	Protection of Government Buildings, Equipment, and Vegetation (APR 1984)
52.237-3	Continuity of Services (JAN 1991)
52.242-14	Suspension Of Work (APR 1984)
52.242-15	Stop-Work Order (AUG 1989)
52.243-1	Changes--Fixed Price (AUG 1987)--Alternate II (APR 1984)
52.245-1	Property Records (APR 1984)
52.245-2	Government Property (Fixed-Price Contracts) (DEC 1989) Alternate I (APR 1984)
52.246-2	Inspection of Supplies--Fixed-Price (AUG 1996)
52.246-4	Inspection of Services--Fixed-Price (AUG 1996)
52.246-13	Inspection - Dismantling, Demolition, Or Removal Of Improvements (APR 1984)
52.246-16	Responsibility for Supplies (APR 1984)
52.246-23	Limitation of Liability (FEB 1997)
52.246-25	Limitation of Liability--Services (FEB 1997)
52.249-2	Termination for Convenience of the Government (Fixed-Price) (SEP 1996)
52.249-8	Default (Fixed-Price Supply and Service) (APR 1984)
52.249-14	Excusable Delays (APR 1984)

CLAUSE NUMBER	TITLE AND DATE
52.253-1	Computer Generated Forms (JAN 1991)

NASA FAR SUPPLEMENT (48 CFR CHAPTER 18) CLAUSES

CLAUSE NUMBER	TITLE AND DATE
1852.208-81	Restrictions On Printing And Duplicating (AUG 1993)
1852.219-74	Use of Rural Area Small Businesses (SEP 1990)
1852.219-75	Small, Small Business, and Women-Owned Small Business Subcontracting Reporting (JUL 1997)
1852.219-76	NASA 8 Percent Goal (JUL 1997)
1852.223-70	Safety and Health (MAR 1997)
1852.223-71	Frequency Authorization (DEC 1988)
1852.228-75	Minimum Insurance Coverage (OCT 1988)
1852.237-70	Emergency Evacuation Procedures (DEC 1988)
1852.243-71	Shared Savings (MAR 1997)
1852.245-71	Installation-Accountable Government Property (JUL 1998)-- Alternate I (JUN 1998) Paragraph (a) "User responsibilities in accordance with NASA Handbook NHB.4200.1, NASA Equipment Management Manual"

I.2 CLAUSES APPLICABLE TO TIME AND MATERIAL INDEFINITE QUANTITY WORK

52.232-7	Payments Under Time-and-Materials and Labor-Hour Contracts (FEB 1997)
52.243-3	Changes--Time-and-Materials or Labor-Hours (AUG 1987)
52.246-6	Inspection - Time-and-Material and Labor-Hour (JAN 1986)

I.3 CLAUSES APPLICABLE TO CONSTRUCTION WORK

CLAUSE NUMBER	TITLE AND DATE
52.222-6	Davis-Bacon Act (FEB 1995)
52.222-7	Withholding of Funds (FEB 1988)
52.222-8	Payrolls and Basic Records (FEB 1988)
52.222-9	Apprentices and Trainees (FEB 1988)
52.222-10	Compliance with Copeland Act Requirements (FEB 1988)
52.222-11	Subcontracts (Labor Standards) (FEB 1988)
52.222-12	Contract Termination - Debarment (FEB 1988)
52.222-13	Compliance with Davis-Bacon and Related Act Regulations (FEB 1988)
52.222-14	Disputes Concerning Labor Standards (FEB 1988)
52.222-15	Certification of Eligibility (FEB 1988)
52.222-27	Affirmative Action Compliance Requirements for Construction (APR 1984)
52.225-5	Buy American Act—Construction Materials (JUN 1997)
52.227-4	Patent Indemnity - Construction Contracts (APR 1984)
52.228-1	Bid Guarantee (SEP 1996) (Paragraph (c) insert "20%" and "$3,000,000."
52.228-2	Additional Bond Security (OCT 1997)
52.228-11	Pledges of Assets (FEB 1992)
52.228-12	Prospective Subcontractor Requests for Bonds (OCT 1995)
52.228-14	Irrevocable Letter of Credit (OCT 1997)
52.228-15	Performance and Payment Bonds—Construction (SEP 1996)
52.232-5	Payments under Fixed-Price Construction Contracts (MAY 1997)
52.232-27	Prompt Payment for Construction Contracts (JUN 1997) (Paragraph (a)(1)(i)(A) is modified to read "30 days.")
52.236-2	Differing Site Conditions (APR 1984)

CLAUSE NUMBER	TITLE AND DATE
52.236-3	Site Investigation and Conditions Affecting the Work (APR 1984)
52.236-5	Material and Workmanship (APR 1984)
52.236-6	Superintendent by the Contractor (APR 1984)
52.236-7	Permits and Responsibilities (NOV 1991)
52.236-8	Other Contracts (APR 1984)
52.236-9	Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements (APR 1984)
52.236-10	Operations and Storage Area (APR 1984)
52.236-11	Use and Possession Prior to Completion (APR 1984)
52.236-12	Cleaning Up (APR 1984)
52.236-13	Accident Prevention (NOV 1991)
52.236-15	Schedules for Construction Contracts (APR 1984)
52.236-21	Specifications and Drawings for Construction (FEB 1997)--Alternate I (APR 1984)
52.236-26	Preconstruction Conference (FEB 1995)
52.243-4	Changes (AUG 1987)
52.246-12	Inspection of Construction (AUG 1996)
52.246-21	Warranty of Construction (MAR 1994)--Alternate I (APR 1984)
52.248-3	Value Engineering—Construction (MAR 1989)
52.249-10	Default (Fixed-Price Construction) (APR 1984)
1852.209-72	Composition of the Contractor (DEC 1988)
1852.228-73	Bid Bond (OCT 1988)
1852.236-73	Hurricane Plan (DEC 1988)

I.4 NONDOMESTIC CONSTRUCTION MATERIALS (NASA 1852.225-71) (DEC 1988)

The requirements of the Buy American Act - Construction Materials clause do not apply to construction materials or their components as set forth below:

I.5 CLAUSES IN FULL TEXT APPLICABLE TO ENTIRE CONTRACT

The clauses listed below follow in full text:

52.252-2	Clauses Incorporated by Reference (FEB 1998)
52.203-8	Cancellation, Rescission, and Recovery of Funds for Illegal or Improper Activity (JAN 1997)
52.203-12	Limitation on Payments to Influence Certain Federal Transactions (JUN 1997)
52.216-18	Ordering (OCT 1995)
52.216-19	Order Limitations (OCT 1995)
52.216-22	Indefinite Quantity (OCT 1995)
52.217-9	Option to Extend the Term of the Contract (MAR 1989)
52.219-4	Notice of Price Evaluation Preference for HUBZone Small Business Concerns (JAN 1999)
52.219-23	Notice of Price Evaluation Adjustment for Small Disadvantaged Business Concerns (OCT 1998)
52.219-25	Small Disadvantaged Business Participation Program—Disadvantaged Status and Reporting (JAN 1999)
52.222-41	Service Contract Act of 1965, As Amended ((MAY 1989)
52.223-3	Hazardous Material Identification and Material Safety Data (JAN 1997)--Alternate I (JUL 1995)
52.232-25	Prompt Payment (JUN 1997)
52.242-13	Bankruptcy (JUL 1995)

52.244-6	Subcontracts for Commercial Items and Commercial Components (OCT 1998)
52.252-6	Authorized Deviations in Clauses (APR 1984)
1852.204-76	Security Requirements For Unclassified Automated Information Resources (SEP 1993)
1852.215-84	Ombudsman (OCT 1996)
1852.216-76	Award Fee For Service Contracts (MAR 1998)
1852.242-72	Observance of Legal Holidays (AUG 1992) Alternate I (SEP 1989)

I.6 CLAUSES INCORPORATED BY REFERENCE (FAR 52.252-2) (FEB 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

http://www.arnet.gov/far/

http://www.hq.nasa.gov/office/procurement/regs/nfstoc.htm

I.7 CANCELLATION, RESCISSION, AND RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY (FAR 52.203-8) (JAN 1997)

(a) If the Government receives information that a contractor or a person has engaged in conduct constituting a violation of subsection (a), (b), (c), or (d) of Section 27 of the Office of Federal Procurement Policy Act (41 U.S.C. 423) (the Act), as amended by section 4304 of the 1996 National Defense Authorization Act for Fiscal Year 1996 (Pub. L. 104-106), the Government may--

(1) Cancel the solicitation, if the contract has not yet been awarded or issued; or

(2) Rescind the contract with respect to which--

(i) The Contractor or someone acting for the Contractor has been convicted for an offense where the conduct constitutes a violation of subsection 27 (a) or (b) of the Act for the purpose of either--

(A) Exchanging the information covered by such subsections for anything of value; or

(B) Obtaining or giving anyone a competitive advantage in the award of a Federal agency procurement contract; or

(ii) The head of the contracting activity has determined, based upon a preponderance of the evidence, that the Contractor or someone acting for the Contractor has engaged in conduct constituting an offense punishable under subsections 27(e)(1) of the Act.

(b) If the Government rescinds the contract under paragraph (a) of this clause, the Government is entitled to recover, in addition to any penalty prescribed by law, the amount expended under the contract.

(c) The rights and remedies of the Government specified herein are not exclusive, and are in addition to any other rights and remedies provided by law, regulation, or under this contract.

I.8 LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (FAR 52.203-12) (JUN 1997)

(a) Definitions.

"Agency," as used in this clause, means executive agency as defined in 2.101.

"Covered Federal action," as used in this clause, means any of the following Federal actions:

(1) The awarding of any Federal contract.

(2) The making of any Federal grant.

(3) The making of any Federal loan.

(4) The entering into of any cooperative agreement.

(5) The extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

"Indian tribe" and "tribal organization," as used in this clause, have the meaning provided in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450B) and include Alaskan Natives.

"Influencing or attempting to influence," as used in this clause, means making, with the intent to influence, any communication to or appearance before an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any covered Federal action.

"Local government," as used in this clause, means a unit of government in a State and, if chartered, established, or otherwise recognized by a State for the performance of a governmental duty, including a local public authority, a special district, an intrastate district, a council of governments, a sponsor group representative organization, and any other instrumentality of a local government.

"Officer or employee of an agency," as used in this clause, includes the following individuals who are employed by an agency:

(1) An individual who is appointed to a position in the Government under Title 5, United States Code, including a position under a temporary appointment.

(2) A member of the uniformed services, as defined in subsection 101(3), Title 37, United States Code.

(3) A special Government employee, as defined in section 202, Title 18, United States Code.

(4) An individual who is a member of a Federal advisory committee, as defined by the Federal Advisory Committee Act, Title 5, United States Code, appendix 2.

"Person," as used in this clause, means an individual, corporation, company, association, authority, firm, partnership, society, State, and local government, regardless of whether such entity is operated for profit, or not for profit. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Reasonable compensation," as used in this clause, means, with respect to a regularly employed officer or employee of any person, compensation that is consistent with the normal compensation for such officer or employee for work that is not furnished to, not funded by, or not furnished in cooperation with the Federal Government.

"Reasonable payment," as used in this clause, means, with respect to professional and other technical services, a payment in an amount that is consistent with the amount normally paid for such services in the private sector.

"Recipient," as used in this clause, includes the Contractor and all subcontractors. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Regularly employed," as used in this clause, means, with respect to an officer or employee of a person requesting or receiving a Federal contract, an officer or employee who is employed by such person for at least 130 working days within 1 year immediately preceding the date of the submission that initiates agency consideration of such person for receipt of such contract. An officer or employee who is employed by such person for less than 130 working days within 1 year immediately preceding the date of the submission that initiates agency consideration of such person shall be considered to be regularly employed as soon as he or she is employed by such person for 130 working days.

"State," as used in this clause, means a State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, a territory or possession of the United States, an agency or instrumentality of a State, and multi-State, regional, or interstate entity having governmental duties and powers.

(b) Prohibitions. (1) Section 1352 of Title 31, United States Code, among other things, prohibits a recipient of a Federal contract, grant, loan, or cooperative agreement from using appropriated funds to pay any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered Federal actions: the awarding of any Federal contract; the making of any Federal grant; the making of any Federal loan; the entering into of any cooperative agreement; or the modification of any Federal contract, grant, loan, or cooperative agreement.

(2) The Act also requires Contractors to furnish a disclosure if any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid,

or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a Federal contract, grant, loan, or cooperative agreement.

(3) The prohibitions of the Act do not apply under the following conditions:

(i) Agency and legislative liaison by own employees.

(A) The prohibition on the use of appropriated funds, in subparagraph (b)(1) of this clause, does not apply in the case of a payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action if the payment is for agency and legislative liaison activities not directly related to a covered Federal action.

(B) For purposes of subdivision (b)(3)(i)(A) of this clause, providing any information specifically requested by an agency or Congress is permitted at any time.

(C) The following agency and legislative liaison activities are permitted at any time where they are not related to a specific solicitation for any covered Federal action:

(1) Discussing with an agency the qualities and characteristics (including individual demonstrations) of the person's products or services, conditions or terms of sale, and service capabilities.

(2) Technical discussions and other activities regarding the application or adaptation of the person's products or services for an agency's use.

(D) The following agency and legislative liaison activities are permitted where they are prior to formal solicitation of any covered Federal action--

(1) Providing any information not specifically requested but necessary for an agency to make an informed decision about initiation of a covered Federal action;

(2) Technical discussions regarding the preparation of an unsolicited proposal prior to its official submission; and

(3) Capability presentations by persons seeking awards from an agency pursuant to the provisions of the Small Business Act, as amended by Pub. L. 95-507, and subsequent amendments.

(E) Only those services expressly authorized by subdivision (b)(3)(i)(A) of this clause are permitted under this clause.

(ii) Professional and technical services.

(A) The prohibition on the use of appropriated funds, in subparagraph (b)(1) of this clause, does not apply in the case of--

(1) A payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action, if payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action.

(2) Any reasonable payment to a person, other than an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action if the payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action. Persons other than officers or employees of a person requesting or receiving a covered Federal action include consultants and trade associations.

(B) For purposes of subdivision (b)(3)(ii)(A) of this clause, "professional and technical services" shall be limited to advice and analysis directly applying any professional or technical discipline. For example, drafting of a legal document accompanying a bid or proposal by a lawyer is allowable. Similarly, technical advice provided by an engineer on the performance or operational capability of a piece of equipment rendered directly in the negotiation of a contract is allowable. However, communications with the intent to influence made by a professional (such as a licensed lawyer) or a technical person (such as a licensed accountant) are not allowable under this section unless they provide advice and analysis directly applying their professional or technical expertise and unless the advice or analysis is rendered directly and solely in the preparation, submission or negotiation of a covered Federal action. Thus, for example, communications with the intent to influence made by a lawyer that do not provide legal advice or analysis directly and solely related to the legal aspects of his or her client's

proposal, but generally advocate one proposal over another are not allowable under this section because the lawyer is not providing professional legal services. Similarly, communications with the intent to influence made by an engineer providing an engineering analysis prior to the preparation or submission of a bid or proposal are not allowable under this section since the engineer is providing technical services but not directly in the preparation, submission or negotiation of a covered Federal action.

(C) Requirements imposed by or pursuant to law as a condition for receiving a covered Federal award include those required by law or regulation and any other requirements in the actual award documents.

(D) Only those services expressly authorized by subdivisions (b)(3)(ii)(A)(1) and (2) of this clause are permitted under this clause.

(E) The reporting requirements of FAR 3.803(a) shall not apply with respect to payments of reasonable compensation made to regularly employed officers or employees of a person.

(c) Disclosure. (1) The Contractor who requests or receives from an agency a Federal contract shall file with that agency a disclosure form, OMB standard form LLL, Disclosure of Lobbying Activities, if such person has made or has agreed to make any payment using nonappropriated funds (to include profits from any covered Federal action), which would be prohibited under subparagraph (b)(1) of this clause, if paid for with appropriated funds.

(2) The Contractor shall file a disclosure form at the end of each calendar quarter in which there occurs any event that materially affects the accuracy of the information contained in any disclosure form previously filed by such person under subparagraph (c)(1) of this clause. An event that materially affects the accuracy of the information reported includes--

(i) A cumulative increase of $25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence a covered Federal action; or

(ii) A change in the person(s) or individual(s) influencing or attempting to influence a covered Federal action; or

(iii) A change in the officer(s), employee(s), or Member(s) contacted to influence or attempt to influence a covered Federal action.

(3) The Contractor shall require the submittal of a certification, and if required, a disclosure form by any person who requests or receives any subcontract exceeding $100,000 under the Federal contract.

(4) All subcontractor disclosure forms (but not certifications) shall be forwarded from tier to tier until received by the prime Contractor. The prime Contractor shall submit all disclosures to the Contracting Officer at the end of the calendar quarter in which the disclosure form is submitted by the subcontractor. Each subcontractor certification shall be retained in the subcontract file of the awarding Contractor.

(d) Agreement. The Contractor agrees not to make any payment prohibited by this clause.

(e) Penalties. (1) Any person who makes an expenditure prohibited under paragraph (a) of this clause or who fails to file or amend the disclosure form to be filed or amended by paragraph (b) of this clause shall be subject to civil penalties as provided for by 31 U.S.C. 1352. An imposition of a civil penalty does not prevent the Government from seeking any other remedy that may be applicable.

(2) Contractors may rely without liability on the representation made by their subcontractors in the certification and disclosure form.

(f) Cost allowability. Nothing in this clause makes allowable or reasonable any costs which would otherwise be unallowable or unreasonable. Conversely, costs made specifically unallowable by the requirements in this clause will not be made allowable under any other provision.

I.9 ORDERING (FAR 52.216-18) (OCT 1995)

(a) Any supplies and services to be furnished under this contract shall be ordered by issuance of delivery orders or task orders by the individuals or activities designated in the Schedule. Such orders may be issued from the date of the contract award through the end of contract performance.

(b) All delivery orders or task orders are subject to the terms and conditions of this contract. In the event of conflict between a delivery order or task order and this contract, the contract shall control.

(c) If mailed, a delivery order or task order is considered "issued" when the Government deposits the order in the mail. Orders may be issued orally, by facsimile, or by electronic commerce methods only if authorized in the Schedule.

I.10 ORDER LIMITATIONS (FAR 52.216-19) (OCT 1995)

(a) *Minimum order*. When the Government requires supplies or services covered by this contract in an amount of less than $25, the Government is not obligated to purchase, nor is the Contractor obligated to furnish, those supplies or services under the contract.
(b) *Maximum order*. The Contractor is not obligated to honor--
(1) Any order for a single item in excess of $1Million;
(2) Any order for a combination of items in excess of $1 Million; or
(3) A series of orders from the same ordering office within 10 days that together call for quantities exceeding the limitation in subparagraph (1) or (2) above.
(c) If this is a requirements contract (i.e., includes the Requirements clause at subsection 52.216-21 of the Federal Acquisition Regulation (FAR)), the Government is not required to order a part of any one requirement from the Contractor if that requirement exceeds the maximum-order limitations in paragraph (b) above.
(d) Notwithstanding paragraphs (b) and (c) above, the Contractor shall honor any order exceeding the maximum order limitations in paragraph (b), unless that order (or orders) is returned to the ordering office within 5 days after issuance, with written notice stating the Contractor's intent not to ship the item (or items) called for and the reasons. Upon receiving this notice, the Government may acquire the supplies or services from another source.

I.11 INDEFINITE QUANTITY (FAR 52.216-22) (OCT 1995)

(a) This is an indefinite-quantity contract for the supplies or services specified, and effective for the period stated, in the Schedule. The quantities of supplies and services specified in the Schedule are estimates only and are not purchased by this contract.
(b) Delivery or performance shall be made only as authorized by orders issued in accordance with the Ordering clause. The Contractor shall furnish to the Government, when and if ordered, the supplies or services specified in the Schedule up to and including the quantity designated in the Schedule as the "maximum." The Government shall order at least the quantity of supplies or services designated in the Schedule as the "minimum."
(c) Except for any limitations on quantities in the Order Limitations clause or in the Schedule, there is no limit on the number of orders that may be issued. The Government may issue orders requiring delivery to multiple destinations or performance at multiple locations.
(d) Any order issued during the effective period of this contract and not completed within that period shall be completed by the Contractor within the time specified in the order. The contract shall govern the Contractor's and Government's rights and obligations with respect to that order to the same extent as if the order were completed during the contract's effective period; *provided*, that the Contractor shall not be required to make any deliveries under this contract after 90 calendar days after the effective period ends.

I.12 OPTION TO EXTEND THE TERM OF THE CONTRACT (FAR 52.217-9) (MAR 1989)

(a) The Government may extend the term of this contract by written notice to the Contractor within the current contract period of performance; provided, that the Government shall give the Contractor a preliminary written notice of its intent to extend at least 30 days before the contract expires. The preliminary notice does not commit the Government to an extension.
(b) If the Government exercises this option, the extended contract shall be considered to include this option provision.
(c) The total duration of this contract, including the exercise of any options under this clause, shall not exceed 60 months.

I.13 NOTICE OF PRICE EVALUATION PREFERENCE FOR HUBZONE SMALL BUSINESS CONCERNS (FAR 52.219-4) (JAN 1999)

(a) Definition. "HUBZone small business concern," as used in this clause, means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.

(b) Evaluation preference. (1) Offers will be evaluated by adding a factor of 10 percent to the price of all offers, except--

(i) Offers from HUBZone small business concerns that have not waived the evaluation preference;

(ii) Otherwise successful offers from small business concerns;

(iii) Otherwise successful offers of eligible products under the Trade Agreements Act when the dollar threshold for application of the Act is exceeded (see 25.402 of the Federal Acquisition Regulation (FAR)); and

(iv) Otherwise successful offers where application of the factor would be inconsistent with a Memorandum of Understanding or other international agreement with a foreign government.

(2) The factor of 10 percent shall be applied on a line item basis or to any group of items on which award may be made. Other evaluation factors described in the solicitation shall be applied before application of the factor.

(3) A concern that is both a HUBZone small business concern and a small disadvantaged business concern will receive the benefit of both the HUBZone small business price evaluation preference and the small disadvantaged business price evaluation adjustment (see FAR clause 52.219-23). Each applicable price evaluation preference or adjustment shall be calculated independently against an offeror's base offer. These individual preference amounts shall be added together to arrive at the total evaluated price for that offer.

(c) Waiver of evaluation preference. A HUBZone small business concern may elect to waive the evaluation preference, in which case the factor will be added to its offer for evaluation purposes. The agreements in paragraph (d) of this clause do not apply if the offeror has waived the evaluation preference.

☐ Offeror elects to waive the evaluation preference.

(d) Agreement. A HUBZone small business concern agrees that in the performance of the contract, in the case of a contract for--

(1) Services (except construction), at least 50 percent of the cost of personnel for contract performance will be spent for employees of the concern or employees of other HUBZone small business concerns;

(2) Supplies (other than procurement from a nonmanufacturer of such supplies), at least 50 percent of the cost of manufacturing, excluding the cost of materials, will be performed by the concern or other HUBZone small business concerns;

(3) General construction, at least 15 percent of the cost of the contract performance incurred for personnel will be will be spent on the concern's employees or the employees of other HUBZone small business concerns; or

(4) Construction by special trade contractors, at least 25 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other HUBZone small business concerns.

(e) A HUBZone joint venture agrees that in the performance of the contract, the applicable percentage specified in paragraph (d) of this clause will be performed by the HUBZone small business participant or participants.

(f) A HUBZone small business concern nonmanufacturer agrees to furnish in performing this contract only end items manufactured or produced by HUBZone small business manufacturer concerns. This paragraph does not apply in connection with construction or service contracts.

I.14 NOTICE OF PRICE EVALUATION ADJUSTMENT FOR SMALL DISADVANTAGED BUSINESS CONCERNS (FAR 52.219-23) (OCT 1998)

(a) Definitions. As used in this clause—

Small disadvantaged business concern means an offeror that represents, as part of its offer, that it is a small business under the size standard applicable to this acquisition; and either—

(1) It has received certification by the Small Business Administration as a small disadvantaged business concern consistent with 13 CFR 124, Subpart B; and

(i) No material change in disadvantaged ownership and control has occurred since its certification;

(ii) Where the concern is owned by one or more disadvantaged individuals, the net worth of each individual upon whom the certification is based does not exceed $750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and

(iii) It is listed, on the date of its representation, on the register of small disadvantaged business concerns maintained by the Small Business Administration;

(2) It has submitted a completed application to the Small Business Administration or a Private Certifier to be certified as a small disadvantaged business concern in accordance with 13 CFR 124, Subpart B, and a decision on that application is pending, and that no material change in disadvantaged ownership and control has occurred since its application was submitted. In this case, in order to receive the benefit of a price evaluation adjustment, an offeror must receive certification as a small disadvantaged business concern by the Small Business Administration prior to contract award; or

(3) Is a joint venture as defined in 13 CFR 124.1002(f).

Historically black college or university means an institution determined by the Secretary of Education to meet the requirements of 34 CFR 608.2. For the Department of Defense (DOD), the National Aeronautics and Space Administration (NASA), and the Coast Guard, the term also includes any nonprofit research institution that was an integral part of such a college or university before November 14, 1986.

Minority institution means an institution of higher education meeting the requirements of Section 1046(3) of the Higher Education Act of 1965 (20 U.S.C. 1135d-5(3)) which, for purposes of this clause, includes a Hispanic-serving institution of higher education as defined in Section 316(b)(1) of the Act (20 U.S.C. 1059c(b)(1)).

United States means the United States, its territories and possessions, the Commonwealth of Puerto Rico, the U.S. Trust Territory of the Pacific Islands, and the District of Columbia.

(b) Evaluation adjustment. (1) Offers will be evaluated by adding a factor of 10% percent to the price of all offers, except—

(i) Offers from small disadvantaged business concerns that have not waived the adjustment;

(ii) For DOD, NASA, and Coast Guard acquisitions, otherwise successful offers from historically black colleges or universities or minority institutions;

(iii) Otherwise successful offers of eligible products under the Trade Agreements Act when the dollar threshold for application of the Act is equaled or exceeded (see section 25.402 of the Federal Acquisition Regulation (FAR));

(iv) Otherwise successful offers where application of the factor would be inconsistent with a Memorandum of Understanding or other international agreement with a foreign government; and

(v) For DOD acquisitions, otherwise successful offers of qualifying country end products (see sections 225.000-70 and 252.225-7001 of the Defense FAR Supplement).

(2) The factor shall be applied on a line item basis or to any group of items on which award may be made. Other evaluation factors described in the solicitation shall be a applied before application of the factor. The factor may not be applied if using the adjustment would cause the contract award to be made at a price that exceeds the fair market price by more than the factor in paragraph (b)(1) of this clause.

(c) Waiver of evaluation adjustment. A small disadvantaged business concern may elect to waive the adjustment, in which case the factor will be added to its offer for evaluation purposes. The agreements in paragraph (d) of this clause do not apply to offers that waive the adjustment.

___ Offeror elects to waive the adjustment.

(d) Agreements. (1) A small disadvantaged business concern, that did not waive the adjustment, agrees that in performance of the contract, in the case of a contract for—

(i) Services, except construction, at least 50 percent of the cost of personnel for contract performance will be spent for employees of the concern;

(ii) Supplies (other than procurement from a nonmanufacturer of such supplies), at least 50 percent of the cost of manufacturing, excluding the cost of materials, will be performed by the concern;

(iii) General construction, at least 15 percent of the cost of the contract, excluding the cost of materials, will be performed by employees of the concern; or

(iv) Construction by special trade contractors, at least 25 percent of the cost of the contract, excluding the cost of materials, will be performed by employees of the concern.

(2) A small disadvantaged business concern submitting an offer in its own name agrees to furnish in performing this contract only end items manufactured or produced by small disadvantaged business concerns in the United States. This paragraph does not apply in connection with construction or service contracts.

I.15 SMALL DISADVANTAGED BUSINESS PARTICIPATION PROGRAM—DISADVANTAGED STATUS AND REPORTING (FAR 52.219-25) (JAN 1999)

(a) Disadvantaged status for joint venture partners, team members, and subcontractors. This clause addresses disadvantaged status for joint venture partners, teaming arrangement members, and subcontractors and is applicable if this contract contains small disadvantaged business (SDB) participation targets. The Contractor shall obtain representations of small disadvantaged status from joint venture partners, teaming arrangement members, and subcontractors through use of a provision substantially the same as paragraph (b)(1)(i) of the provision at FAR 52.219-22, Small Disadvantaged Business Status. The Contractor shall confirm that a joint venture partner, team member, or subcontractor representing itself as a small disadvantaged business concern is included in the SBA's on-line list of SDBs at http://www.sba.gov or by contacting the SBA's Office of Small Disadvantaged Business Certification and Eligibility.

(b) Reporting requirement. If this contract contains SDB participation targets, the Contractor shall report on the participation of SDB concerns at contract completion, or as otherwise provided in this contract. Reporting may be on Optional Form 312, Small Disadvantaged Business Participation Report, or in the Contractor's own format providing the same information. This report is required for each contract containing SDB participation targets. If this contract contains an individual Small, Small Disadvantaged and Women-Owned Small Business Subcontracting Plan, reports may be submitted with the final Subcontracting Report for Individual Contracts (Standard Form 294) at the completion of the contract.

I.16 SERVICE CONTRACT ACT OF 1965, AS AMENDED (FAR 52.222-41) (MAY 1989)

(a) **Definitions.** "Act," as used in this clause, means the Service Contract Act of 1965, as amended (41 U.S.C. 351, et seq.).

"Contractor," as used in this clause or in any subcontract, shall be deemed to refer to the subcontractor, except in the term "Government Prime Contractor."

"Service employee," as used in this clause, means any person engaged in the performance of this contract other than any person employed in a bona fide executive, administrative, or professional capacity, as these terms are defined in Part 541 of Title 29, Code of Federal Regulations, as revised. It includes all such persons regardless of any contractual relationship that may be alleged to exist between a Contractor or subcontractor and such persons.

(b) **Applicability.** This contract is subject to the following provisions and to all other applicable provisions of the Act and regulations of the Secretary of Labor (29 CFR Part 4). This clause does not apply to contracts or subcontracts administratively exempted by the Secretary of Labor or exempted by 41 U.S.C. 356, as interpreted in Subpart C of 29 CFR Part 4.

(c) **Compensation.**

(1) Each service employee employed in the performance of this contract by the Contractor or any subcontractor shall be paid not less than the minimum monetary wages and shall be furnished

fringe benefits in accordance with the wages and fringe benefits determined by the Secretary of Labor, or authorized representative, as specified in any wage determination attached to this contract.

(2) (i) If a wage determination is attached to this contract, the Contractor shall classify any class of service employee which is not listed therein and which is to be employed under this contract (i.e., the work to be performed is not performed by any classification listed in the wage determination) so as to provide a reasonable relationship (i.e., appropriate level of skill comparison) between such unlisted classifications and the classifications listed in the wage determination. Such conformed class of employees shall be paid the monetary wages and furnished the fringe benefits as are determined pursuant to the procedures in this paragraph (c).

(ii) This conforming procedure shall be initiated by the Contractor prior to the performance of contract work by the unlisted class of employee. The Contractor shall submit Standard Form (SF) 1444, Request For Authorization of Additional Classification and Rate, to the Contracting Officer no later than 30 days after the unlisted class of employee performs any contract work. The Contracting Officer shall review the proposed classification and rate and promptly submit the completed SF 1444 (which must include information regarding the agreement or disagreement of the employees' authorized representatives or the employees themselves together with the agency recommendation), and all pertinent information to the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor. The Wage and Hour Division will approve, modify, or disapprove the action or render a final determination in the event of disagreement within 30 days of receipt or will notify the Contracting Officer within 30 days of receipt that additional time is necessary.

(iii) The final determination of the conformance action by the Wage and Hour Division shall be transmitted to the Contracting Officer who shall promptly notify the Contractor of the action taken. Each affected employee shall be furnished by the Contractor with a written copy of such determination or it shall be posted as a part of the wage determination.

(iv) (A) The process of establishing wage and fringe benefit rates that bear a reasonable relationship to those listed in a wage determination cannot be reduced to any single formula. The approach used may vary from wage determination to wage determination depending on the circumstances. Standard wage and salary administration practices which rank various job classifications by pay grade pursuant to point schemes or other job factors may, for example, be relied upon. Guidance may also be obtained from the way different jobs are rated under Federal pay systems (Federal Wage Board Pay System and the General Schedule) or from other wage determinations issued in the same locality. Basic to the establishment of any conformable wage rate(s) is the concept that a pay relationship should be maintained between job classifications based on the skill required and the duties performed.

(B) In the case of a contract modification, an exercise of an option, or extension of an existing contract, or in any other case where a Contractor succeeds a contract under which the classification in question was previously conformed pursuant to paragraph (c) of this clause, a new conformed wage rate and fringe benefits may be assigned to the conformed classification by indexing (i.e., adjusting) the previous conformed rate and fringe benefits by an amount equal to the average (mean) percentage increase (or decrease, where appropriate) between the wages and fringe benefits specified for all classifications to be used on the contract which are listed in the current wage determination, and those specified for the corresponding classifications in the previously applicable wage determination. Where conforming actions are accomplished in accordance with this paragraph prior to the performance of contract work by the unlisted class of employees, the Contractor shall advise the Contracting Officer of the action taken but the other procedures in subdivision (c)(ii) of this clause need not be followed.

(C) No employee engaged in performing work on this contract shall in any event be paid less than the currently applicable minimum wage specified under section 6(a)(1) of the Fair Labor Standards Act of 1938, as amended.

(v) The wage rate and fringe benefits finally determined under this subparagraph (c)(2) of this clause shall be paid to all employees performing in the classification from the first day on which contract work is performed by them in the classification. Failure to pay the unlisted employees the compensation agreed upon by the interested parties and/or finally determined by the Wage and Hour Division retroactive to the date such class of employees commenced contract work shall be a violation of the Act and this contract.

(vi) Upon discovery of failure to comply with subparagraph (c)(2) of this clause, the Wage and Hour Division shall make a final determination of conformed classification, wage rate, and/or fringe benefits which shall be retroactive to the date such class or classes of employees commenced contract work.

(3) **Adjustment of Compensation.** If the term of this contract is more than 1 year, the minimum monetary wages and fringe benefits required to be paid or furnished thereunder to service employees under this contract shall be subject to adjustment after 1 year and not less often than once every 2 years, under wage determinations issued by the Wage and Hour Division.

(d) **Obligation to Furnish Fringe Benefits.** The Contractor or subcontractor may discharge the obligation to furnish fringe benefits specified in the attachment or determined under subparagraph (c)(2) of this clause by furnishing equivalent combinations of bona fide fringe benefits, or by making equivalent or differential cash payments, only in accordance with Subpart D of 29 CFR Part 4.

(e) **Minimum Wage.** In the absence of a minimum wage attachment for this contract, neither the Contractor nor any subcontractor under this contract shall pay any person performing work under this contract (regardless of whether the person is a service employee) less than the minimum wage specified by section 6(a)(1) of the Fair Labor Standards Act of 1938. Nothing in this clause shall relieve the Contractor or any subcontractor of any other obligation under law or contract for the payment of a higher wage to any employee.

(f) **Successor Contracts.** If this contract succeeds a contract subject to the Act under which substantially the same services were furnished in the same locality and service employees were paid wages and fringe benefits provided for in a collective bargaining agreement, in the absence of the minimum wage attachment for this contract setting forth such collectively bargained wage rates and fringe benefits, neither the Contractor nor any subcontractor under this contract shall pay any service employee performing any of the contract work (regardless of whether or not such employee was employed under the predecessor contract), less than the wages and fringe benefits provided for in such collective bargaining agreement, to which such employee would have been entitled if employed under the predecessor contract, including accrued wages and fringe benefits and any prospective increases in wages and fringe benefits provided for under such agreement. No Contractor or subcontractor under this contract may be relieved of the foregoing obligation unless the limitations of 29 CFR 4.lb(b) apply or unless the Secretary of Labor or the Secretary's authorized representative finds, after a hearing as provided in 29 CFR 4.10 that the wages and/or fringe benefits provided for in such agreement are substantially at variance with those which prevail for services of a character similar in the locality, or determines, as provided in 29 CFR 4.11, that the collective bargaining agreement applicable to service employees employed under the predecessor contract was not entered into as a result of arm's length negotiations. Where it is found in accordance with the review procedures provided in 29 CFR 4.10 and/or 4.11 and Parts 6 and 8 that some or all of the wages and/or fringe benefits contained in a predecessor Contractor's collective bargaining agreement are substantially at variance with those which prevail for services of a character similar in the locality, and/or that the collective bargaining agreement applicable to service employees employed under the predecessor contract was not entered into as a result of arm's length negotiations, the Department will issue a new or revised wage determination setting forth the applicable wage rates and fringe benefits. Such determination shall be made part of the contract or subcontract, in accordance with the decision of the Administrator, the Administrative Law Judge, or the Board of Service Contract Appeals, as the case may be, irrespective of whether such issuance occurs prior to or after the award of a contract or subcontract (53 Comp. Gen. 401 (1973)). In the case of a wage determination issued solely as a result of a finding of substantial variance, such determination shall be effective as of the date of the final administrative decision.

(g) **Notification to Employees.** The Contractor and any subcontractor under this contract shall notify each service employee commencing work on this contract of the minimum monetary wage and any fringe benefits required to be paid pursuant to this contract, or shall post the wage determination attached to this contract. The poster provided by the Department of Labor (Publication WH 1313) shall be posted in a prominent and accessible place at the worksite. Failure to comply with this requirement is a violation of Section 2(a)(4) of the Act and of this contract.

(h) **Safe and Sanitary Working Conditions.** The Contractor or subcontractor shall not permit any part of the services called for by this contract to be performed in buildings or surroundings or under working conditions provided by or under the control or supervision of the Contractor or subcontractor which are unsanitary, hazardous, or dangerous to the health or safety of the service employees. The

Contractor or subcontractor shall comply with the safety and health standards applied under 29 CFR Part 1925.

(i) **Records.** (1) The Contractor and each subcontractor performing work subject to the Act shall make and maintain for 3 years from the completion of the work, and make them available for inspection and transcription by authorized representatives of the Wage and Hour Division, Employment Standards Administration, a record of the following:

(i) For each employee subject to the Act -

(A) Name and address and social security number;

(B) Correct work classification or classifications, rate or rates of monetary wages paid and fringe benefits provided, rate or rates of payments in lieu of fringe benefits, and total daily and weekly compensation;

(C) Daily and weekly hours worked by each employee; and

(D) Any deductions, rebates, or refunds from the total daily or weekly compensation of each employee.

(ii) For those classes of service employees not included in any wage determination attached to this contract, wage rates or fringe benefits determined by the interested parties or by the Administrator or authorized representative, under the terms of paragraph (c) of this clause. A copy of the report required by subdivision (c)(2)(ii) of this clause will fulfill this requirement.

(iii) Any list of the predecessor Contractor's employees which had been furnished to the Contractor as prescribed by paragraph (n) of this clause.

(2) The Contractor shall also make available a copy of this contract for inspection or transcription by authorized representatives of the Wage and Hour Division.

(3) Failure to make and maintain or to make available these records for inspection and transcription shall be a violation of the regulations and this contract, and in the case of failure to produce these records, the Contracting Officer, upon direction of the Department of Labor and notification to the Contractor, shall take action to cause suspension of any further payment or advance of funds until such violation ceases.

(4) The Contractor shall permit authorized representatives of the Wage and Hour Division to conduct interviews with employees at the worksite during normal working hours.

(j) **Pay Periods.** The Contractor shall unconditionally pay to each employee subject to the Act all wages due free and clear and without subsequent deduction (except as otherwise provided by law or Regulations, 29 CFR Part 4), rebate, or kickback on any account. These payments shall be made no later than one pay period following the end of the regular pay period in which the wages were earned or accrued. A pay period under this Act may not be of any duration longer than semi-monthly.

(k) **Withholding of Payment and Termination of Contract.** The Contracting Officer shall withhold or cause to be withheld from the Government Prime Contractor under this or any other Government contract with the Prime Contractor such sums as an appropriate official of the Department of Labor requests or such sums as the Contracting Officer decides may be necessary to pay underpaid employees employed by the Contractor or subcontractor. In the event of failure to pay any employees subject to the Act all or part of the wages or fringe benefits due under the Act, the Contracting Officer may, after authorization or by direction of the Department of Labor and written notification to the Contractor, take action to cause suspension of any further payment or advance of funds until such violations have ceased. Additionally, any failure to comply with the requirements of this clause may be grounds for termination of the right to proceed with the contract work. In such event, the Government may enter into other contracts or arrangements for completion of the work, charging the Contractor in default with any additional cost.

(l) **Subcontracts.** The Contractor agrees to insert this clause in all subcontracts subject to the Act.

(m) **Collective Bargaining Agreements Applicable to Service Employees.** If wages to be paid or fringe benefits to be furnished any service employees employed by the Government Prime Contractor or any subcontractor under the contract are provided for in a collective bargaining agreement which is or will be effective during any period in which the contract is being performed, the Government Prime Contractor shall report this fact to the Contracting Officer, together with full information as to the application and accrual of such wages and fringe benefits, including any prospective increases, to service employees engaged in work on the contract, and a copy of the collective bargaining agreement. Such report shall be made upon commencing performance of the contract, in the case of collective bargaining

agreements effective at such time, and in the case of such agreements or provisions or amendments thereof effective at a later time during the period of contract performance such agreements shall be reported promptly after negotiation thereof.

(n) **Seniority List.** Not less than 10 days prior to completion of any contract being performed at a Federal facility where service employees may be retained in the performance of the succeeding contract and subject to a wage determination which contains vacation or other benefit provisions based upon length of service with a Contractor (predecessor) or successor (29 CFR Part 4.173), the incumbent Prime Contractor shall furnish the Contracting Officer a certified list of the names of all service employees on the Contractor's or subcontractor's payroll during the last month of contract performance. Such list shall also contain anniversary dates of employment on the contract either with the current or predecessor Contractors of each such service employee. The Contracting Officer shall turn over such list to the successor Contractor at the commencement of the succeeding contract.

(o) **Rulings and Interpretations.** Rulings and interpretations of the Act are contained in Regulations, 29 CFR Part 4.

(p) **Contractor's Certification.**

(1) By entering into this contract, the Contractor (and officials thereof) certifies that neither it (nor he or she) nor any person or firm who has substantial interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of the sanctions imposed under section 5 of the Act.

(2) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract under section 5 of the Act.

(3) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

(q) **Variations, Tolerances, and Exemptions Involving Employment.** Notwithstanding any of the provisions in paragraphs (b) through (o) of this clause, the following employees may be employed in accordance with the following variations, tolerances, and exemptions, which the Secretary of Labor, pursuant to section 4(b) of the Act prior to its amendment by Public L. 92-473, found to be necessary and proper in the public interest or to avoid serious impairment of the conduct of Government business.

(1) Apprentices, student-learners, and workers whose earning capacity is impaired by age, physical or mental deficiency, or injury may be employed at wages lower than the minimum wages otherwise required by section 2(a)(1) or 2(b)(1) of the Act without diminishing any fringe benefits or cash payments in lieu thereof required under section 2(a)(2) of the Act, in accordance with the conditions and procedures prescribed for the employment of apprentices, student-learners, handicapped persons, and handicapped clients of sheltered workshops under Section 14 of the Fair Labor Standards Act of 1938, in the regulations issued by the Administrator (29 CFR Parts 520, 521, 524, and 525).

(2) The Administrator will issue certificates under the Act for the employment of apprentices, student-learners, handicapped persons, or handicapped clients of sheltered workshops not subject to the Fair Labor Standards Act of 1938, or subject to different minimum rates of pay under the two acts, authorizing appropriate rates of minimum wages (but without changing requirements concerning fringe benefits or supplementary cash payments in lieu thereof), applying procedures prescribed by the applicable regulations issued under the Fair Labor Standards Act of 1938 (29 CFR Parts 520, 521, 524, and 525).

(3) The Administrator will also withdraw, annul, or cancel such certificates in accordance with the regulations in 29 CFR Parts 525 and 528.

(r) **Apprentices.** Apprentices will be permitted to work at less than the predetermined rate for the work they perform when they are employed and individually registered in a bona fide apprenticeship program registered with a State Apprenticeship Agency which is recognized by the U.S. Department of Labor, or if no such recognized agency exists in a State, under a program registered with the Bureau of Apprenticeship and Training, Employment and Training Administration, U.S. Department of Labor. Any employee who is not registered as an apprentice in an approved program shall be paid the wage rate and fringe benefits contained in the applicable wage determination for the journeyman classification of work actually performed. The wage rates paid apprentices shall not be less than the wage rate for their level of progress set forth in the registered program, expressed as the appropriate percentage of the journeyman's rate contained in the applicable wage determination. The allowable ratio of apprentices to journeymen employed on the contract work in any craft classification shall not be greater than the ratio permitted to the Contractor as to his entire work force under the registered program.

(s) **Tips.** An employee engaged in an occupation in which the employee customarily and regularly receives more than $30 a month in tips may have the amount of tips credited by the employer against the minimum wage required by section 2(a)(1) or section 2(b)(1) of the Act, in accordance with section 3(m) of the Fair Labor Standards Act and Regulations 29 CFR Part 531. However, that the amount of credit shall not exceed $1.34 per hour beginning January 1, 1981. To use this provision -

(1) The employer must inform tipped employees about this tip credit allowance before the credit is utilized;

(2) The employees must be allowed to retain all tips (individually or through a pooling arrangement and regardless of whether the employer elects to take a credit for tips received);

(3) The employer must be able to show by records that the employee receives at least the applicable Service Contract Act minimum wage through the combination of direct wages and tip credit; and

(4) The use of such tip credit must have been permitted under any predecessor collective bargaining agreement applicable by virtue of section 4(c) of the Act.

(t) **Disputes Concerning Labor Standards.** The U.S. Department of Labor has set forth in 29 CFR Parts 4, 6, and 8 procedures for resolving disputes concerning labor standards requirements. Such disputes shall be resolved in accordance with those procedures and not the Disputes clause of this contract. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

I.17 HAZARDOUS MATERIAL IDENTIFICATION AND MATERIAL SAFETY DATA (FAR 52.223-3) (JAN 1997)--ALTERNATE I (JUL 1995)

(a) "Hazardous material," as used in this clause, includes any material defined as hazardous under the latest version of Federal Standard No. 313 (including revisions adopted during the term of the contract.
(b) The offeror must list any hazardous material, as defined in paragraph (a) of this clause, to be delivered under this contract. The hazardous material shall be properly identified and include any applicable identification number, such as National Stock Number or Special Item Number. This information shall also be included on the Material Safety Data Sheet submitted under this contract.

Material [If none, insert *None*]

Identification No.

(c) This list must be updated during performance of the contract whenever the Contractor determines that any other material to be delivered under this contract is hazardous.
(d) The apparently successful offeror agrees to submit, for each item as required, prior to award, a Material Safety Data Sheet, meeting the requirements of 29 CFR 1910.1200(g) and the latest version of Federal Standard No. 313, for all hazardous material identified in paragraph (b) of this clause. Data shall be submitted in accordance with Federal Standard No. 313, whether or not the apparently successful offeror is the actual manufacturer of these items. Failure to submit the Material Safety Data Sheet prior to award may result in the apparently successful offeror being considered nonresponsible and ineligible for award.
(e) If, after award, there is a change in the composition of the item(s) or a revision to Federal Standard No. 313, which renders incomplete or inaccurate the data submitted under Paragraph (d) of this clause, the Contractor shall promptly notify the Contracting Officer and resubmit the data.
(f) Neither the requirements of this clause nor any act or failure to act by the Government shall relieve the Contractor of any responsibility or liability for the safety of Government, Contractor, or subcontractor personnel or property.

(g) Nothing contained in this clause shall relieve the Contractor from complying with applicable Federal, State, and local laws, codes, ordinances, and regulations (including the obtaining of licenses and permits) in connection with hazardous material.
(h) The Government's rights in data furnished under this contract with respect to hazardous material are as follows:

(1) To use, duplicate, and disclose any data to which this clause is applicable. The purposes of this right are to--

(i) Apprise personnel of the hazards to which they may be exposed in using, handling, packaging, transporting, or disposing of hazardous materials;

(ii) Obtain medical treatment for those affected by the material; and

(iii) Have others use, duplicate, and disclose the data for the Government for these purposes.

(2) To use, duplicate, and disclose data furnished under this clause, in accordance with subparagraph (h)(1) of this clause, in precedence over any other clause of this contract providing for rights in data.

(3) The Government is not precluded from using similar or identical data acquired from other sources.

(i) Except as provided in paragraph (i)(2), the Contractor shall prepare and submit a sufficient number of Material Safety Data Sheets (MSDS's), meeting the requirements of 29 CFR 1910.1200(g) and the latest version of Federal Standard
No. 313, for all hazardous materials identified in paragraph (b) of this clause.

(1) For items shipped to consignees, the Contractor shall include a copy of the MSDS's with the packing list or other suitable shipping document which accompanies each shipment. Alternatively, the Contractor is permitted to transmit MSDS's to consignees, in advance of receipt of shipments by consignees, if authorized in writing by the Contracting Officer.

(2) For items shipped to consignees identified by mailing address as agency depots, distribution centers or customer supply centers, the Contractor shall provide one copy of the MSDS's in or on each shipping container. If affixed to the outside of each container, the MSDS's must be placed in a weather resistant envelope.

I.18 PROMPT PAYMENT (FAR 52.232-25) (JUN 1997)

Notwithstanding any other payment clause in this contract, the Government will make invoice payments and contract financing payments under the terms and conditions specified in this clause. Payment shall be considered as being made on the day a check is dated or the date of an electronic funds transfer. Definitions of pertinent terms are set forth in section 32.902 of the Federal Acquisition Regulation. All days referred to in this clause are calendar days, unless otherwise specified. (However, see subparagraph (a)(4) of this clause concerning payments due on Saturdays, Sundays, and legal holidays.)

(a) Invoice payments--(1) Due date. (i) Except as indicated in subparagraph (a)(2) and paragraph (c) of this clause, the due date for making invoice payments by the designated payment office shall be the later of the following two events:

(A) The 30th day after the designated billing office has received a proper invoice from the Contractor (except as provided in subdivision (a)(1)(ii) of this clause).

(B) The 30th day after Government acceptance of supplies delivered or services performed by the Contractor. On a final invoice where the payment amount is subject to contract settlement actions, acceptance shall be deemed to have occurred on the effective date of the contract settlement.

(ii) If the designated billing office fails to annotate the invoice with the actual date of receipt at the time of receipt, the invoice payment due date shall be the 30th day after the date of the Contractor's invoice; provided a proper invoice is received and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(2) Certain food products and other payments. (i) Due dates on Contractor invoices for meat, meat food products, or fish; perishable agricultural commodities; and dairy products, edible fats or oils, and food products prepared from edible fats or oils are--

(A) For meat or meat food products, as defined in section 2(a)(3) of the Packers and Stockyard Act of 1921 (7 U.S.C. 182(3)), and as further defined in Pub. L. 98-181, including any edible fresh or frozen poultry meat, any perishable poultry meat food product, fresh eggs, and any perishable egg product, as close as possible to, but not later than, the 7th day after product delivery.

(B) For fresh or frozen fish, as defined in section 204(3) of the Fish and Seafood Promotion Act of 1986 (16 U.S.C. 4003(3)), as close as possible to, but not later than, the 7th day after product delivery.

(C) For perishable agricultural commodities, as defined in section 1(4) of the Perishable Agricultural Commodities Act of 1930 (7 U.S.C. 499a(4)), as close as possible to, but not later than, the 10th day after product delivery, unless another date is specified in the contract.

(D) For dairy products, as defined in section 111(e) of the Dairy Production Stabilization Act of 1983 (7 U.S.C. 4502(e)), edible fats or oils, and food products prepared from edible fats or oils, as close as possible to, but not later than, the 10th day after the date on which a proper invoice has been received. Liquid milk, cheese, certain processed cheese products, butter, yogurt, ice cream, mayonnaise, salad dressings, and other similar products, fall within this classification. Nothing in the Act limits this classification to refrigerated products. When questions arise regarding the proper classification of a specific product, prevailing industry practices will be followed in specifying a contract payment due date. The burden of proof that a classification of a specific product is, in fact, prevailing industry practice is upon the Contractor making the representation.

(ii) If the contract does not require submission of an invoice for payment (e.g., periodic lease payments), the due date will be as specified in the contract.

(3) Contractor's invoice. The Contractor shall prepare and submit invoices to the designated billing office specified in the contract. A proper invoice must include the items listed in subdivisions (a)(3)(i) through (a)(3)(viii) of this clause. If the invoice does not comply with these requirements, it shall be returned within 7 days after the date the designated billing office received the invoice (3 days for meat, meat food products, or fish; 5 days for perishable agricultural commodities, edible fats or oils, and food products prepared from edible fats or oils), with a statement of the reasons why it is not a proper invoice. Untimely notification will be taken into account in computing any interest penalty owed the Contractor in the manner described in subparagraph (a)(5) of this clause.

(i) Name and address of the Contractor.

(ii) Invoice date. (The Contractor is encouraged to date invoices as close as possible to the date of the mailing or transmission.)

(iii) Contract number or other authorization for supplies delivered or services performed (including order number and contract line item number).

(iv) Description, quantity, unit of measure, unit price, and extended price of supplies delivered or services performed.

(v) Shipping and payment terms (e.g., shipment number and date of shipment, prompt payment discount terms). Bill of lading number and weight of shipment will be shown for shipments on Government bills of lading.

(vi) Name and address of Contractor official to whom payment is to be sent (must be the same as that in the contract or in a proper notice of assignment).

(vii) Name (where practicable), title, phone number, and mailing address of person to be notified in the event of a defective invoice.

(viii) Any other information or documentation required by the contract (such as evidence of shipment).

(ix) While not required, the Contractor is strongly encouraged to assign an identification number to each invoice.

(4) Interest penalty. An interest penalty shall be paid automatically by the designated payment office, without request from the Contractor, if payment is not made by the due date and the conditions listed in subdivisions (a)(4)(i) through (a)(4)(iii) of this clause are met, if applicable. However, when the due date falls on a Saturday, Sunday, or legal holiday when Federal Government offices are closed and Government business is not expected to be conducted, payment may be made on the following business day without incurring a late payment interest penalty.

(i) A proper invoice was received by the designated billing office.

(ii) A receiving report or other Government documentation authorizing payment was processed, and there was no disagreement over quantity, quality, or Contractor compliance with any contract term or condition.

(iii) In the case of a final invoice for any balance of funds due the Contractor for supplies delivered or services performed, the amount was not subject to further contract settlement actions between the Government and the Contractor.

(5) Computing penalty amount. The interest penalty shall be at the rate established by the Secretary of the Treasury under section 12 of the Contract Disputes Act of 1978 (41 U.S.C. 611) that is in effect on the day after the due date, except where the interest penalty is prescribed by other governmental authority (e.g., tariffs). This rate is referred to as the "Renegotiation Board Interest Rate," and it is published in the Federal Register semiannually on or about January 1 and July 1. The interest penalty shall accrue daily on the invoice principal payment amount approved by the Government until the payment date of such approved principal amount; and will be compounded in 30-day increments inclusive from the first day after the due date through the payment date. That is, interest accrued at the end of any 30-day period will be added to the approved invoice principal payment amount and will be subject to interest penalties if not paid in the succeeding 30-day period. If the designated billing office failed to notify the Contractor of a defective invoice within the periods prescribed in subparagraph (a)(3) of this clause, the due date on the corrected invoice will be adjusted by subtracting from such date the number of days taken beyond the prescribed notification of defects period. Any interest penalty owed the Contractor will be based on this adjusted due date. Adjustments will be made by the designated payment office for errors in calculating interest penalties.

(i) For the sole purpose of computing an interest penalty that might be due the Contractor, Government acceptance shall be deemed to have occurred constructively on the 7th day (unless otherwise specified in this contract) after the Contractor delivered the supplies or performed the services in accordance with the terms and conditions of the contract, unless there is a disagreement over quantity, quality, or Contractor compliance with a contract provision. In the event that actual acceptance occurs within the constructive acceptance period, the determination of an interest penalty shall be based on the actual date of acceptance. The constructive acceptance requirement does not, however, compel Government officials to accept supplies or services, perform contract administration functions, or make payment prior to fulfilling their responsibilities.

(ii) The following periods of time will not be included in the determination of an interest penalty:

(A) The period taken to notify the Contractor of defects in invoices submitted to the Government, but this may not exceed 7 days (3 days for meat, meat food products, or fish; 5 days for perishable agricultural commodities, dairy products, edible fats or oils, and food products prepared from edible fats or oils).

(B) The period between the defects notice and resubmission of the corrected invoice by the Contractor.

(C) For incorrect electronic funds transfer (EFT) information, in accordance with the EFT clause of this contract.

(iii) Interest penalties will not continue to accrue after the filing of a claim for such penalties under the clause at 52.233-1, Disputes, or for more than 1 year. Interest penalties of less than $1 need not be paid.

(iv) Interest penalties are not required on payment delays due to disagreement between the Government and the Contractor over the payment amount or other issues involving contract compliance or on amounts temporarily withheld or retained in accordance with the terms of the contract. Claims involving disputes, and any interest that may be payable, will be resolved in accordance with the clause at 52.233-1, Disputes.

(6) Prompt payment discounts. An interest penalty also shall be paid automatically by the designated payment office, without request from the Contractor, if a discount for prompt payment is taken improperly. The interest penalty will be calculated as described in subparagraph (a)(5) of this clause on the amount of discount taken for the period beginning with the first day after the end of the discount period through the date when the Contractor is paid.

(7) Additional interest penalty. (i) A penalty amount, calculated in accordance with subdivision (a)(7)(iii) of this clause, shall be paid in addition to the interest penalty amount if the Contractor--

(A) Is owed an interest penalty of $1 or more;

(B) Is not paid the interest penalty within 10 days after the date the invoice amount is paid; and

(C) Makes a written demand to the designated payment office for additional penalty payment, in accordance with subdivision (a)(7)(ii) of this clause, postmarked not later than 40 days after the invoice amount is paid.

(ii)(A) Contractors shall support written demands for additional penalty payments with the following data. No additional data shall be required. Contractors shall--

(1) Specifically assert that late payment interest is due under a specific invoice, and request payment of all overdue late payment interest penalty and such additional penalty as may be required;

(2) Attach a copy of the invoice on which the unpaid late payment interest was due; and

(3) State that payment of the principal has been received, including the date of receipt.

(B) Demands must be postmarked on or before the 40th day after payment was made, except that--

(1) If the postmark is illegible or nonexistent, the demand must have been received and annotated with the date of receipt by the designated payment office on or before the 40th day after payment was made; or

(2) If the postmark is illegible or nonexistent and the designated payment office fails to make the required annotation, the demand's validity will be determined by the date the Contractor has placed on the demand; provided such date is no later than the 40th day after payment was made.

(iii)(A) The additional penalty shall be equal to 100 percent of any original late payment interest penalty except--

(1) The additional penalty shall not exceed $5,000;

(2) The additional penalty shall never be less than $25; and

(3) No additional penalty is owed if the amount of the underlying interest penalty is less than $1.

(B) If the interest penalty ceases to accrue in accordance with the limits stated in subdivision (a)(5)(iii) of this clause, the amount of the additional penalty shall be calculated on the amount of interest penalty that would have accrued in the absence of these limits, subject to the overall limits on the additional penalty specified in subdivision (a)(7)(iii)(A) of this clause.

(C) For determining the maximum and minimum additional penalties, the test shall be the interest penalty due on each separate payment made for each separate contract. The maximum and minimum additional penalty shall not be based upon individual invoices unless the invoices are paid separately. Where payments are consolidated for disbursing purposes, the maximum and minimum additional penalty determination shall be made separately for each contract therein.

(D) The additional penalty does not apply to payments regulated by other Government regulations (e.g., payments under utility contracts subject to tariffs and regulation).

(b) Contract financing payments--(1) Due dates for recurring financing payments. If this contract provides for contract financing, requests for payment shall be submitted to the designated billing office as specified in this contract or as directed by the Contracting Officer. Contract financing payments shall be made on the [insert day as prescribed by Agency head; if not prescribed, insert 30th day] day after receipt of a proper contract financing request by the designated billing office. In the event that an audit or other review of a specific financing request is required to ensure compliance with the terms and conditions of the contract, the designated payment office is not compelled to make payment by the due date specified.

(2) Due dates for other contract financing. For advance payments, loans, or other arrangements that do not involve recurring submissions of contract financing requests, payment shall be made in accordance with the corresponding contract terms or as directed by the Contracting Officer.

(3) Interest penalty not applicable. Contract financing payments shall not be assessed an interest penalty for payment delays.

(c) Fast payment procedure due dates. If this contract contains the clause at 52.213-1, Fast Payment Procedure, payments will be made within 15 days after the date of receipt of the invoice.

I.19 BANKRUPTCY (FAR 52.242-13) (JUL 1995)

In the event the Contractor enters into proceedings relating to bankruptcy, whether voluntary or involuntary, the Contractor agrees to furnish, by certified mail or electronic commerce method authorized by the contract, written notification of the bankruptcy to the Contracting Officer responsible for administering the contract. This notification shall be furnished within five days of the initiation of the proceedings relating to bankruptcy filing. This notification shall include the date on which the bankruptcy petition was filed, the identity of the court in which the bankruptcy petition was filed, and a listing of Government contract numbers and contracting offices for all Government contracts against which final payment has not been made. This obligation remains in effect until final payment under this contract.

I.20 SUBCONTRACTS FOR COMMERCIAL ITEMS AND COMMERCIAL COMPONENTS (FAR 52.244-6) (OCT 1998)

(a) Definitions.
"Commercial item," as used in this clause, has the meaning contained in the clause at 52.202-1Definitions.
"Subcontract," as used in this clause, includes a transfer of commercial items between divisions, subsidiaries, or affiliates of the Contractor or subcontractor at any tier.
(b) To the maximum extent practicable, the Contractor shall incorporate, and require its subcontractors at all tiers to incorporate, commercial items or nondevelopmental items as components of items to be supplied under this contract.
(c) Notwithstanding any other clause of this contract, the Contractor is not required to include any FAR provision or clause, other than those listed below to the extent they are applicable and as may be required to establish the reasonableness of prices under Part 15, in a subcontract at any tier for commercial items or commercial components:
(1) 52.222-26, Equal Opportunity (E.O. 11246);
(2) 52.222-35, Affirmative Action for Disabled Veterans and Veterans of the Vietnam Era (38 U.S.C. 4212(a));
(3) 52.222-36, Affirmative Action for Workers with Disabilities (29 U.S.C. 793); and
(4) 52.247-64, Preference for Privately Owned U.S.-Flagged Commercial Vessels (46 U.S.C. 1241) (flow down not required for subcontracts awarded beginning May 1, 1996).
(d) The Contractor shall include the terms of this clause, including this paragraph (d), in subcontracts awarded under this contract.

I.21 AUTHORIZED DEVIATIONS IN CLAUSES (FAR 52.252-6) (APR 1984)

(a) The use in this solicitation or contract of any Federal Acquisition Regulation (48 CFR Chapter 1) clause with an authorized deviation is indicated by the addition of "(DEVIATION)" after the date of the clause.
(b) The use in this solicitation or contract of any NASA/FAR Supplement (48 CFR Chapter 18) clause with an authorized deviation is indicated by the addition of "(DEVIATION)" after the name of the regulation.

I.22 SECURITY REQUIREMENTS FOR UNCLASSIFIED AUTOMATED INFORMATION RESOURCES (NASA 1852.204-76) (SEP 1993)

(a) In addition to complying with any functional and technical security requirements set forth in the schedule and the clauses of this contract, the Contractor shall initiate personnel screening checks and obtain user responsibility agreements, as required by this clause, for each Contractor employee requiring unescorted or unsupervised physical access or electronic access to the following limited or controlled areas, systems, programs and data:

"Central Scientific Computing Complex (Building 1268)

(1) The Contractor shall submit a personnel security questionnaire (NASA Form 531, Name Check Request, for National Agency Check (NAC) investigations and Standard Form 85P, Questionnaire for Public Trust Positions, for specified sensitive positions) and a Fingerprint Card (FD-258 with NASA overprint in Origin Block) to the installation Security Officer for each Contractor employee who requires access. The required forms may be obtained from the installation security office. Employees may have finger-prints taken at the NASA Contract Badge and Pass Office, located at 1 Langley Boulevard (Building No. 1228), only between the hours of 6:30 a.m. and 4:30 p.m., Monday through Friday, or at any police department.

(i) Several months may be required for completion of complex personnel screening investigations. Background screening may not be required for employees with recent or current Federal Government investigations.

(ii) When employee access is necessary prior to completion of personnel screening, each Contractor employee requiring access may be considered for escorted access. The installation Security Officer will establish the eligibility of proposed escorts.

(2) The Contractor shall ensure that each Contractor employee requiring access executes any user responsibility agreements required by the Government prior to access. The Contractor shall provide signed copies of the agreements to the installation Security Officer for inclusion in the employee's security file. Unauthorized access is a violation of law and punishable under the provisions of 18 U.S.C. 1029, 18 U.S.C. 1030 and other applicable statutes.

(3) The Contractor shall notify the installation AIS Manager no later than the end of the day of the termination for cause of an authorized employee's access. The Contractor shall notify the COTR no later than 10 days after an authorized employee no longer requires access for any other type of termination. Verbal notifications shall be confirmed in writing within 30 days.

(b) The Contractor shall incorporate this clause in all subcontracts where the requirements identified in paragraph (a) of this clause are applicable to performance of the subcontract.

I.23 OMBUDSMAN (NASA 1852.215-84) (OCT 1996)

An ombudsman has been appointed to hear and facilitate the resolution of concerns from offerors, potential offerors, and Contractors during the preaward and postaward phases of this acquisition. When requested, the ombudsman will maintain strict confidentiality as to the source of the concern. The existence of the ombudsman is not to diminish the authority of the Contracting Officer, the Source Evaluation Board, or the selection official. Further, the ombudsman does not participate in the evaluation of proposals, the source selection process, or the adjudication of formal contract disputes. Therefore, before consulting with an ombudsman, interested parties must first address their concerns, issues, disagreements, and/or recommendations to the Contracting Officer for resolution. If resolution cannot be made by the Contracting Officer, interested parties may contact the installation ombudsman, Belinda Adams, direct inquiries to Sandra S. Ray at (757) 864-2428. Concerns, issues, disagreements, and recommendations which cannot be resolved at the installation may be referred to the NASA ombudsman, the Deputy Administrator for Procurement, Thomas S. Luedtke, at 202-358-2090. Please do not contact the ombudsman to request copies of the solicitation, verify offer due date, or clarify technical requirements. Such inquiries shall be directed to the Contracting Officer or as specified elsewhere in this document.

I.24 AWARD FEE FOR SERVICE CONTRACTS (FAR 1852.216-76) (MARCH 1998)

(a) The contractor can earn award fee from a minimum of zero dollars to the maximum stated in Section B.4, Award Fee.

(b) Beginning 6 months after the effective date of this contract, the Government shall evaluate the Contractor's performance every 6 months to determine the amount of award fee earned by the contractor during the period. The Contractor may submit a self-evaluation of performance for each evaluation period under consideration. These self-evaluations will be considered by the Government in its evaluation. The Government's Fee Determination Official (FDO) will determine the award fee amounts based on the Contractor's performance in accordance with the Performance Evaluation Plan. The plan may be revised unilaterally by the Government prior to the beginning of any rating period to redirect emphasis.

(c) The Government will advise the Contractor in writing of the evaluation results. The Financial Management Division will make payment based on issuance of unilateral modification by Contracting Officer that will recognize the award fee earned.

(d) After 85 percent of the potential award fee has been paid, the Contracting Officer may direct the withholding of further payment of award fee until a reserve is set aside in an amount that the Contracting Officer considers necessary to protect the Government's interest. This reserve shall not exceed 15 percent of the total potential award fee.

(e) The amount of award fee which can be awarded in each evaluation period is limited to the amounts set forth at Section B, Award Fee. Award fee which is not earned in an evaluation period cannot be reallocated to future evaluation periods.

(f) (1) Provisional award fee payments will not be made under this contract pending the determination of the amount of fee earned for an evaluation period. If applicable, provisional award fee payments will be made to the Contractor on a N/A. The total amount of award fee available in an evaluation period that will be provisionally paid is the lesser of 0 or the prior period's evaluation score.

(2) Provisional award fee payments will be superseded by the final award fee evaluation for that period. If provisional payments exceed the final evaluation score, the Contractor will either credit the next payment voucher for the amount of such overpayment or refund the difference to the Government, as directed by the Contracting Officer.

(3) If the Contracting Officer determines that the Contractor will not achieve a level of performance commensurate with the provisional rate, payment of provisional award fee will be discontinued or reduced in such amounts as the Contracting Officer deems appropriate. The Contracting Officer will notify the Contractor in writing if it is determined that such discontinuance or reduction is appropriate. This determination is not subject to the Disputes clause.

(4) Provisional award fee payments will not be made prior to the first award fee determination by the Government.

(g) Award fee determinations made by the Government under this contract are not subject to the Disputes clause.

I.25 OBSERVANCE OF LEGAL HOLIDAYS (NASA 1852.242-72) (AUG 1992) ALTERNATE I (SEP 1989)

(a) The on-site Government personnel observe the following holidays:

New Year's Day
Labor Day
Martin Luther King Jr.'s Birthday
Columbus Day
President's Day
Veterans Day
Memorial Day
Thanksgiving Day
Independence Day
Christmas Day

Any other day designated by Federal statute, Executive Order, or the President's proclamation.

(b) When any holiday falls on a Saturday, the preceding Friday is observed. When any holiday falls on a Sunday, the following Monday is observed. Observance of such days by Government personnel

shall not by itself be cause for an additional period of performance or entitlement of compensation except as set forth within the contract.

(c) On-site personnel assigned to this contract shall not be granted access to the installation during the holidays in paragraph (a) above, except as follows: the Contractor shall provide sufficient on-site personnel to perform Duty Officer and steam plant requirements as defined in the Statement Work and critical IQ work as directed by the Government.

(d) The Contractor shall place identical requirements, including this paragraph, in all subcontracts that require performance of work on-site, unless otherwise instructed by the Contracting Officer.

PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACHMENTS

SECTION J - LIST OF ATTACHMENTS

Exhibit A	Reserved
Exhibit B	Contract Documentation Requirements
Exhibit C	Small Business Subcontracting Plan
Exhibit D	Register of Wage Determinations and Fringe Benefits
Exhibit E	Collective Bargaining Agreements
Exhibit F	Y2K Guideline and Compliance Verification Form
Exhibit G	Performance Requirements Summary (PRS)
Exhibit H	Example of Contractor Deductions
Exhibit I	Schedule of Deductions

The following are located after the last section of this solicitation:

Attachment 1	Relevant Experience and Past Performance Evaluation Instructions/Questionnaire, 6 pages
Attachment 2	Bid Schedules
Attachment 3	Performance Evaluation Plan
Attachment 4	Bidder's List
Attachment 5	Presolicitation Conference – Attendee List/Charts
Attachment 6	Draft RFP Questions and Answers
Attachment J-1	Reserved
*Attachment J-2	Acronyms
*Attachment J-C1	Inventory of Buildings, Structures, Equipment and/or Systems (All of J-C1 will remain part of the contract except J-C1 - 21B)
*Attachment J-C2	Government Furnished Facilities
Attachment J-C3	Government Furnished Property
	*- 5A Tools and Miscellaneous Property
	*- 5B Government Furnished Furniture
	*- 5C Government Installation Accountable Government Property
	*- 5D Government Furnished Vehicles
*Attachment J-C4	Government Furnished Material
Attachment J-C5	Reserved

*Attachment J-C6	List of Required Records and Reports
Attachment J-C7	Work Authorization Forms
Attachment J-C8	Historical Data
*Attachment J-C9	Preventive Maintenance Program
*Attachment J-C10	Predictive Testing and Inspection
Attachment J-C11	Failure Code Data
Attachment J-C12	Computerized Maintenance Management Systems (CMMS) Maximo®
Attachment J-C13	Reference/Location Maps and Drawings
*Attachment J-C14	Roofing Inspection Schedule
Attachment J-C15	Corrosion Control Projects History
*Attachment J-C16	HVAC Filter Sizes by Facility
*Attachment J-C17	Cooling Tower Systems Chemical Treatment Requirements
*Attachment J-C18	Water Treatment
*Attachment J-C19-17	Corrosion Control and Coating Services Paint Schedule
Attachment J-C20	Reserved
*Attachment J-C21	Requirements for Removing Snow and Ice
Attachment J-C22	Reserved
Attachment J-C23	USEPA Letter re: Disposal of PCB Bushings
Attachment J-C24	Reserved
*Attachment J-C25	List of Meters to be Read
Attachment J-C26	Reserved
*Attachment J-C27	Energy Management and Control System
Attachment J-C28	Reserved
Attachment J-C29	Reserved
Attachment J-C30	SPECSINTACT Table of Contents
Attachment J-C31	Reserved
Attachment J-C32	Reserved
*Attachment J-C33	Equipment Procurement Clauses and In-Service and Acceptance Criteria
*Attachment J-H1	Directives/Reference Manuals/Publications
*Attachment J-TOC	Table of Contents

*Those attachments identified with an asterisk will be a part of the contract.

EXHIBIT B - CONTRACT DOCUMENTATION REQUIREMENTS

I. DOCUMENTATION PREPARATION/SUBMISSION INSTRUCTIONS

A. Safety and Health Plan--Within 30 calendar days after the effective date of the contract, the Contractor shall submit a detailed safety and health plan showing how the Contractor intends to protect the life, health, and well being of NASA and Contractor employees as well as property and equipment. This plan, as approved by the Contracting Officer, should contain, as a minimum the following:

1. Points of Contact and Responsibility--Organizational flow chart and description of responsibilities of each employee in your organization for safety.

2. Employee Safety Training, Certification and Programs--Detailed information on type of training required, parties responsible for certification, and outline of applicable regulations. Detail company programs which emphasize personal safety and motivate employees to be safety conscious.

3. LaRC Safety Policies/Procedures--Recognition of applicable LaRC safety policies and procedures such as Langley Handbook 1710.10, LaRC Red Tag System.

4. Accident Investigation and Reporting--Procedures for investigating and reporting accidents/incidents including immediate notification to the NASA LaRC Safety Manager of all injuries and damage to equipment or facilities. Procedures for responding to a LaRC notice of safety violation.

5. Hazardous Operations--

a. Description of hazardous operations involved in contract performance.

b. Plans for apprising employees of all hazards to which they may be exposed.

c. Proper conditions and precautions for safe use and exposure to hazardous operations. Include recognition of LHB 1710.12, Potentially Hazardous Materials.

6. People with Disabilities--In accordance with the Americans with Disabilities Act, the plans should specify that prior to assigning a person with disabilities to this contract, the Contractor shall contact the Disability Program Manager at (804) 864-7718.

7. Other Safety Considerations--Any other safety considerations unique to your operation.

B. Quarterly Equipment Inventory Report--The Contractor shall submit a Quarterly Government-furnished Equipment Report (See Attachment J-C3) summarizing additions/deletions and maintenance/calibration performed on the equipment. This report shall be submitted within 10 operating days following the end of the reporting period.

C. Quarterly Accident/Injury Report--The Contractor shall submit a Quarterly Accident/Injury Report within 10 operating days after the end of each quarter.

D. Conformable Wage Rate Agreement--Within 15 operating days after the effective date of the contract, the Contractor shall submit a report confirming conformable wage rate agreement as this subject is addressed in the Section I clause entitled "Service Contract Act of 1965," for those individuals employed by the Contractor who are covered by the Service Contract Act, but are not listed in Exhibit D.

E. Collective Bargaining Agreements--The Contractor shall provide the Contracting Officer with copies of any collective bargaining agreements, and amendments thereto, which arise during the course of the contract and which apply to Contractor employees assigned to the contract.

F. Subcontracting Reports--The Contractor shall submit Standard Form 294, Subcontracting Report for Individual Contracts, and Standard Form 295, Summary Subcontractor Report, in accordance with the instructions on the reverse of the form.

In addition to the instructions on the reverse of the SF 295, the Contractor is required to comply with Clause 1852.219-75, Small, Small Disadvantaged and Women-Owned Small Business Subcontracting Reporting.

G. Federal Contractor Veterans Employment Report--In compliance with Clause 52.222-37, Employment Reports on Disabled Veterans and Veterans of the Vietnam Era, the Contractor shall submit the Federal Contractor Veterans Employment Reports (VETS-100) as required by this clause.

H. Evidence of Insurance--The Contractor shall submit evidence of the insurance coverage, required by the NASA Clause 1852.228-75 in Section I entitled "Minimum Insurance Coverage" (i.e., a Certificate of Insurance or other confirmation), to the Contracting Officer prior to performing under this contract. In the event the Government exercises its options to extend the term of the contract, the Contractor shall also present such evidence to the Contracting Officer prior to commencement of performance under the extension.

I. Quality System Documents (ISO 9002) -- The Contractor shall submit the following documents within nine months after the effective date of the contract demonstrating ISO compliance in accordance with H.8:

Quality System Manual - Provide a copy of your Quality System Manual.

Quality System Procedures - Provide a copy of your quality system procedures which address: (1) contract management; (2) customer requirement review and execution; (3) task management, including work order generation and processing; (4) document control; (5) handling of customer supplied product; (6) corrective and preventive action; and (7) training of employees.

J. Year 2000 Compliance Documentation--In accordance with the clause in H.12 the Contractor shall provide for the review and approval of the Contracting Officer the documentation that demonstrates Year 2000 compliance.

K. Small Disadvantaged Business (SDB) Participation Report--The Contractor shall submit an SDB Participation Report in accordance with the Section I Clause 52.219-25, Small Disadvantaged Business Program--Disadvantaged Status and Reporting. The Contractor shall report on the participation of SDB concerns using either Optional Form 312, Small Disadvantaged Business Participation Report, or the Contractor's own format providing the same information as the Optional Form 312. This report shall be submitted every 12 months during the contract period.

II. DOCUMENT DISTRIBUTION REQUIREMENTS

A. Unless otherwise specified elsewhere in this contract, reports and other documentation shall be submitted F.O.B. destination as specified below, addressed as follows:

National Aeronautics and Space Administration
Langley Research Center
Attn: , Mail Stop
Contract NAS1-99000
Hampton, VA 23681-2199

B. The following letter codes designate the recipients of reports and other documentation which are required to be delivered prepaid to Langley Research Center by the Contractor:

A--Contract Specialist, Mail Stop 126

B--Contracting Officer Technical Representative, Mail Stop _____

C--Safety Manager, Mail Stop 429

D--Industry Relations Office, Mail Stop 144

E--Industrial Property Office, Mail Stop 377

F--According to instructions on form

G--Small Business Specialist, Mail Stop 144

H--Management Systems Project Office, Mail Stop 438

C. The following are the distribution requirements for reports and other documentation required with the numeral following the letter code specifying the number of copies to be provided:

DOCUMENT	LETTER CODE AND DISTRIBUTION
Safety and Health Plan	A-1, B-1, C-1
Quarterly Equipment Report	A-1, B-1, E-1
Quarterly Accident/Injury Report	A-1, B-1, C-1
Conformable Wage Rate Agreement	A-1, B-1, D-1
Collective Bargaining Agreement	A-1, B-1, D-1
Subcontracting Report for Individual Contracts (Standard Form 294)	A-1, G-1
Summary Subcontractor Report (Standard Form 295)	F
Federal Contractor Veterans Employment Report (VETS-100)	F
Quality System Documents	A-1, B-1, H-2
Year 2000 Compliance Report	A-1, B-1
SDB Participation Report (Optional Form 312)	A-1, B-1, G-1

D. When the Contract Administrator (A) is not designated above to receive a copy of a report or document, the Contractor shall furnish a copy of the report/document transmittal letter to the Contract Administrator.

III. ADDITIONAL DOCUMENTATION

Additional reporting requirements are detailed in Attachment J-C6.

EXHIBIT C

Small Business Subcontracting Plan

NOTE: This does not apply to Small Business Prime Contractors.

EXHIBIT D

Register of Wage Determinations and Fringe Benefits

- WD No. 94-2544
- GD No. VA980035
- GD No. VA980018

REGISTER OF WAGE DETERMINATIONS UNDER THE SERVICE CONTRACT ACT
By direction of the Secretary of Labor

William W. Gross, Director — Division of Wage Determinations

U.S. DEPARTMENT OF LABOR
EMPLOYMENT STANDARDS ADMINISTRATION
WAGE AND HOUR DIVISION
WASHINGTON, D.C. 20210
Wage Determination No.: 94-2544
Revision No.: 16
Date of Last Revision: 07/29/1998

State(s): North Carolina, Virginia

Area: NORTH CAROLINA COUNTIES OF CAMDEN, CHOWAN, CURRITUCK, GATES, PASQUOTANK, PERQUIMANS.
VIRGINIA COUNTIES OF CHESAPEAKE, GLOUCESTER, HAMPTON, ISLE OF WIGHT, JAMES CITY, MATHEWS, NEWPORT NEWS, NORFOLK, POQUOSON, PORTSMOUTH, SOUTHAMPTON, SUFFOLK, SURRY, VIRGINIA BEACH, WILLIAMSBURG, YORK.

** Fringe Benefits Required For All Occupations Included In This Wage Determination Follow The Occupational Listing **

OCCUPATION CODE AND TITLE	MINIMUM HOURLY WAGE
ADMINISTRATIVE SUPPORT AND CLERICAL:	
01011 Accounting Clerk I	$ 6.75
01012 Accounting Clerk II	$ 8.52
01013 Accounting Clerk III	$10.60
01014 Accounting Clerk IV	$11.50
01030 Court Reporter	$10.81
01050 Dispatcher, Motor Vehicle	$ 9.23
01060 Document Preparation Clerk	$ 9.29
01070 Messenger (Courier)	$ 7.34
01090 Duplicating Machine Operator	$ 9.29
01110 Film/Tape Librarian	$ 9.28
01115 General Clerk I	$ 7.34
01116 General Clerk II	$ 9.03
01117 General Clerk III	$11.23
01118 General Clerk IV	$12.55
01120 Housing Referral Assistant	$11.98
01131 Key Entry Operator I	$ 7.78
01132 Key Entry Operator II	$ 9.79
01191 Order Clerk I	$ 7.40
01192 Order Clerk II	$ 9.68
01261 Personnel Assistant (Employment) I	$ 8.85
01262 Personnel Assistant (Employment) II	$10.23
01263 Personnel Assistant (Employment) III	$10.80
01264 Personnel Assistant (Employment) IV	$12.38
01270 Production Control Clerk	$11.98
01290 Rental Clerk	$ 9.28
01300 Scheduler, Maintenance	$ 9.28
01311 Secretary I	$ 9.28
01312 Secretary II	$10.80
01313 Secretary III	$12.38
01314 Secretary IV	$14.46
01315 Secretary V	$15.18
01320 Service Order Dispatcher	$ 9.28

01341 Stenographer I	$ 8.78
01342 Stenographer II	$ 9.86
01400 Supply Technician	$11.50
01420 Survey Worker(Interviewer)	$10.80
01460 Switchboard Operator-Receptionist	$ 8.08
01510 Test Examiner	$10.80
01520 Test Proctor	$10.80
01531 Travel Clerk I	$ 7.25
01532 Travel Clerk II	$ 7.74
01533 Travel Clerk III	$ 8.32
01611 Word Processor I	$10.00
01612 Word Processor II	$11.27
01613 Word Processor III	$12.62

AUTOMATIC DATA PROCESSING:

03010 Computer Data Librarian	$ 8.26
03041 Computer Operator I	$ 9.25
03042 Computer Operator II	$10.70
03043 Computer Operator III	$13.25
03044 Computer Operator IV	$15.34
03045 Computer Operator V	$16.31
03071 Computer Programmer I 1/	$13.38
03072 Computer Programmer II 1/	$15.15
03073 Computer Programmer III 1/	$18.05
03074 Computer Programmer IV 1/	$21.52
03101 Computer Systems Analyst I 1/	$17.62
03102 Computer Systems Analyst II 1/	$20.28
03103 Computer Systems Analyst III 1/	$24.98
03160 Peripheral Equipment Operator	$ 8.26

AUTOMOTIVE SERVICE:

05005 Automobile Body Repairer, Fiberglass	$16.22
05010 Automotive Glass Installer	$14.79
05040 Automotive Worker	$14.79
05070 Electrician, Automotive	$15.49
05100 Mobile Equipment Servicer	$13.37
05130 Motor Equipment Metal Mechanic	$16.22
05160 Motor Equipment Metal Worker	$14.79
05190 Motor Vehicle Mechanic	$16.22
05220 Motor Vehicle Mechanic Helper	$12.61
05250 Motor Vehicle Upholstery Worker	$14.07
05280 Motor Vehicle Wrecker	$14.79
05310 Painter, Automotive	$15.49
05340 Radiator Repair Specialist	$14.07
05370 Tire Repairer	$13.37
05400 Transmission Repair Specialist	$16.22

FOOD PREPARATION AND SERVICE:

07010 Baker	$ 8.68
07041 Cook I	$ 7.85
07042 Cook II	$ 8.68
07070 Dishwasher	$ 6.05
07100 Food Service Worker (Cafeteria Worker)	$ 6.05

07130 Meat Cutter	$ 8.68
07250 Waiter/Waitress	$ 6.58

FURNITURE MAINTENANCE AND REPAIR:

09010 Electrostatic Spray Painter	$15.49
09040 Furniture Handler	$11.21
09070 Furniture Refinisher	$15.49
09100 Furniture Refinisher Helper	$12.61
09110 Furniture Repairer, Minor	$14.07
09130 Upholsterer	$15.49

GENERAL SERVICES AND SUPPORT:

11030 Cleaner, Vehicles	$ 6.05
11060 Elevator Operator	$ 6.05
11090 Gardener	$ 7.75
11121 Housekeeping Aide I	$ 5.93
11122 Housekeeping Aide II	$ 6.49
11150 Janitor	$ 6.05
11210 Laborer, Grounds Maintenance	$ 6.58
11240 Maid or Houseman	$ 5.52
11270 Pest Controller	$ 8.25
11300 Refuse Collector	$ 6.05
11330 Tractor Operator	$ 7.38
11360 Window Cleaner	$ 6.58

HEALTH:

12020 Dental Assistant	$10.26
12040 Emergency Medical Technician/ Paramedic Ambulance Driver	$10.26
12070 Licensed Practical Nurse I	$ 8.17
12071 Licensed Practical Nurse II	$ 9.17
12072 Licensed Practical Nurse III	$10.26
12100 Medical Assistant	$ 9.17
12130 Medical Laboratory Technician	$ 9.17
12160 Medical Record Clerk	$ 9.17
12190 Medical Record Technician	$12.71
12221 Nursing Assistant I	$ 6.66
12222 Nursing Assistant II	$ 7.49
12223 Nursing Assistant III	$ 8.17
12224 Nursing Assistant IV	$ 9.17
12250 Pharmacy Technician	$11.44
12280 Phlebotomist	$ 9.17
12311 Registered Nurse I	$12.71
12312 Registered Nurse II	$15.55
12313 Registered Nurse II, Specialist	$15.55
12314 Registered Nurse III	$18.82
12315 Registered Nurse III, Anesthetist	$18.82
12316 Registered Nurse IV	$22.55

INFORMATION AND ARTS:

13002 Audiovisual Librarian	$11.96
13011 Exhibits Specialist I	$15.02

13012 Exhibits Specialist II	$18.25
13013 Exhibits Specialist III	$20.27
13041 Illustrator I	$15.02
13042 Illustrator II	$18.25
13043 Illustrator III	$20.27
13047 Librarian	$13.75
13050 Library Technician	$11.02
13071 Photographer I	$11.33
13072 Photographer II	$15.02
13073 Photographer III	$18.25
13074 Photographer IV	$20.27
13075 Photographer V	$24.53

LAUNDRY, DRY CLEANING, PRESSING:

15010 Assembler	$ 5.79
15030 Counter Attendant	$ 5.79
15040 Dry Cleaner	$ 6.94
15070 Finisher, Flatwork, Machine	$ 5.79
15090 Presser, Hand	$ 5.79
15100 Presser, Machine, Dry Cleaning	$ 5.79
15130 Presser, Machine, Shirts	$ 5.79
15160 Presser, Machine, Wearing Apparel, Laundry	$ 5.79
15190 Sewing Machine Operator	$ 7.32
15220 Tailor	$ 7.86
15250 Washer, Machine	$ 6.19

MACHINE TOOL OPERATION AND REPAIR:

19010 Machine-tool Operator (Toolroom)	$15.49
19040 Tool and Die Maker	$17.84

MATERIALS HANDLING AND PACKING:

21010 Fuel Distribution System Operator	$13.37
21020 Material Coordinator	$12.19
21030 Material Expediter	$12.19
21040 Material Handling Laborer	$ 7.44
21050 Order Filler	$ 8.46
21071 Forklift Operator	$ 9.05
21080 Production Line Worker (Food Processing)	$10.54
21100 Shipping/Receiving Clerk	$ 8.85
21130 Shipping Packer	$ 8.85
21140 Store Worker I	$ 8.40
21150 Stock Clerk (Shelf Stocker, Store Worker II)	$10.22
21210 Tools and Parts Attendant	$10.95
21400 Warehouse Specialist	$10.54

MECHANICS AND MAINTENANCE AND REPAIR:

23010 Aircraft Mechanic	$16.22
23040 Aircraft Mechanic Helper	$12.61
23050 Aircraft Quality Control Inspector	$16.94
23060 Aircraft Servicer	$14.07
23070 Aircraft Worker	$14.79
23100 Appliance Mechanic	$15.49

23120 Bicycle Repairer	$13.37
23125 Cable Splicer	$16.22
23130 Carpenter, Maintenance	$15.49
23140 Carpet Layer	$14.79
23160 Electrician, Maintenance	$16.22
23181 Electronics Technician, Maintenance I	$13.99
23182 Electronics Technician, Maintenance II	$14.31
23183 Electronics Technician, Maintenance III	$15.33
23260 Fabric Worker	$14.07
23290 Fire Alarm System Mechanic	$16.22
23310 Fire Extinguisher Repairer	$13.37
23340 Fuel Distribution System Mechanic	$16.22
23370 General Maintenance Worker	$14.79
23400 Heating, Refrigeration and Air Conditioning Mechanic	$16.22
23430 Heavy Equipment Mechanic	$16.22
23440 Heavy Equipment Operator	$16.22
23460 Instrument Mechanic	$16.22
23470 Laborer	$ 9.68
23500 Locksmith	$15.49
23530 Machinery Maintenance Mechanic	$16.18
23550 Machinist, Maintenance	$16.22
23580 Maintenance Trades Helper	$12.61
23640 Millwright	$16.22
23700 Office Appliance Repairer	$15.49
23740 Painter, Aircraft	$15.49
23760 Painter, Maintenance	$15.49
23790 Pipefitter, Maintenance	$16.22
23800 Plumber, Maintenance	$15.49
23820 Pneudraulic Systems Mechanic	$16.22
23850 Rigger	$16.22
23870 Scale Mechanic	$14.79
23890 Sheet-metal Worker, Maintenance	$16.22
23910 Small Engine Mechanic	$14.79
23930 Telecommunications Mechanic I	$16.22
23940 Telecommunications Mechanic II	$16.94
23950 Telephone Lineman	$16.22
23960 Welder, Combination, Maintenance	$16.22
23965 Well Driller	$16.22
23970 Woodcraft Worker	$16.22
23980 Woodworker	$13.37

PERSONAL NEEDS:

24570 Child Care Attendant	$ 6.34
24580 Child Care Center Clerk	$ 7.91
24600 Chore Aide	$ 5.15
24630 Homemaker	$ 8.33

PLANT AND SYSTEM OPERATION:

25010 Boiler Tender	$16.22
25040 Sewage Plant Operator	$15.49
25070 Stationary Engineer	$16.22
25190 Ventilation Equipment Tender	$12.61
25210 Water Treatment Plant Operator	$15.49

PROTECTIVE SERVICE:

27004 Alarm Monitor	$ 7.21
27006 Corrections Officer	$11.47
27010 Court Security Officer	$11.91
27040 Detention Officer	$11.47
27070 Firefighter	$11.47
27101 Guard I	$ 6.03
27102 Guard II	$ 7.21
27130 Police Officer	$14.25

STEVEDORING/LONGSHOREMEN SERVICE OCCUPATIONS:

28010 Blocker and Bracer	$24.47
28020 Hatch Tender	$16.87
28030 Line Handler	$18.59
28040 Stevedore I	$11.80
28050 Stevedore II	$12.96

TECHNICAL:

29010 Air Traffic Control 2/Specialist, Center	$23.96
29011 Air Traffic Control 2/Specialist, Station	$16.53
29012 Air Traffic Control 2/Specialist, Terminal	$18.20
29023 Archeological Technician I	$11.43
29024 Archeological Technician II	$12.85
29025 Archeological Technician III	$15.87
29030 Cartographic Technician	$15.87
29035 Computer Based Training Specialist/Instructor	$17.62
29040 Civil Engineering Technician	$15.87
29061 Drafter I	$10.07
29062 Drafter II	$11.33
29063 Drafter III	$14.24
29064 Drafter IV	$17.30
29081 Engineering Technician I	$11.50
29082 Engineering Technician II	$12.30
29083 Engineering Technician III	$15.15
29084 Engineering Technician IV	$18.35
29085 Engineering Technician V	$21.43
29086 Engineering Technician VI	$26.48
29090 Environmental Technician	$15.87
29100 Flight Simulator Instructor (Pilot)	$20.28
29150 Graphic Artist	$17 62
29160 Instructor	$15 23
29210 Laboratory Technician	$11 83
29240 Mathematical Technician	$15 87
29361 Paralegal/Legal Assistant I	$10 80
29362 Paralegal/Legal Assistant II	$13 12
29363 Paralegal/Legal Assistant III	$16.05
29364 Paralegal/Legal Assistant IV	$19.42
29390 Photooptics Technician	$15.87
29480 Technical Writer	$15.02
29491 Unexploded Ordinance Technician I	$15.55
29492 Unexploded Ordinance Technician II	$18.82
29493 Unexploded Ordinance Technician III	$22.85
29494 Unexploded Safety Escort	$15.55

29495 Unexploded Sweep Personnel	$15.55
29620 Weather Observer, Senior 3/	$12.80
29621 Weather Observer, Combined 3/Upper Air and Surface Programs	$11.83
29622 Weather Observer, Upper Air 3/	$11.83

TRANSPORTATION/MOBILE EQUIPMENT OPERATION:

31030 Bus Driver	$ 9.42
31260 Parking and Lot Attendant	$ 6.98
31290 Shuttle Bus Driver	$ 9.01
31300 Taxi Driver	$ 8.50
31361 Truckdriver, Light Truck	$ 9.01
31362 Truckdriver, Medium Truck	$ 9.42
31363 Truckdriver, Heavy Truck	$10.50
36364 Truckdriver, Tractor-Trailer	$10.50

MISCELLANEOUS :

99020 Animal Caretaker	$ 7.00
99030 Cashier	$ 5.93
99041 Carnival Equipment Operator	$ 7.38
99042 Carnival Equipment Repairer	$ 7.75
99043 Carnival Worker	$ 6.05
99050 Desk Clerk	$ 7.00
99095 Embalmer	$17.63
99300 Lifeguard	$ 5.36
99310 Mortician	$17.63
99350 Park Attendant (Aide)	$ 6.73
99400 Photofinishing Worker (Photo Lab / Dark Room Technician)	$ 6.01
99500 Recreation Specialist	$13.04
99510 Recycling Worker	$ 7.41
99610 Sales Clerk	$ 5.36
99620 School Crossing Guard (Crosswalk Attendant)	$ 6.05
99630 Sports Official	$ 5.36
99658 Survey Party Chief	$ 7.85
99659 Surveying Technician	$ 7.50
99660 Surveying Aide	$ 5.15
99690 Swimming Pool Operator	$ 6.68
99720 Vending Machine Attendant	$ 7.41
99730 Vending Machine Repairer	$ 8.68
99740 Vending Machine Repairer Helper	$ 7.41

**** Fringe Benefits Required For All Occupations Included In This Wage Determination ****

HEALTH & WELFARE: Life, accident, and health insurance plans, sick leave, pension plans, civic and personal leave, severance pay, and savings and thrift plans. Minimum employer contributions costing an average of $2.56 per hour computed on the basis of all hours worked by service employees employed on the contract.

VACATION: 2 weeks paid vacation after 1 year of service with a contractor or successor; 3 weeks after 8 years; 4 weeks after 15 years. Length of service includes the whole span of continuous service with the present contractor or successor, wherever employed, and with predecessor contractors in the performance of similar work at the same Federal facility. (See 29 CFR. 4.173)

HOLIDAYS: Minimum of ten paid holidays per year: New Year's Day, Martin Luther King Jr.'s Birthday, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans' Day, Thanksgiving Day, and Christmas Day. (A contractor may substitute for any of the named holidays another day off with pay in accordance with a plan communicated to the employees involved.) (See 29 CFR 4.174)

1 Does not apply to employees employed in a bona fide executive, administrative, or professional capacity as defined and delineated in 29 CFR 541. (See 29 CFR 4.156)

2 APPLICABLE TO AIR TRAFFIC CONTROLLERS ONLY - NIGHT DIFFERENTIAL: An employee is entitled to pay for all work performed between the hours of 6:00 P.M. and 6:00 A.M. at the rate of basic pay plus a night pay differential amounting to 10 percent of the rate of basic pay.

3 WEATHER OBSERVERS - NIGHT PAY & SUNDAY PAY: If you work at night as a part of a regular tour of duty, you will earn a NIGHT DIFFERENTIAL and receive an additional 10% of basic pay for any hours worked between 6pm and 6am. If you are a full-time employee (40 hours a week) and Sunday is part of your regularly scheduled workweek, you are paid at your rate of basic pay plus a Sunday premium of 25% of your basic rate for each hour of Sunday work which is not overtime (i.e. occasional work on Sunday outside the normal tour of duty is considered overtime work).

** UNIFORM ALLOWANCE **

If employees are required to wear uniforms in the performance of this contract (either by the terms of the Government contract, by the employer, by the state or local law, etc.), the cost of furnishing such uniforms and maintaining (by laundering or dry cleaning) such uniforms is an expense that may not be borne by an employee where such cost reduces the hourly rate below that required by the wage determination. The Department of Labor will accept payment in accordance with the following standards as compliance:

The contractor or subcontractor is required to furnish all employees with an adequate number of uniforms without cost or to reimburse employees for the actual cost of the uniforms. In addition, where uniform cleaning and maintenance is made the responsibility of the employee, all contractors and subcontractors subject to this wage determination shall (in the absence of a bona fide collective bargaining agreement providing for a different amount, or the furnishing of contrary affirmative proof as to the actual cost), reimburse all employees for such cleaning and maintenance at a rate of $4.25 per week (or $.85 cents per day). However, in those instances where the uniforms furnished are made of "wash and wear" materials, may be routinely washed and dried with other personal garments, and do not require any special treatment such as dry cleaning, daily washing, or commercial laundering in order to meet the cleanliness or appearance standards set by the terms of the Government contract, by the contractor, by law, or by the nature of the work, there is no requirement that employees be reimbursed for uniform maintenance costs.

** NOTES APPLYING TO THIS WAGE DETERMINATION **

Source of Occupational Titles and Descriptions:

The duties of employees under job titles listed are those described in the "Service Contract Act Directory of Occupations," Fourth Edition, January 1993, as amended by the Second Supplement, dated August 1995, unless otherwise indicated. This publication may be obtained from the Superintendent of Documents, at 202-783-3238, or by writing to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Copies of specific job descriptions may also be obtained from the appropriate contracting officer.

REQUEST FOR AUTHORIZATION OF ADDITIONAL CLASSIFICATION AND WAGE RATE
{Standard Form 1444 (SF 1444)}

Conformance Process:

The contracting officer shall require that any class of service employee which is not listed herein and which is to be employed under the contract (i.e., the work to be performed is not performed by any classification listed in the wage determination), be classified by the contractor so as to provide a reasonable relationship (i.e., appropriate level of skill comparison) between such unlisted classifications and the classifications listed in the wage determination. Such conformed classes of employees shall be paid the monetary wages and furnished the fringe benefits as are determined. Such conforming process shall be initiated by the contractor prior to the performance of contract work by such unlisted class(es) of employees. The conformed classification, wage rate, and/or fringe benefits shall be retroactive to the commencement date of the contract. (See Section 4.6 (C)(vi)) When multiple wage determinations are included in a contract, a separate SF 1444 should be prepared for each wage determination to which a class(es) is to be conformed.

The process for preparing a conformance request is as follows:

1) When preparing the bid, the contractor identifies the need for a conformed occupation(s) and computes a proposed rate(s).

2) After contract award, the contractor prepares a written report listing in order proposed classification title(s), a Federal grade equivalency (FGE) for each proposed classification(s), job description(s), and rationale for proposed wage rate(s), including information regarding the agreement or disagreement of the authorized representative of the employees involved, or where there is no authorized representative, the employees themselves. This report should be submitted to the contracting officer no later than 30 days after such unlisted class(es) of employees performs any contract work.

3) The contracting officer reviews the proposed action and promptly submits a report of the action, together with the agency's recommendations and pertinent information including the position of the contractor and the employees, to the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, for review. (See Section 4.6(b)(2) of Regulations 29 CFR Part 4).

4) Within 30 days of receipt, the Wage and Hour Division approves, modifies, or disapproves the action via transmittal to the agency contracting officer, or notifies the contracting officer that additional time will be required to process the request.

5) The contracting officer transmits the Wage and Hour decision to the contractor.

6) The contractor informs the affected employees.

Information required by the Regulations must be submitted on SF 1444 or bond paper.

When preparing a conformance request, the "Service Contract Act Directory of Occupations" (the Directory) should be used to compare job definitions to insure that duties requested are not performed by a classification already listed in the wage determination. Remember, it is not the job title, but the required tasks that determine whether a class is included in an established wage determination. Conformances may not be used to artificially split, combine, or subdivide classifications listed in the wage determination.

GENERAL DECISION VA980035 11/06/98 VA35
General Decision Number VA980035

Superseded General Decision No. VA970035

State: Virginia

Construction Type:
BUILDING

County(ies):
HAMPTON*

*INDEPENDENT CITY OF HAMPTON (INCLUDING LANGLEY AIR FORCE BASE AND FORT MONROE)

BUILDING CONSTRUCTION PROJECTS (Does not include single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	02/13/1998
1	05/22/1998
2	11/06/1998

COUNTY(ies):
HAMPTON*

ENGI0147I 05/01/1998

	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
Cranes, Under 90 tons	17.73	4.58
Fork Lift	14.18	4.58

IRON0079G 05/01/1998

	Rates	Fringes
IRONWORKERS, STRUCTURAL	17.20	4.65+9%

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* PAIN1846A 11/01/1998

	Rates	Fringes
GLAZIERS	16.05	2.23

SUVA1055A 05/01/1993

	Rates	Fringes
BRICKLAYERS	14.50	
CARPENTERS	12.13	2.15
CEMENT MASONS	11.78	
ELECTRICIANS	11.70	
LABORERS:		
Unskilled	6.85	
Mason Tenders, Brick	7.00	
PAINTERS	9.19	
POWER EQUIPMENT OPERATORS:		
Backhoes	12.00	

Loaders	12.00	
SPRINKLER FITTERS	11.25	1.63

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board

U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

GENERAL DECISION VA980018 08/14/98 VA18
General Decision Number VA980018

Superseded General Decision No. VA970018

State: Virginia

Construction Type:
HEAVY

County(ies):
GLOUCESTER NEWPORT NEWS* YORK
HAMPTON* POQUOSON*
JAMES CITY WILLIAMSBURG*

*INDEPENDENT CITIES

HEAVY CONSTRUCTION PROJECTS (Excluding Sewer and Water Lines)

Modification Number	Publication Date
0	02/13/1998
1	05/22/1998
2	07/10/1998
3	08/14/1998

COUNTY(ies):
GLOUCESTER NEWPORT NEWS* YORK
HAMPTON* POQUOSON*
JAMES CITY WILLIAMSBURG*

* ASBE0083B 05/01/1998

	Rates	Fringes
ASBESTOS WORKERS/INSULATORS Includes the application of all insulating materials, protective coverings, coatings, and finishes to all types of mechanical systems. Also the application of firestopping material for wall openings and penetrations in walls, floors, ceilings and curtain walls.	16.58	4.24

BOIL0045B 10/01/1997

	Rates	Fringes
BOILERMAKERS	20.02	9.91

CARP0613C 05/01/1995

	Rates	Fringes
CARPENTERS & PILEDRIVERS	13.70	3.65

ELEC0666G 12/01/1997

	Rates	Fringes
ELECTRICIANS:		
James City County	18.95	26.25%

ELEC1340E 12/01/1997

	Rates	Fringes
ELECTRICIANS, LINEMEN, CABLE SPLICERS:		
From 7812 Warwick Blvd., Newport News, Virginia, to North of Route 460 and South of the Piankatank River, including the boundaries of Newport News and York County, including Fort Eustis, Naval Mine Depot, Naval Mine Warfare School, American Oil Refinery, VEPCO, Yorktown Generating Station, Cheatham Annex, Camp Peary, and Gloucester County	17.05	3.86
Beyond North of Route 460 and South of the Piankatank River.	18.05	3.98

ENGI0147A 05/01/1998

	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
Cranes and Mechanics	17.73	4.58
Fork Lift	14.18	4.58
Oilers	10.99	4.58

ENGI0147K 05/01/1995

	Rates	Fringes
POWER EQUIPMENT OPERATORS (PIPELINE):		
Backhoes	23.54	5.46
Boring Machine	17.46	4.96
Bulldozers	23.54	5.46
Cranes	23.54	5.46
Oilers	12.07	3.96
Side Boom	23.54	5.46

IRON0079E 05/01/1998

	Rates	Fringes
IRONWORKERS:		
Structural & Reinforcing	17.20	4.65+9%

PAIN1100C 01/01/1998

	Rates	Fringes
PAINTERS:		
Bridges, Heavy Industrial Plants, Mills or any Tanks, Structural Steel, Sandblasting	15.25	.72

PLAS0229B 08/01/1998

	Rates	Fringes
CEMENT MASONS	15.00	2.55

PLUM0540D 05/01/1998

	Rates	Fringes
PLUMBERS & PIPEFITTERS	18.70	5.50

SUVA2030A 06/22/1993

	Rates	Fringes
BRICKLAYERS	15.15	
LABORERS:		
Laborers (Including Mason Tenders, Brick)	7.61	1.08
Landscape Laborers	7.71	
Pipelayers	8.16	1.00
POWER EQUIPMENT OPERATORS:		
Backhoes	11.46	
Bulldozers	11.77	1.82
Excavators	12.65	2.04
Loaders	11.02	2.10
Rollers	9.21	
TRUCK DRIVERS	8.63	

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

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U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

EXHIBIT E

Collective Bargaining Agreements

- CBA Local Union No. 1340 - EG&G
- CBA District Lodge 74 - DTSV

*Honor one year, then renegotiate.

AGREEMENT BETWEEN

Langley, Inc.

AND

INTERNATIONAL BROTHERHOOD OF ELECTRICAL WORKERS,

LOCAL UNION NO. 1340,

AFL-CIO

August 1, 1997

INDEX

Agreement Between

Langley, Inc.

and

International Brotherhood of Electrical Workers, AFL-CIO
Local Union No. 1340

PREAMBLE

THIS AGREEMENT entered into this 1st day of August 1997 by and between EG&G Langley, Inc (hereinafter referred to as the "Company"), and Local Union No. 1340, of the International Brotherhood of Electrical Workers, AFL-CIO, (hereinafter referred to as the "Union"), for the purpose of all maintenance work assigned to the Company by the National Aeronautics and Space Administration, (hereinafter referred to as "NASA"), under the Facility and Equipment Support Services (FESS) Contract and performed by the employees of the Company covered by this agreement only within the NASA Langley Research Center (Station) site and sites and properties related thereto.

WHEREAS, the Company is engaged in the business of maintenance (as defined in Article V) and this work is of importance to the Union, and it being recognized that there is a difference in the conditions required to perform this type of work, the Union and the Company wish to enter into an agreement for their benefit covering work of this nature.

WHEREAS, the Union has in their membership within the area, members competent and qualified to perform the work of the Company.

WHEREAS, the Company now employs members of the Union on maintenance work recognized by the Union.

WHEREAS, the Company and the Union desire to mutually establish hours of work and working conditions for the workers to the end that satisfactory conditions and harmonious relations will continue to exist for the benefit of both parties to this Agreement.

WHEREAS, the Company and the Union agree that, due to particular nature of the work covered by this Agreement, there shall be no lockouts or strikes during the life of this Agreement, and provisions must be made to achieve this end.

The Union, its members and all of those employees represented by the Union, agree to use its and/or their best endeavors to protect the interest of the Company, to consider the Company's property and to give service and/or work of the highest productive quality.

The Company and the Union have a common sympathetic interest in the maintenance industry. Therefore, a working system and harmonious relations are necessary to improve the relationship between the Company, the Union and the Public. Progress in industry demands a mutuality of confidence between the Company and the Union. All will benefit by continuous peace and by adjusting any differences by rational, common sense methods.

NOW, THEREFORE, in consideration of the mutual promises and agreements herein contained, the parties hereto agree to as follows:

ARTICLE I

TERM OF AGREEMENT

Section 1. This Agreement shall take effect August 1, 1997, and shall remain in effect through July 31, 2000 and shall continue in effect from year to year thereafter, unless changed or terminated.

Section 2. Either party desiring to change or terminate this Agreement must notify the other in writing at least sixty (60) days prior to August 1, 2000. When Notice for changes only is given, the nature of the changes desired must be specified in the Notice and until a satisfactory conclusion is reached in the matter of such changes, the original provision shall remain in full force and effect. Neither party hereto may reopen this Agreement for negotiations on any issue, either economic or non-economic, during this contract period or any extension thereof, except as provided in Section 3 below.

Section 3. This Agreement shall be subject to amendments at any time by mutual consent of the parties hereto. Any such amendment agreed upon shall be reduced to writing and signed by the parties hereto. The Union may submit the amendments to the International Office of the Union, as it relates solely to compliance with State and Federal regulations.

ARTICLE II

RECOGNITION

Section 1. The bargaining unit under this Agreement shall comprise all maintenance employees of the Company now employed or in the future for maintenance work at the NASA Langley Research Center (Station).

Section 2. The Company:

(a) Agrees to recognize the Union as herein duly constituted for the purpose of bargaining collectively and administering this Agreement for the employees.

(b) Agrees to bargain collectively with the Union and to be governed by the terms of this Agreement.

ARTICLE III
MANAGEMENT RIGHTS

The Union recognizes that the Company retains the sole right to manage its business, as such right existed prior to the execution of this agreement except only as expressly abridged by a specific provision of this Agreement. The Company reserves and retains, solely and exclusively, all of its inherent rights to manage the business including but not limited to, the direction of the working force including the right to hire, assign, suspend or discharge for just cause and to make rules governing the conduct of the working force which will be applied in a reasonable fashion. The Company and Union, by mutual agreement, may change or add to the General Work Rules contained in this Agreement.

The Company has a vital interest in maintaining safe, healthful and efficient working conditions for its employees. Being under the influence of alcohol or drugs (illegal or prescribed) on the job may pose serious safety and health risks not only to the user but to all industrial equipment vehicles and other employees. The possession and use, distribution or sale of an illegal substance or alcohol in the work place shall not be tolerated and may result in termination and prosecution. The Company recognizes that its own health and future are dependent upon the physical and psychological health of its employees. Accordingly, it is the right, obligation, and intent of the Company to maintain a safe, healthful, and efficient working environment for all of its employees and to protect Company/NASA property, equipment, and operations. The Union recognizes and supports the Company's drug testing policy as agreed to on 1 March 1989. The Union has also agreed to as part of this agreement, the memorandum of Random Drug Testing as established August 1, 1994.

ARTICLE IV
UNION SECURITY

It is agreed that all employees coming under the terms of this Agreement shall be required to make application to joining the Union within thirty (30) days of employment or Agreement, whichever is later, and as a condition of continued employment, must maintain membership for the life of this Agreement and any renewal thereof. In the event the Union requests the contractor to

dismiss an employee to comply with the provisions of this Article, such request shall be complied with by the contractor. The Union will notify all current and new-hire employees of their rights under union security.

ARTICLE V

SCOPE OF WORK

Section 1. This Agreement covers all maintenance work assigned to the Company by NASA under the Facility and Equipment Support Services Contract and performed by the employees of the Company covered by this Agreement only with the NASA, Langley Research Center (Station) site and sites and properties relating thereto.

Section 2. This scope of this Agreement does not cover work required to erect new major facilities. Work performed of this nature shall be done in accordance with any existing agreements between the company and the building construction trades. This provision shall not serve to cause the Company to abrogate its contract with NASA.

ARTICLE VI

DEFINITIONS

Maintenance is defined as any work assigned by the Company which is consistent with the terms of the Company's Facility and Equipment Support Service Contract with NASA for the purpose of preserving NASA's facilities and wind tunnels in suitable working condition. Said work will be consistent with the Company's obligation to perform any such work under the Service Contract Act.

ARTICLE VII

GRIEVANCE PROCEDURE

Section 1. All grievances that may arise will be handled in the following manner. Any written grievance must be filed within five (5) working days of the event given rise to the grievance. In cases involving dismissal or suspension for just cause, the grievance may be instituted at Step III.

STEP I: Prior to processing any written grievance, any employee who believes he has a grievance, must discuss it with his immediate supervisor, with his steward being present. If the employee is dissatisfied with the answer given by his supervisor, or no answer is given within three (3) normal work days, Step II will be followed.

STEP II: The Employee and his steward shall present to the immediate foreman a written grievance form provided by the Company (which has been approved by Company and

Union) stating what the grievance is, and the remedy sought. If the foreman's decision is not satisfactory, or is not given within three (3) normal work days, Step III will be followed.

STEP III: The grievance shall be forwarded by the Union steward to the Industrial Relations Manager or his designated representative within three (3) normal work days after the foreman's unsatisfactory written decision, or failure to give a decision. The Industrial Relations Manager shall meet with the Local Business Manager, or his designated representative, within three (3) days of receipt of grievance. If the Industrial Relations Manager's decision is not satisfactory, or is not given within five (5) normal work days, Step IV will be followed.

STEP IV: The Union may, no later than five (5) working days after receipt of the Company's decision in Step III, submit the matter to arbitration by requesting that the Federal Mediation and Conciliation Service submit a list of five (5) names of arbitrators, from which the Company and the Union shall choose an impartial arbitrator to decide the matter. Following receipt of the list of names of arbitrators, the parties shall then alternately strike the names from the panel and the name remaining shall be the Arbitrator in the case. The determination of which Party is to strike first shall be determined by a coin flip. Striking shall take place within seven (7) days of receipt of the arbitrator list.

Section 2. In arbitration proceedings, the expense of the impartial Arbitrator shall be shared by both parties.

Section 3. The Company shall attempt to provide facilities at Langley Research Center (Station) provided, however, if no facilities are available at the Center, the Union and Company agree to equally share expenses incurred in the hearing room.

Section 4. The findings of the Arbitrator shall be binding on both parties.

Section 5. All time limits stated in this Article shall be treated as jurisdictional in nature, and the failure to follow any of the set time limits shall result in the grievance being void and waived, and the matter shall end without resort to arbitration. A normal work day is defined as any day on which any bargaining unit employee is at work, Monday through Friday, excepting holidays.

Section 6. Except by mutual written agreement to the contrary, only one grievance shall be taken to arbitration at any time before the same Arbitrator.

Section 7. The impartial Arbitrator shall only have jurisdiction and authority to determine the meaning, application of, or compliance with the provisions of this Agreement and shall not have jurisdiction or authority to add or detract from or alter in any way such provisions or any rules of discipline attached hereto.

ARTICLE VIII

UNION REPRESENTATIVES

Section 1. Representatives of the Union shall have access to the job during working hours on Union business. They shall, as regulations on the site permit, obtain specific authorization for each visit from the Company when required.

Section 2. The Union has the right to appoint a Steward at the Company. The Company shall be notified and furnished the name of the Steward in writing. The Company will deal with any such designated Steward until such designated Steward has been revoked in writing by the Union. Such Steward shall be allowed reasonable time during the regular working hours, without loss of pay, to see that the terms and conditions of this Agreement are observed. In no event shall the presence of the Steward disrupt or interfere with the work of the Company. No Steward shall be discriminated against by the Company because of his faithful performance of duties as Steward.

The Steward shall be given preferential seniority provided he/she has been performing the steward duties for six (6) consecutive months and has not less than twelve (12) months seniority.

ARTICLE IX

REFERRAL OF EMPLOYEES

Section 1. When employees are required, the Company shall request from the Local Union that the required number of applicants be referred for employment. The following standards shall apply:

(a) The selection of applicants for referral to jobs shall be on a nondiscriminatory basis and shall not be based on, or in any way affected by Union membership, by-laws, rules, regulations, constitutional provisions, or any other aspect of obligation of Union membership, policy, or requirement. Local Union 1340, International Brotherhood of Electrical Workers, does accept application for referral to the Maintenance Project covered by this Agreement regardless of race, color, sex, handicap, national or ethnic origin. It does not discriminate on the basis of race, color, sex, handicap, national or ethnic origin in the referral of applicants.

(b) The Company shall retain the right to select or reject any applicant referred by the Local Union, and shall have the further right to select any applicant from among those referred by the Union. When the Company requests an applicant or referral from the Union, the Union will refer such applicant within forty-eight (48) hours [two (2) working days] and in the event the Union fails to refer an applicant within

that period of time, the Company is free to utilize other sources to fill its manpower needs.

(c) The Local Union shall post in places where notices to employees and applicants for employment are customarily posted, all provisions relating to the function of its hiring arrangements, including the provisions herein set forth. The Company shall similarly post in places where notices to employees and applicants for employment are customarily posted, all provisions relating to the function and operation of the hiring arrangements including these provisions.

(d) The Union agrees to indemnify and hold the Company harmless against any and all claims, demands, suits, costs and/or any other forms of action and assumes any and all liabilities and expenses that shall arise out of or by reason of the Union's administration of the hiring hall referred to in this Article. It is also expressly understood that those applicants that are referred by the Union will be selected on a nondiscriminatory basis and that the Company shall assume the liabilities that attach for failure to hire an applicant referred by the Union.

(e) The Union agrees to recognize the Company's Affirmative Action Program and will refer qualified job applicants according to established underutilization goals.

Section 2. In addition to the foregoing minimum standards, the Local Union agrees to refer all applicants for employment to this project according to the standards for criteria uniformly applied to any project in the area. All exclusive referral procedures must establish Appeal Boards and the Company and the applicable Local Union agree to be bound by all decisions of the Appeal Board.

Section 3. The Company agrees to be bound by the hiring practices in the local area not inconsistent with the terms of this Agreement, provided that, where the hiring provisions or practices that prevail in a local area are on other than an exclusive basis, such provisions or practices shall be applicable if not in violation of either State or Federal law.

Section 4. The Company and the Union therefore agree that the Local Union will offer its area hiring plan to the Company by letter of transmittal. The Company agrees that upon reviewing said plan, it will offer a letter to the Union in which they acknowledge and accept the hiring plan. This letter will then, by agreement, become part of this Agreement.

Section 5. The designation and determination of the number of foreman and other supervisory personnel is the responsibility of the Company.

Section 6. The above hiring provisions have been entered into in order to comply with the Mountain Pacific doctrine of the National Labor Relations Board. Upon any Board or court decision

or administrative ruling modifying or changing the Mountain Pacific doctrine, either party to this Agreement shall have the right to re-open negotiations pertaining to this Article by giving the other party thirty (30) days written notice.

ARTICLE X

WAGES

Section 1. Wage rages set forth in Appendix "A" attached hereto, and made a part hereof, are to be paid to those employees listed under Appendix "A" for the term of this Agreement.

Section 2. Wages will be paid by-weekly by means of direct deposit or by check to be delivered to the job site. The payroll period to close at midnight on Friday.

Section 3. The Company agrees to make available to all employees United States Savings Bonds through payroll deduction.

Section 4. Working and Basic Dues Checkoff: The Company agrees that it will make Union Working Dues Deductions from the pay of all members working under the terms of this Agreement plus Bi-Weekly Union Dues on the basis of individually signed payroll deduction authorizations on the form set out below in Section 5. The Company will make these deductions bi-weekly as designated in the individually signed payroll deduction authorizations. The Employer will pay the aggregate of such deductions monthly to the Financial Secretary of the Union, who shall be authorized to issue a receipt in the amount of the calendar monthly deductions. The Company shall send a mutually agreed number of copies of a form furnished by the Union which sets forth the employee's name, social security number, the number of clock hours worked, and the employee's gross earnings for the calendar month, and said copies will be executed to cover the aggregate number of bi-weekly payrolls in each calendar month. The check and/or respective monies shall be transmitted not later than fifteen (15) days after the end of the month for which deductions are being made.

Section 5. Deduction Form:

TO: EG&G LANGLEY, INC - (EMPLOYER)

I hereby authorize and direct you to deduct Union working dues bi-weekly from my pay, plus monthly basic Union dues, both amounts of which are to be determined by the Local Union by-laws and the IBEW Constitution and to forward same monthly to the Financial Secretary of the Union in accordance with the Agreement between the Union and the Company. This deduction shall be made from all wages earned by me while working in the jurisdiction of Local Union 1340, IBEW.

This authorization is voluntarily made in order to pay my fair share of the Union's cost of representing me for the purposes of collective bargaining, and this authorization is not conditioned on my present or future membership in the Union.

This authorization and direction shall be irrevocable for a period of one (1) year from the date hereof or until the termination date of present Agreement, whichever is sooner, without regard to whether I am a member of the Union during that period, and I agree that this authorization shall be automatically renewed and irrevocable for successive periods of one year unless revoked by written notice to you and the Union within the ten (10) day period prior to the anniversary of this authorization. I understand that under current law the payments covered by this authorization are not deductible as charitable contributions for federal income tax purposes.

Name (printed)_____Signature_____.

Date:_____Social Security Number:_____

ARTICLE XI

DAY WORK CONDITIONS

Section 1. Eight (8) hours per day shall constitute a standard work day normally between the hours of 7:00 am and 3:30 p.m. Forty (40) hours per week shall constitute a week's work, Monday through Friday, inclusive.

Section 2. All time worked before and after the established work day of eight (8) hours, Monday through Friday, and all time worked on Saturday shall be paid for at the rate of time and one-half (1 1/2). All time worked on Sundays and the Holidays stated in Article XIV shall be paid for at the rate of time and one-half (1 1/2).

Section 3. By mutual consent of the Company and the Union, the starting and quitting times of any shift, including day work, may be permanently changed.

Section 4. Employees called back to work after the conclusion of their regular shift hours shall be compensated for a minimum of three (3) hours at the appropriate overtime rate regardless of whether the employee is required to work the entire three (3) hours. In addition, any employee called back to work after his regular shift hours shall be promptly excused upon completion of the job which he was called in to perform.

Section 5. In assigned overtime, employees shall perform the overtime work required. Employees actively working the task requiring overtime shall perform the overtime work required. In the event of extenuating circumstances an employee is unable to perform overtime work assigned, the overtime assignment shall be referred to the overtime policy to be established mutually between the Company and the Union.

Section 6. Full time regular Employees terminated by reason of lay-off shall be notified at least two (2) weeks prior to such termination date. Employees who are laid-off or discharged will be paid all monies due by the end of the next pay period, providing all indebtedness and obligations to the Company by the employee are satisfied.

Section 7. Any employee showing up on time for work on a regular scheduled work day Mon-Fri, not having been previously notified to report to work, but to whom no work is provided shall receive two (2) hours of pay for show-up time. Employees may be required to stay on the job for the duration of the show-up period.

Section 8. The Company may elect a 4/10 hr work week in order to meet the customer's needs. The Union and affected employees will be given 3 working days notice prior to the commencement of the shift. The 4/10 shifts will originally be established on a volunteer basis. If there are more volunteers than needed, the employees with the most seniority will be awarded the 4/10's provided they have the necessary skills to perform the job. If there are not enough employees volunteering, the employees with the least seniority will be required to work the 4/10's provided they have the necessary skills to perform the job. The following Day Work Conditions shall apply to any established 4/10 work week:

(a). Ten (10) hours per day shall constitute a standard work day normally between the hours of 6:00 AM and 6:00 PM. The starting time may vary from 6:00 AM to 7:00 AM. Forty hours per week shall constitute a week's work. Initial conflicts in scheduling between A and B shift will be determined by seniority.

CREW A - Monday through Thursday

CREW B - Tuesday through Friday

(b). All time worked before and after the established work day of 10 hours shall be paid for at the rate of time and one half (1 1/2). All time worked on Friday, Saturday and Sunday for **CREW A** shall be paid for at the rate of time and one half (1 1/2). All time worked on Saturday, Sunday and Monday for **CREW B** shall be paid for at time and one half (1 1/2).

3. There shall be a 30 minute **unpaid** lunch period.

4. Pay day for **CREW A** will be on Thursday, but checks will not be cashed until Friday.

5. For the purpose of bereavement and jury duty, a ten hour day shall be reimbursed.

6. Administrative time will be based on a 10 hour day when allowable by NASA.

7. Two and one half (2 1/2) hours will be allowed for employees who are on the 4/10 hour shift and leaving early at the end of the work day to donate blood.

HOLIDAYS

EG&G will observe the holiday schedule stated in the Maintenance Collective Bargaining Agreement.

1. Should a holiday be celebrated on a crews' normal day off, i.e., **CREW A - Friday, CREW B - Monday**, an alternate day will be given to observe the holiday.
   a. Holiday falls on **Monday - CREW B** will observe **Tuesday.**
   b. Holiday falls on **Friday - CREW A** will observe **Thursday.**
2. A holiday will be considered an **8** hour day for payroll purposes. To make up the **2** hour difference between this and the newly enacted **10** hour work day, and to establish a 40 hour week, an employee may elect to take **2** hours vacation time. The other alternative would be to take **LWOP VOL**

GRIEVANCE PROCEDURE

For those employees on four tens filing grievances the term "normal work days" referenced in the Collective Bargaining Agreement shall mean Monday through Friday.

OVERTIME POLICY

When "A" shift employees are performing a job which is continued on Friday by "B" shift employees and unscheduled overtime is necessary on Saturday, the aforementioned employees with the least amount of overtime on the overtime roster shall perform the work.

ARTICLE XII

TEMPORARY SHIFT WORK CONDITIONS

Section 1. When so elected by the Company, multiple shifts consisting of no less than eight (8) hours may be worked. When two (2) or three (3) shifts are worked, the first or day shift shall normally be established on an eight (8) hour basis, 7:00 am to 3:30 p.m.; the second shift shall normally be established on an eight (8) hour basis, 3:15 p.m. to 11:45 p.m.; and the third shift shall normally be established on an eight (8) hour basis, 11:30 p.m. to 8:00 am.

Section 2. The pay for the second shift shall be straight time plus seven and one-half (7 1/2) percent; and the third shift rate of pay shall be straight time plus ten (10) percent.

Section 3. All time worked before and after the established shift hours in any twenty-four (24) hour period, Monday through Friday, inclusive, and all time worked on Saturdays shall be paid at the rate of time and one-half (1 1/2). All time worked on Sundays and Holidays shall be paid at the rate of time and one-half (1 1/2). Employees scheduled to work on a Saturday, Sunday, or Holiday should be guaranteed a minimum of three (3) hours work at the appropriate overtime rate.

Section 4. Night Shift Rotation:

Any second or third shift work shall be on a voluntary basis. The most senior employee that volunteers shall have first priority. If there are no volunteers, the least senior employee shall be put

on the above shift work, which shall be rotated every ninety (90) days. There shall be five (5) working days advance notice given for scheduled night shift work, except in cases of emergency. If employees volunteer for shift work this does not relieve them of their normal scheduled rotation.

(This section does not apply to employees who have permanently volunteered or have been permanently hired for the night shift. Provided this does not restrict the Employer for assigning said employees to a different shift according to the above procedure.)

ARTICLE XIII

PERMANENT SHIFT WORK CONDITIONS

Section 1. A four (4) cycle shift system will be operated only when the work is considered to be of a permanent nature. The names of those men employed on permanent shifts will be published showing shift rotation and the working shift or the day off for each man for a period of at least three (3) months.

Section 2. The permanent shift rate for the afternoon shift will be straight-time plus seven and one-half (7 1/2) percent, and the permanent shift rate premium for the nigh shift will be straight-time plus ten (10) percent.

Section 3. The standard work day shall be eight (8) hours of continuous employment excluding lunch period. Forty (40) hours per week shall constitute a week's work. All time worked in excess of eight (8) hours per work day and all time worked on either one of the two scheduled off days shall be paid for at the rate of time and one-half (1 1/2). If both of the scheduled days off are worked, the first day shall be paid at the rate of time and on-half (1 1/2) and the second day shall be paid at the rate of time and one-half (1-1/2).

Section 4. Permanent shift workers will have two (2) consecutive days off per week in lieu of Saturday and/or Sunday.

Section 5. When permanent shifts are to be reduced or canceled, the Union shall be given at least three (3) days notice in writing, if possible.

ARTICLE XIV

HOLIDAYS, LEAVES, JURY PAY AND PENSION

Section 1. Holidays:

(a) The following days shall be observed as holidays under this Agreement:

New Year's Day	Labor Day
Martin Luther King Day	Columbus Day
Washington's Birthday	Veteran's Day

Memorial Day	Thanksgiving Day
Independence Day	Christmas Day

*** The above holidays will be observed on the same day NASA observes them.**

(b) In the event the government proclaims a permanent holiday other than those listed in Section 1 above, then the employees shall be granted that holiday. If an employee is scheduled to work on a holiday, but fails to do so, he will receive no holiday pay.

(c) An employee who works on one of the above-listed holidays shall be paid at time and one-half (1 1/2) his straight-time base rate of pay for all hours worked on that holiday, in addition to any holiday pay for which he may be qualified.

(d) Holiday pay shall not be included in computation of weekly overtime.

(e) To be eligible for holiday pay, an employee must work his regularly scheduled day before the holiday and his regularly scheduled day after the holiday unless excused by the Company.

(f) Only permanent shift employees shall be paid holiday, vacation, and sick leave at their applicable shift rate of pay.

Section 2. Administrative Leave:

On days not recognized as holidays under Section 1 above, but where the government, because of special events and occasions substantially reduces the normal activity at the Center because of such social event or occasions, and allows reimbursement to the Company, the following provisions shall apply:

(a) Those employees who are required to work will be paid at their straight-time hourly rate: provided, however, that said employee will receive compensatory time off equal to the time worked and his straight-time base rate of pay for such compensatory time.

(b) Those employees who are not required to work will receive a day's compensation at their regular straight-time hourly rates.

(c) Employees who are out on sick leave or vacation will charge their time to sick leave or vacation and not administrative leave, when notification of base closing is given after the end of the shift that is immediately prior to the administrative leave.

Section 3. Annual Leave:

(a) Employees with less than three (3) years, shall earn one (1) hour Annual Leave per year for every twenty (20) man-hours worked.

(b) Employees with three (3) years, but less than fifteen (15) years, shall earn one (1) hour Annual Leave per year for every thirteen (13) man-hours worked.

(c) Employees with more than fifteen (15) years shall earn one (1) hour Annual Leave per year for every ten (10) man-hours worked.

(d) Employees are permitted to carry only thirty (30) days of Annual Leave from one year to the next, by December 31 each year.

(e) Length of service includes the whole span of continuous service with the present (successor) contractor, and with the predecessor contractors in the performance of similar work at the same Federal Facility.

(f) Employees desiring to take Annual Leave must receive permission from the Company by 9:00 am the day before Annual Leave is desired. Effective upon signing this Agreement, each employee will be allowed four (4) unscheduled annual leave absences to be taken at the employee's discretion. The employee will have four (4) opportunities from August 1 to July 31 to take this unscheduled leave. The total number of hours for unscheduled absences can not exceed thirty (30) hours.

(g) Employees who schedule vacations of one (1) week or more and who submit a written request through Payroll three (3) weeks or more in advance of the vacation starting time, will be paid vacation allowance prior to the end of the work shift on the last work day preceding the vacation schedule.

(h) In an effort to equitably meet employees requests for Annual Leave and in order to be compatible with efficient operations, all employees, on or before December 1 of each year, must submit their Annual Leave preferences in writing for the following year.

Section 4. Sick Leave:

(a) Employees will earn one (1) hour of sick leave for every twenty (20) hours worked.

(b) Employees absent from work because of illness must, upon reasonable request in accordance with the Company's sick leave policy, submit administratively acceptable evidence that they were ill and unable to work.

(c) Employees may accumulate all unused sick leave from one year to the next.

(d) Employees absent from work because of illness must inform the Company of the telephone number where they may be reached during such time of illness.

(e) Employees requesting same day sick leave calling in later than the start of the shift will receive Leave Without Pay (LWOP) for the day.

(f) Employees will be required to submit a written doctor's

excuse for all hours exceeding twenty-four (24) in any twelve (12) month period. Employees failing to submit the appropriate documentation will be subject to the following disciplinary action:

1. The first offense will be a suspension equal to the amount of hours in excess of twenty-four (24) hours.

2. The second offense will be a three (3) day suspension.

3. The third offense will result in termination.

(g) Employees having 400 hours and above of accrued sick leave may extend their initial twenty-four hour period by submitting doctor's excuses during that period. Employees having less than 400 hours will have all sick leave hours used counted toward the twenty-four hour period. —

Section 5. Jury Pay:

(a) Regular full-time employees who are absent on a regularly scheduled day and/or days of work because of jury service shall be paid. Said jury service pay is conditioned upon such employee reporting his jury summons in advance to the Company and such employee proving the amount of compensation received for such jury service. Upon receipt of the employee's pay voucher received from the court, the employee will have the same amount deducted from his/her pay. Because pension contribution is based on gross pay this deduction will affect the original pension contribution. Time off for jury service and/or pay therefor shall not be counted as hours worked for purposes of computing overtime.

(b) Regular full-time employees are allowed time off without loss of pay only when subpoenaed/summoned by the city, county, state, or federal government or the Company on behalf of the government or the Company, in cases where the government or the Company have a principal interest. The employee must provide the company with a copy of the subpoena/summons verifying attendance and verification of monies paid for court services.

Section 6. Bereavement Pay:

(a) In the event of the death in an employee's immediate family of any of the following relatives: Spouse, Child, Mother, Father, Brother, Sister, the employee shall be entitled to be absent from work for a period not to exceed three (3) normal working days to afford him an opportunity to attend the funeral and/or participate in other matters relating to the death of the deceased. This period of time will not exceed three (3) normal work days following the funeral.

During such absence, the employee shall be compensated at his regular straight-time hourly rate for each eight (8) hour work day absent.

(b) In the event of the death of an employee's Grandparent or an employee's Grandchild, the employee shall be granted two days off to attend the funeral providing the funeral occurs on a normal work day and providing the employee attends the funeral. During such absence the employee shall be compensated at his regular straight-time hourly rate.

Section 7. Retirement Fund:

(a) The Company agrees to contribute on behalf of all employees working under the terms of this Agreement, seven and one-half percent (7.5%) of their gross bi-weekly pay into a Pension Fund on an individual account basis.

(b) The said Pension Fund shall be administered pursuant to an agreement and declaration of trust administered jointly by an equal number of persons representing the Local Union and the Company.

(c) The Trustee shall determine the rules and regulations regarding the Pension Fund and that such rules and regulations conform to all requirements of the law.

(d) The check and/or respective monies shall be transmitted not later than fifteen (15) days after the end of the month for which contributions are being made. Along with the check for the amount of calendar monthly contributions, the Company shall furnish to the Trust Fund a mutually agreeable form setting forth the employee's name, social security number, the number of clock hours worked, and his gross earnings for the calendar month, and said copies will be executed to cover the aggregate number of bi-weekly payrolls in each calendar month.

ARTICLE XV

TRAVEL

During the term of this Agreement subsistence, travel allowance, mileage, per diem, or pay for travel time shall not be paid to any employee covered by the terms of this Agreement unless approved by the Contract Manager.

ARTICLE XVI

SUPERVISION

The Company reserves the right to send into the area of work as many supervisors and engineers as it deems necessary to carry out the work covered by this Agreement, but they shall not perform any manual work, except in cases of emergency, instruction, and on the job training.

ARTICLE XVII

TOOL ROOMS

The Company and the Union agree that it shall be the Company's prerogative to maintain and operate tool rooms and parts warehouse facilities.

ARTICLE XVIII

FIRST AID AND SAFETY

Section 1. The employees covered by this Agreement shall, at all times while in the employ of the Company, be bound by the safety rules and regulations as established by the Company. All employees will be issued Company safety manuals.

Section 2. A Joint and Safety Health Committee will be established for the purpose of making constructive recommendations to the Company. The Committee will consist of four (4) members; two (2) appointed by the Company and two (2) bargaining unit employees appointed by the Union. Meetings shall be held once each month and the time spent in attendance by these members shall be compensated for the time at the employee's applicable rate of pay, and minutes shall be recorded and copies furnished to the members of the Committee.

ARTICLE XIX

INTERFACING

On projects requiring multi-craft support, those crafts may be required to support each other in an effort to complete the task in a more efficient manner. This will require craftsmen to assist other crafts under the direction of the craftsman needing the assistance. In no way is this intended for craftsman to perform the technical tasks of another trade.

ARTICLE XX

GENERAL WORK RULES

General Work Rules affecting employee conduct are attached hereto and made a part hereof.

If is agreed by the Union that all of the employees covered by this Agreement shall be made aware of these General Work Rules and regulations by the Company at the time of their hire and that they shall be bound by them throughout the duration of their employment.

It is further agreed that violation of these General Work Rules and regulations is direct and just cause for disciplinary action, including immediate discharge subject to Article VII, Grievance Procedure.

ARTICLE XXI

SENIORITY

Section 1. In the event of reduction of the work force, employees with shortest length of service in their craft, will be laid off first.

Section 2. All new employees shall be on a probationary period for a period of ninety (90) calendar days. Probationary employees shall receive the wages and the fringe benefits, as described in this Agreement. New employees shall have no seniority until the probationary period has been completed. After completion of the probationary period, an employee's seniority shall then be credited from the date of hiring.

Probationary employees shall receive performance reviews on or about thirty (30), sixty (60), and eighty-five (85) days after date of hire. Any decisions by the Company to terminate a probationary employee on the basis of response to supervision, attendance, or ability to perform assigned tasks, shall be final and will not be subject to Article VII (Grievance Procedures) of this Maintenance Agreement. This applies to the termination of probationary employees only.

Section 3. A list of employees arranged in order of length of service with the Company (Predecessor inclusive) and length of service within a craft, shall be prepared by the Company once every six months. One copy shall be sent to the Union, another copy shall be posted in a conspicuous place on the Company's bulletin board.

Section 4. Any controversy of the seniority standing of any employee on the seniority list must be submitted to the Company within fifteen (15) days after the posting of the seniority list or any such protest shall be deemed to be waived.

Section 5. Seniority shall be canceled and terminated upon the happening of any of the following events:

(a) An employee quits.

(b) An employee is discharged

(c) An employee fails to return to work within five (5) days of notice of recall given by the Company by registered or certified mail.

(d) Settlement has been made for total disability.

(e) An employee has retired.

(f) An employee has been in layoff status for more than twelve

(12) months, or is absent because of sickness or injury for twenty four (24) months.

Section 6. Apprentice craft seniority, upon completion of the apprenticeship, shall revert back to the date of Indenture.

Section 7. Should an employee accept a position with the Company, whether covered by the Bargaining Agreement or not and he or she or the Company decides, within 90 days against said move the employee shall be reinstated to his or her former position with no loss of seniority or pay as if the move had never occurred.

ARTICLE XXII

PROTECTIVE LEGISLATION

All employees covered by this Agreement shall have the protection of all existing Federal, State, and Local laws applicable to employees in general.

ARTICLE XXIII

PERIODIC CONFERENCE

Periodic conferences shall be held by the parties from time to time for the purposes of discussing matters of mutual interest.

ARTICLE XXIV

GENERAL SAVINGS CLAUSE

Any provisions in this Agreement which are in contravention of any Federal, State, Local or County regulations or laws affecting all or part of the limits covered by this Agreement shall be suspended in operation within the limits to which such law or regulation is in effect. Such suspension shall not affect the operation of any such provisions covered by this Agreement, to which the law or regulation is not applicable. Nor shall it affect the operations of the remainder of the provisions of the Agreement within the limits to which such law or regulation is applicable.

ARTICLE XXV

WORK STOPPAGE

During the term of this Agreement, there shall be no lockout by the Company, and no slowdown, work stoppages, or sympathy strikes by the Union.

ARTICLE XXVI

LANGLEY FEDERAL CREDIT UNION CHECKOFF

The Company agrees to checkoff authorization, if duly signed by the employee, for the Langley Federal Credit Union and said money will be forwarded to the Credit Union, subject to the following:

(1) All authorizations for Langley Federal Credit Union

checkoffs will be honored by the Company only upon the receipt by the Company of executed forms sent to the Company by the Credit Union.

(2) All cancellations for Credit Union checkoffs will be honored by the Company only upon the receipt by the Company of properly executed forms sent to the Company by the Credit Union.

(3) All cancellations of increases or decreases in such checkoffs which are received by the Company a minimum of three (3) working days prior to the close of a pay period, will be processed by the Company effective with that pay period provided, however, at least thirty (30) days have lapsed since processing a change notice for the affected employee. The Union agrees to save the Company harmless from any action or claims growing out of these deductions (checkoff) and commenced by any employee or former employee of the Company. The Company's sole responsibility is to forward the monies deducted to the credit Union bi-weekly. The checkoff period to close midnight on Friday and payment to be mailed on or before the Friday of the following pay week.

ARTICLE XXVII

APPRENTICESHIP AND JOURNEYMEN TRAINING

An Apprenticeship Training Program, as specified by separate agreement, will be offered and maintained during the life of this Agreement and all subsequent Agreements until such time as terminated by mutual agreement by both parties.

ARTICLE XXVIII

HEALTH AND WELFARE

Section 1. Group Medical Insurance

(a) The Company will continue to sponsor Group Medical for all employees and employee dependents through 31 July 2000.

(b) Entry into the program is restricted to new hires at the time of hiring or existing employees between July 1, and July 31, of each year.

(c) Effective 1 August 1997 through 31 July 2000, Employees electing to participate in the Health Fund will have a 12% co-payment. Effective August 1, 1997 the bi-weekly co-payment will be $7.30 for single coverage, $16.06 for employee plus one, and $20.08 for family coverage.

(e) Annual increases in premium cost, as requested by the Health Fund Trustees, on 1 August 1998, will have a three percent (3%) cap and on 1 August 1999 will have a three percent (3%) cap.

(f) All employees covered under this agreement shall have the option of enrolling in the group medical plan as described above, or at the individual employee's option, may elect to receive thirty-four (34) cents per hour in lieu of accepting the medical coverage offered.

Section 2. Group Life Accidental Death/Dismemberment and Weekly Accident/Sickness

The Company will continue to sponsor Group Life, Accidental Death/Dismemberment, and Accident/Sickness Disability insurance for all employees. Any increase in Group Life, AD&D or Accident/ Sickness on 1 August 1998 or 1 August 1999 will have a 3% cap and the first 3% is to borne by the company. Any increases in excess of 3% will be borne by the employee.

Section 3. Change of Carriers:

During the term of this Agreement, the Company may, with the concurrence of the Union, change the Carrier or Carriers of any of the insurances described in Section 1.(a) provided that the benefits provided by the plan or plans remain substantially equivalent to those currently provided.

ARTICLE XXIX

DURATION

This Agreement constitutes the entire agreement between the parties and any prior practices inconsistent with this Agreement are not binding on the Company.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement consisting of -45- pages, which has been signed on this -31st day of —JULY—, 1997.

The masculine gender as used herein ("he", "his", "him", "man") shall be deemed to include the feminine gender ("she", "hers", "her", "woman").

FOR THE EMPLOYER:

EG&G LANGLEY, INC.

James R. Carbonneau
General Manager

FOR THE UNION:

INTERNATIONAL BROTHERHOOD OF ELECTRICAL WORKERS, AFL-CIO LOCAL UNION NO. 1340

Richard Adams
1340 Business Manager

Lester W. Jordan
Manager, Industrial Relations

Raymond Tucker
1340 Chief Steward

Robert E. Caldwell
Manager, Maintenance

Keith Jackson
1340 Bargaining Committee

Steve Nelson
Branch Manager, Pipe/Welding

Larry Minter
1340 Bargaining Committee

APPENDIX "A"

WAGE SCHEDULE

Section 1. The Company agrees to pay the following hourly rate for the classifications listed immediately below:

MINIMUM WAGE RATE PER HOUR

CRAFT/SKILLS	EFFECTIVE 1 AUG 97	EFFECTIVE 1 AUG 98	EFFECTIVE 1 AUG 99
Laborer, Class "B" Maintenance	9.06	9.35	9.65
Laborer, Class "A" Maintenance	9.61	9.92	10.24
Painter, Maintenance	15.34	15.83	16.34
Carpenter, Maintenance	15.73	16.23	16.75
Roofer, Maintenance	15.73	16.23	16.75
Asbestos Worker	15.73	16.23	16.75
Insulator, Pipecover, Maintenance	15.73	16.23	16.75
Mason, Bricklayer, Maintenance	16.22	16.74	17.28
Electrician, Maintenance	16.22	16.74	17.28
Mechanic, Maintenance	16.22	16.74	17.28
Millwright, Maintenance	16.22	16.74	17.28
Water Treatment	16.22	16.74	17.28
Pipefitter, Maintenance	16.22	16.74	17.28
Welder	16.22	16.74	17.28
Mechanic, Ref & A/C Maintenance	16.22	16.74	17.28
Sheet Metal	16.22	16.74	17.28
Rigger, Maintenance	16.22	16.74	17.28
Crane Operator, Maintenance	16.22	16.74	17.28
Machinist, Precision	16.51	17.04	17.59
Precision Machine Repairman	16.51	17.04	17.59
Technician, Ref & A/C Maintenance	16.51	17.04	17.59

Section 2. All permanent employees hired on or after 1 March 1989 shall receive $.50/hour less than the above rate for 90 days.

Section 3. Temporary hires (not to exceed 120 days) and summer hires shall receive the established rate but shall not be eligible for any fringe benefits in addition to their monthly rate.

Section 4. Anyone assigned to perform work as a lead shall be compensated at the rate of $.50 per hour. This rate shall be added to his/her base rate and made a part there of while so assigned.

CBA Between

EG&G Langley Inc. and IBEW Local 1340

August 1, 1997

GENERAL WORK RULES

The "Employee Conduct, Counseling and Disciplinary Action" Policy No. 106-3, dated August 1, 1997, is provided for your information and guidance. These rules are established to define a standard of personal conduct which is expected of every employee while on duty. A violation of any rule that merits disciplinary action will be acted upon by the Company as follows:

PURPOSE

The purpose of this policy is to provide a work environment that produces maximum efficiency, high employee morale and individual recognition. Our experience has shown that almost all employees enjoy working in such an environment.

SCOPE

Having a work environment which is based on the concept of individual dignity requires the establishment of rules and regulations to be used as guidelines for measuring conduct in individual situations.

These work rules place demand on the individual employee as well as the Company. The Company must ensure that the regulations are administered fairly and the employee must understand and abide by the standards.

When employees know and understand the work rules, there is seldom a need to impose compliance. The policy and procedures that follow details the work rules, counseling procedures (often called "Progressive Discipline") and an employee appeal process to ensure fairness.

POLICY

Management is responsible for establishing and communicating to all employees EG&G's work standards, policies, standard practices and ensuring that these standards are administered in a fair and just manner. Each situation involving employee conduct represents an individual problem, therefore, good judgment and thorough knowledge of the facts are essential for timely resolution.

All EG&G employees are responsible for maintaining acceptable conduct while on the job. In the event an employee's conduct falls below acceptable standards, the employee will be counseled and may be subject to disciplinary action.

To maintain an effective policy, investigations must remain objective. When a breach of standards occurs, the manager will thoroughly investigate and review all relevant facts and allow the employee to explain his/her conduct. The eventual decision must be based on a fair investigation, in which the employee has had ample opportunity to be heard. In addition, the decision should be consistent with similar situations that have been resolved in the past. Accurate and complete records of events, conversations and results which occur during this process must be kept.

In the event the employee, the employee's management and Industrial Relations cannot agree on a solution to the concern, the employee may submit the issue to the General Manager or the Manager, Administration for final resolution.

TYPES OF DISCIPLINARY ACTIONS

The type of action is determined by the Severity of the offense. In most cases, the following steps should be used:

Oral Warning. If, after counseling, and employee's conduct warrants an oral warning, the supervisor shall document the warning for his record only. It is the responsibility of the supervisor to make clear to the employee the following:

- The intent to discuss employee breach of standards
- The conduct giving rise to the warning
- Positive steps to be taken by the employee to avoid further management action.

Written Warning

An employee's immediate supervisor shall explain to the employee the conduct giving rise to the written warning and specify whether or not this is a repeat violation. The written warning will be on the Notice of Disciplinary Action, Form EG&G IR-6 (Attachment 1), and may be accompanied by any other written record.

Disciplinary 90-Day Review

When the employee's conduct has violated EG&G Policies, Rules of Conduct or Standard Practices and the employee is placed on a review for a period of ninety (90) days, known as a "90-Day Review," a copy of the Notice of Disciplinary Action form shall be completed. Once every thirty (30) days, the supervisor will meet with the employee and evaluate his performance. All reviews shall be documented.

Suspension

When an employee is suspended from work without pay or ineligible for other compensation, the employee shall be informed verbally and a Notice of Disciplinary Action form will be

completed. The form shall document the suspension action and specify, in detail, the violation which led to the suspension.

Termination

Employees may be terminated for just cause and, when such action occurs, it shall be documented on the Notice of Disciplinary Action form. Termination cannot be implemented until reviewed with Industrial Relations.

Emergency Suspension

This type of suspension may be made pending further investigation when the employee's conduct or action presents a significant danger to the safety and welfare of others, may severely impact the department's operational status or appears to have violated rules of conduct to an extent possible necessitating termination.

CAUSES FOR ACTION

Commission of any of the following infractions will normally be considered grounds for immediate discharge:

- Failure to report Company or Government vehicle accidents promptly and properly.
- Theft, including the unauthorized use or removal of Company, Government or a fellow employee's property.
- Engaging in or fostering espionage, sabotage or other criminal activity.
- Selling, or offering for sale, narcotics or restricted, dangerous drugs.
- Refusing to take blood alcohol and/or alcohol breathalyzer test, or test results that reveal the person is intoxicated as substantiated by Virginia Law.
- Possessing, using, or being under the influence of narcotics or restricted, dangerous drugs on or when trying to enter Government or Company controlled property. This prohibition does not apply when such drugs are prescribed or administered by a licensed physician.
- Possessing, using, or being under the influence of alcohol on or when trying to enter Government or Company controlled property, during normal duty hours.
- Convictions of any felony offense. This rule does not apply when sentencing for the offense specifies adjudication of guilt is withheld.
- Failure to be granted an Unescorted Access Authorization (UAPRP) for ADP work areas when such is required, and/or secret clearance within 180 calendar days from the date of employment.

Any of the following may be grounds for disciplinary action ranging from a warning or reprimand to discharge:

Conduct on the Premises

- Improper conduct on Government or Company controlled property.
- Fighting, practical jokes or horseplay.
- Using threatening, abusive or profane language.
- Gambling.
- Acceptance of anything of monetary value from any supplier, customer or other contractors or prospective contractors, or their representatives.
- Using, disseminating, or permitting the use of any privileged information acquired during employment with the Company or in the work for the Company's customers for personal gain or other improper use.
- Sleeping on the job.
- Insubordination.
- Falsification of operational data, Personnel Security Questionnaire forms or any other Company records.
- Repeated tardiness, unexcused absences, abuse of sick leave privileges, or failure to notify supervision promptly when unable to report to work.
- Leaving the plant or work assignment during working hours without prior supervisory permission.
- Outside employment or other outside activity not compatible with the full and proper discharge of the employee's position with the Company.
- Violation of Company-approved procedures for accomplishing work.

Acts of Discrimination or Sexual Harassment

- Acts of discrimination based upon race, creed, color, religion, sex, age, national origin, or disability.
- Sexual harassment.
- Acts of retaliation against an employee in connection with complaints of discrimination.

Safety Rules and Regulations

- Failure to observe rules and regulations.

- Disobeying safety rules or instructions given in the line of duty by LaRC Safety Officers, civil defense personnel, supervisors, or other proper authorities in emergencies.
- Failure to use provided safety equipment.
- Failure to report on-the-job injuries or accidents, or to follow instructions for treatment of injuries.
- Disobeying nonsmoking or noneating signs; smoking in posted nonsmoking areas.
- Reckless or negligent operation of Government or private vehicles on Government or Company controlled property or while on Company business.

Securing and Safeguards Regulations

- Violation of Security or Safeguards regulations.
- Disclosure of classified matter or information to unauthorized persons.
- Failure to observe the established regulations regarding the protection of such classified matter or information against accidental or deliberate disclosure to unauthorized persons.
- Lending, borrowing or altering a security identification device (badge).
- Unauthorized entry into restricted areas or allowing unauthorized individuals into restricted areas.
- Possessing firearms or other weapons, explosives, cameras, special viewing devices or radio transmitters on Government or Company controlled property without the proper permits.
- Convictions of misdemeanor offenses not compatible with the full and proper discharge of the employee's position with the Company.
- Refusal to permit the search of packages, lunch boxes, briefcases, purses, etc., upon request of authorized individuals.

Misuse and/or Misappropriation of Government Property and Funds

- Misuse or unauthorized use of Government or Company controlled property, material, equipment, funds, or other property including scrap or salvage.
- Misuse, loss, theft, or unauthorized modification of Company or Government computer systems, programs or data bases. This includes hardware, software, communications links and computer time.
- Working on unauthorized projects on Government or Company controlled premises.
- Performing any rework, repair, or modification on any materials or items without the proper authorization.

- Removal of Quality status stamps, tags or documents, and/or the use of any materials or parts that have been rejected by Quality.
- Using Company time for non-Company work.
- Using equipment, tools, stationery, or official vehicles for personal purposes.
- Misusing or abusing telecommunications equipment or services.
- Misappropriating materials, funds, or services by falsifying such documents as timecards, travel invoices, purchase orders, etc., or by any other direct or indirect means.

ABSENCE AND TARDINESS

Paid sick leave is an insurance policy to protect the employee's wages in case of an emergency. Sick leave should be used only for the intended purpose.

Since abuse of absenteeism or tardiness increases costs, creates an undue hardship on fellow employees and limits ability to effectively plan and accomplish goals, the following policies and guidelines have been developed to help reduce absenteeism and tardiness.

Supervision must understand and explain Company policies and procedures to their subordinates. Supervisors at every level will be responsible for maintaining attendance records for employees. Since inconsistency causes problems when counseling or disciplinary action is necessary, Industrial Relations will monitor actions to assure consistency.
In an effort to monitor absenteeism and tardiness, the following guidelines should be adhered to:

- Accurate records of all nonproductive time should be recorded for each employee.
- As soon as an employee returns to work from sick leave or tardiness, the supervisor should take a few minutes to informally speak to the employee.
- Deal with each absence immediately, whether or not the absence was expected.
- When an employee's record indicates that he is having a problem or might be abusing sick leave, it is time for a counseling session. In such circumstances, a written warning may be necessary.
- If disciplinary action is taken, it must be based upon detailed records.
- Absenteeism should be evaluated giving consideration towards the understanding of any sick leave due to unusual circumstances, such as major medical problems.
- If an employee has been out in excess of thirty (30) hours within a six (6) month period or if the employee's record shows a pattern of absence abuse, the employees should be considered for immediate counseling. Absenteeism due to major medical problems should be evaluated on a case-by-case basis.

PROGRESSIVE DISCIPLINE

Counseling

Whenever there is an irregularity in attendance, the supervisor should, prior to progressive discipline, meet with and counsel the employee as to his obligations. Listed below are the items to be discussed:

- The recent absences leading up to the counseling session.
- The Company's concern and willingness to help if there is a problem.
- Positive steps to be taken by the employee to preclude the need for future disciplinary action.
- Convince the employee that they do make a difference in their respective department, in that satisfactory attendance is one of their primary responsibilities.
- Explain to the employee how his absence can affect others when not at work, such as disruptions of work schedules, problems encountered by employee who fills in, etc.

Step 1- Oral Warning

When patterns of absence or tardiness begin to surface or when an employee approaches thirty (30) hours of absenteeism within a six (6) month period, an oral warning should be initiated and documented as a "Memo for Record." The minimum responsibilities of the immediate supervisor are as follows:

- The absenteeism record leading up the counseling. This should be completely up-to-date.
- The Company's concern and willingness to help if there is a bona fide problem.
- Positive steps to be taken by the employee to avoid further disciplinary action.
- Convince the employee that they do make a difference in their department and that satisfactory attendance is one of their primary responsibilities.
- Explain to the employee how his/her absence can affect others when not at work, such as disruptions of work schedules, problems encountered by employee who fills in, etc.

Step 2- Written Warning

When an employee fails to take the necessary action to correct his attendance following an oral warning, it may be necessary to issue a Notice of Disciplinary Action to substantiate formal counseling. Such action is designated as a written warning.

Step 3 - Written Warning with 90-Day Review Period

When an employee continues to be tardy or absent from the job, the employee may be placed on a review for a period of ninety (90) days, known as a "90-Day Review." The following information shall be contained in the Notice of Disciplinary Action form:

- Clear, concise, and explicit information explaining the terms of the 90-day period and the consequences that could result if the employee continues with lost time during this period. At this point, the employee should also be advised that the next step could be termination.

- Once every thirty (30) days, the supervisor will sit with the employee and evaluate his performance. Each evaluation shall be documented, and copies shall be sent to the employee and Industrial Relations (if the involved employee is represented by a bargaining unit) or Industrial Relations (if the involved employee is nonrepresented).

Step 4 - Termination

When an employee fails to correct his/her problem through whatever means necessary, the next step is termination.

NOTICE OF DISCIPLINARY ACTION FORM

The EG&G Notice of Disciplinary Action Form will be used to document all formal disciplinary actions.

Explanation of the form items:

- **Nature of Charge.** Use a short title for the offense, (i.e., excessive tardiness, neglect of duty, possession of intoxicating liquor, etc.).

- **Detailed Description of Offense.** Record the specific facts supporting the charge. Details must be factual, objectively stated, and supportable under scrutiny.

- **Adverse Effect on the Safety or Welfare of Others.** Will be indicated when, for example, fighting or negligent horseplay.

- **Adverse Effect on the Performance of Required Work.** Will be indicated when, for example, there is excessive absenteeism or tardiness.

- **Comments**. May be used to further explain to an employee the effect or severity of the offense.

APPROVAL CYCLE

The initiation of a Notice of Disciplinary Action form is the responsibility of the employee's immediate supervisor. Before disciplinary actions are placed into effect, the manager requesting such action shall communicate with and obtain the concurrence signature of the Manager, Industrial Relations, and the appropriate Branch Manager/Manager or his designee. All terminations or suspensions shall be discussed with the Manager, Industrial Relations, and any notice documenting the termination of any employee will require the signature of the Manager, Industrial Relations.

The highest level for concurrence of written warnings, probation and suspension actions is the appropriate Supervisor and the Administrative Manager or his designee. Once the concurrence cycle has been completed, the parties indicated on the bottom of each form shall receive appropriate copies. All terminations or suspensions shall first discussed with the "Manager, Industrial Relations," or his designee, and any notice documenting the termination of an employee

will require the signature of the Manager, Industrial Relations. Employees being considered for this type of action may be placed on emergency suspension pending approval of planned actions.

Before written warnings, probations, suspensions or terminations are placed into effect, the Supervisor requesting such action shall communicate with the Manager, Industrial Relations, or his designee, to discuss such action prior to implementation.

ADMINISTRATION OF POLICY

A progressive sequence of disciplinary action is to be taken based upon the severity of an offense. The least severe offenses result in oral warnings; the most severe offenses result in terminations.

If and when an employee is placed on a "90-Day Review," his/her conduct or performance becomes critical to continued employment. Any additional violations during this period will result in more serious disciplinary action, regardless of the fact that the additional violation itself may not mandate a suspension or termination. Such judgments are necessary for successful application of the disciplinary policy. It is of the utmost importance that disciplinary actions not only be justified, but also that they are administered in an even-handed fashion, which treats equally all who have committed the same type of offense. Employees on a "90-Day Review" shall have their conduct and performance evaluated by their immediate supervisor not less than once every thirty (30) days during said period.

Each evaluation shall be documented with copies sent to the employee and the Manager, Industrial Relations. Applicable provisions of collective bargaining agreements are not altered by this procedure.

The chart below, although not absolute or exhaustive, shows some causes that may justify disciplinary action. It also indicates the type of counseling and severity of action that could be taken based upon the frequency, facts and severity of the offense. These guidelines should be adhered to as closely as possible.

Incident	Oral Warn	Written Warn	90-Day Review	Susp.	Term.
Harm to Person or Property					First
Sleeping on the Job					First
Falsifying Information				First	
Theft					First
Drugs & Intoxicants					First
Insubordination					First
Espionage, Sabotage or Criminal Activity					First
Improper Conduct				First	Second
Safety Infractions				First	Second
Security Infraction			First		Second
Excessive Absence/ Tardiness	First	Second	Third		Fourth

MEMORANDUM OF UNDERSTANDING

EG&G Langley, Inc. and IBEW Local 1340 agree to amend the Maintenance Collective Bargaining Agreement (CBA) between the parties to add the following classifications and rates of pay.

Calibration Mechanic A	$16.22
Calibration Mechanic B	$15.34

These classifications will receive the benefits as stated in the CBA. These new classifications will be co-located and expected to interface and cross train with the current Relay Calibration Maintenance Electricians.

AGREED TO:

EG&G Langley, Inc.	IBEW Local 1340
_____	_____
Lester W. Jordan, Manager Industrial Relations	Richard Adams, Business Manager IBEW Local 1340

DATE: _____

Raymond Tucker, Chief Steward
IBEW Local 1340

MEMORANDUM OF UNDERSTANDING

Between EG&G Langley and IBEW Local 1340

The purpose of this memorandum is to establish a rate of pay for the high voltage, maintenance electrician classification and to set seniority guidelines for the Electrical Job Family.

All of the classifications listed below will be considered one Job Family. The Electrical Job Family will consist of two different job classifications but will continue to have one seniority list. The High Voltage Maintenance Electricians will have their own job classifications due to the specialized skills required in that area. Listed below is a new rate and details for the Electrician, Maintenance High Voltage classification. All other provisions of the collective bargaining agreement will remain in effect and apply to the new classification.

Electrician, Maintenance
Electrician, Maintenance High Voltage *

* Rate = $1.50 above Electrician, Maintenance

The Electrician, Maintenance High Voltage is expected to be on call at all times for customer and company needs. At least one employee in the department will be expected to carry a pager at all times and respond to any calls they may receive on behalf of the company or customer. Pay for on-call duty is included in to the hourly rate and no further compensation will be made.

Maintenance Electricians shall be used, at the Company's discretion, as standby to work with the current high voltage, maintenance electricians. Upon becoming certified at 115KV or more an electrician working within the classification of high voltage will be compensated at the appropriate rate.

Agreed to:

Lester W. Jordan, Manager Industrial Relations	Richard Adams, Business Manager IBEW Local 1340
Date	Raymond Tucker, Chief Steward IBEW Local 1340

COLLECTIVE BARGAINING AGREEMENT

BETWEEN

DIVERSIFIED TECHNOLOGY & SERVICES OF VIRGINIA, INC.

AND

DISTRICT LODGE 74

INTERNATIONAL ASSOCIATION OF MACHINISTS

AND AEROSPACE WORKERS

September 1, 1998 to October 31, 2000

TABLE OF CONTENTS

PREAMBLE

This Agreement is made and entered into as of the 1st day of September, 1998, by and between DIVERSIFIED TECHNOLOGY & SERVICES OF VIRGINIA, INC., its successors and assigns, hereinafter referred to as the "Company" or "Employer", and DISTRICT LODGE 74, INTERNATIONAL ASSOCIATION OF MACHINISTS AND AEROSPACE WORKERS, AFL-CIO, its successors and assigns, hereinafter referred to as the "Union".

WITNESSETH:

It is the intent and purpose of the parties to this Agreement to promote and improve all industrial and economic relations between the Company and the employees covered by this Agreement, as set forth in the Agreement covering rates of pay, hours of work and conditions of employment to be observed.

ARTICLE I
RECOGNITION

Section 1. The Company recognizes District Lodge 74, International Association of Machinists and Aerospace Workers, AFL-CIO, hereinafter collectively referred to as the "Union", its successors and assigns, as the sole and exclusive collective bargaining representative for all employees covered by this Agreement as certified by the National Labor Relations board in Case No. 5-RCA-8670.

Section 2. This Agreement shall cover all future shops and/or plants in the immediate Hampton or Newport News area (twenty-five mile radius) which the Company may operate during the term of this Agreement, or any existing plant, provided the work is previously performed by employees in the Bargaining Unit. The Union agrees to hold the Company harmless in the event of a jurisdictional dispute between any two or more unions in regard to this Section.

ARTICLE II
EMPLOYEE CONDUCT POLICY/PROGRESSIVE DISCIPLINE

Section 1. Reasons for Discipline. The Company may discipline including suspension, probation and discharge for jut cause, including failure of the employee to observe the rules and regulations of the Company or to perform quality work.

Section 2. Progressive Discipline. Ordinarily the Company will utilize the progressive discipline procedure outlined in Section 3 of this Article when it finds it appropriate to discipline an employee. Notwithstanding the fact that the Company prefers to utilize progressive discipline, it reserves the right to impose discipline (including suspension, probation or discharge even for the first offense) if in its reasonable judgment the severity of the offense warrants more severe discipline.

Section 3. Progressive Discipline Procedure. For violation of the Company rules or regulations or for failure to perform quality work the Company may resort to the following procedure:

(a) First Violation: Oral warning.

(b) Second Violation: Supervisor prepares a report citing infraction and employee receives copy with original going into Employee personnel file.

(c) Third Violation: Suspension of work for up to and including five (5) working days.

(d) Fourth Violation: If an employee receives a combination of three (3) offenses in eighteen (18) months or less he is subject to up to and including discharge and not eligible for rehire.

Any incident of discipline that occurred more than eighteen (18) months before the violation in question will not be considered in the progressive discipline process.

Section 4. Rules and Regulations: The Company shall provide each employee and the Union a copy of all rules and regulations. Any amendments or changes to the rules and regulations will be distributed to the employees and the Union five (5) days in advance of their implementation. The Union may request within ten (10) days of receipt of any proposed changes that the Company meet and discuss the impact of such rules provided that the promise to meet and confer will not be interpreted as the interference with the Company's right to promulgate reasonable rules and regulations so long as such rules and regulations do not conflict with the express provisions of this contract.

ARTICLE III
NON-DISCRIMINATION

Section 1. No Discrimination. There shall be no discrimination against any employee because of race, religion, national origin, sex, age, or Union membership by either the Company or the Union. The Company and the Union agree to comply with all laws relating to the non-discrimination of and the accommodation of the disabled and this Agreement shall be so interpreted.

Section 2. Pronouns. Wherever the pronouns he, him, or his appear in this Agreement, it is agree that any such reference shall have equal application to employees irrespective of sex and in no way represents sexual discrimination.

ARTICLE IV
MANAGEMENT RIGHTS

Section 1. The management of the project and the direction of the work force, including the right to plan, direct and control its operation; to determine the means, methods, processes, materials, and schedules of operations; to determine the location of its business; the right to contract and subcontract for materials, supplies, services and equipment; to determine the continuance of its operation; or operating departments; to establish and require employees to observe its rules and regulations; to hire, lay off or relieve employees from duties; and to suspend, demote, discipline and discharge employees for just cause, are the rights solely of the Employer.

The foregoing enumeration of Employer's rights shall not be deemed to exclude other rights of the Employer not specifically set forth. The Employer, therefore, retains all rights not otherwise specifically limited by this Agreement.

Section 2. The Company agrees not to subcontract Bargaining Unit work that will directly cause the termination of Bargaining Unit employees unless directed to do so by its customer, the verification of which will be furnished to the Union on request. The Company agrees that Union has the right to represent the employee on all matters concerning conditions of work, wages and other applicable matters as mentioned in the Agreement.

Section 3. Government Directive/Drug Testing. The Company shall have the right to establish rules, procedures and regulations to comply with any government directive, including but not limited to, establishing a drug free work place and work force. The Company may also implement a program whereby employees would be tested for drugs (including alcohol) and the failure of the employee to take the test shall be grounds for discipline.

ARTICLE V
DUES CHECK-OFF

Section 1. The Company agrees, subject to the provision hereof, to deduct Union dues, initiation fees and/or other deductions from the wages of the employees so authorizing the same in writing.

Section 2. The Union shall send a copy to the Company of the writing of those employees who have made such assignments, together with a statement of the initiation fees, dues and other deductions to be deducted from the pay of such member and the Company agrees to deduct in the amount so certified in respect to each such member from the first pay check of each month of such member following the receipt by the Company of such certification or statement monthly and shall make such remittance to the Union in one lump sum within ten (10) days after said deduction is made.

Section 3. The Union agrees to indemnify and hold the Company harmless against any and all claims, demands, suits, costs, and/or other forms of liability and expenses that shall arise out of or because of action taken by the Company for the purpose of complying with any provisions of this Article or in reliance upon any list, notice or assignment furnished by the Union under any such provisions.

Section 4. The Union agrees to furnish the Company a copy of the authorization duly signed by each employee authorizing the deduction and properly witnessed. The check-off authorization shall read as follows:

DUES CHECK-OFF

I hereby voluntarily assign the District Lodge 74, International Association of Machinists and Aerospace Workers, or in lieu thereof, a subordinate Local Lodge designated by District Lodge 74, from any wages earned, or to be earned by me, initiation fees and the amount of my regular monthly membership dues in said Union.

I authorize and direct my employer to deduct said monthly membership dues from my pay each month, and to remit the same to the order of the officer or official designated by the

Union, said authorization and direction to be subject to all the terms and conditions contained in the Collective Bargaining Agreement in existence between my employer and the Union.

This check-off authorization shall remain in effect until revoked by me and shall be irrevocable for a period of one (1) year from the date of execution of such authorization or until the termination of this Agreement between my employer and the Union.

This authorization shall be automatically renewed and irrevocable for one successive period of one (1) year, unless written notice of cancellation is given by me to the Company and the Union, said notice to be forwarded by registered or certified U.S. Mail, not more than seventy-five (75) days and not less than sixty (60) days prior to the expiration of each term of one (1) year, or prior to the termination of the Collective Bargaining Agreement between my employer and the Union, whichever occurs sooner.

This authorization is voluntarily made in order to pay my fair share of the Union's cost of representing me for the purpose of Collective Bargaining and this authorization is not conditioned on my present or future membership in the Union.

ARTICLE VI
HOURS OF WORK

Section 1. Except as otherwise provided for in this Agreement, the normal work day shall consist of eight (8) hours per day and the normal work week shall consist of forty (40) hours of work per week, Monday through Friday. This provision shall not be construed as guaranteeing any employee a specific number of hours of work per day or per week.

Section 2. Employees assigned to shift work shall be permitted to eat while in a duty status. Should employees work through the normal lunch period due to work requirements. lunch shall be taken at the first available opportunity (half hour unpaid). Should the company (Supervisor) require employees to work through the normal lunch period, the employees may be excused at the end of this shift early.

Section 3. The hours of work for employees in the Steam Plant assigned solely to the first shift shall normally be 7:00 a.m. to 3:30 p.m. with a thirty (30) minute nonpaid lunch period. Employees who are required to work while eating shall have an eight hour shift.

Section 4. For employees assigned to shift work in the Steam Plant the schedule shall normally be as follows:

(a)	First shift	7:00 a.m. to 3:00 p.m.
(b)	Second shift	3:00 p.m. to 11:00 p.m.
(c)	Third shift	11:00 p.m. to 7:00 a.m.
(d)	Swing shift	3:00 p.m. to 11:00 p.m.
		11:00 p.m. to 7:00 a.m.
		7:00 a.m. to 3:00 p.m.

Each four (4) weeks employees in the Steam Plant assigned to shift work will be required to rotate.

Section 5. For employees assigned to work in the compressor Stations (east and West Areas) the second shift will be on a voluntary basis. If there are more volunteers than needed,

the assignment will be by seniority. If there are not enough volunteers, the assignment will be made in a fair and impartial manner with the first assignment being made by inverse seniority.

For employees assigned to shift work in the Compressor Stations the schedule shall normally be as follows:

(a)	First shift	7:00 a.m. to 3:00 p.m.
(b)	Second shift	3:00 p.m. to 11:00 p.m.
(c)	Third shift	11:00 p.m. to 7:00 a.m.
(d)	Floating shift	Eight hour shift as research requires

Section 6. It is recognized and agreed that the Company may assign employees to work overtime. The Company shall endeavor to give affected employees as much advance notice as possible of the overtime assignments Such assignments are to be made in a fair and equitable manner, based upon the employee's classification. Nothing contained herein shall preclude the right of the Company to require a shift worker to work overtime when his relief does not show up. The Company agrees to keep records of all overtime assignments and to make such records available to the Union upon request. It is understood that the Company has the right to manage its work force and individual schedules to minimize overtime.

Section 7. Overtime paid at one and one-half (1.5) times the regular straight-time hourly rate shall be paid for all hours worked by an employee in excess of eight (8) hours per day or forty (40) hours per week. Overtime work performed on the employee's regularly scheduled sixth or seventh day shall be paid for at the rate of one and one-half (1.5) times the regular straight-time hourly rate. Vacation, holiday and sick leave time shall be considered time worked for the purpose of determining overtime.

Section 8. There shall be no duplication or pyramiding of overtime or premium pay under the provisions of this Agreement; any such hours compensable under two or more provisions of this Agreement shall be paid at higher premium rate of the two.

Section 9. In the event it is necessary to call out an employee to work, Employer agrees that such called out employee shall receive a minimum of four (4) hours of work or four (4) hours of pay at one and one-half (1.5) times the regular straight-time hourly rate. In addition, any employee called back to work after his regular shift hours shall be promptly excused upon completion of the job which he was called in to perform.

Section 10. In the event a permanent employee reports for work at his scheduled starting time and no work is available, the employee shall be entitled to receive four (4) hours show up time pay, to be paid at the appropriate hourly rate of pay.

Section 11. In the event NASA mandates a reduced work load or work force, then employees not scheduled to work will not be paid for such days unless the Company is reimbursed by NASA.

Section 12. The Company may request an employee or the employee may request the Company that he be allowed to work more than eight (8) hours in a day without overtime compensation. In lieu of overtime compensation pursuant to this Article VI, Section 7, the employee will be given an equal amount of time off in the pay period. (For example, if an employee works ten (10) hours on Monday, he may work six (6) hours on Thursday.) Agreeing to the requests hereunder is understood to be voluntary on the employee's part and the Company's part.

ARTICLE VII
SENIORITY

Section 1. Seniority shall be defined as the length of continuous service, whether employed by the Company or its predecessor, from the employee's latest date of hire, and shall be recognized on a Bargaining Unit wide basis.

Section 2. The Company shall furnish the Union each six (6) months with an accurate seniority list of all employees in the Bargaining Unit. Such list is to include the name, classification, latest date of hire, wage rate, and home address of record of each employee.

Section 3. All employees shall be considered probationary employees for the first forty-five (45) working days of permanent employment and shall not, during such period, be entitled to any benefits of this Agreement, except paid holidays. Any decision of the Company to terminate or otherwise discipline a probationary employee shall be final and not subject to the Grievance and Arbitration provisions of this Agreement. Upon satisfactory completion of the probationary period, the employee shall become a permanent employee with seniority dating from the date of permanent hire. Relief employees will receive credit for all actual hours worked for the Company at the time the employee is permanently hired. This credit will not apply to leave accrual or any other financial benefit.

Section 4. Classification seniority shall mean the length of accumulated service within a classification.

Section 5. In effecting layoffs and recalls, classification seniority shall control where the relative skill and ability of the employees given the job requirements are the same or relatively equal.

Section 6. Seniority shall be canceled and the employee shall be considered terminated upon the happening of any of the following events:

(a) An employee quits;

(b) An employee is discharged;

(c) An employee fails to return to work within five (5) days of notice of recall given by the Company by registered or certified mail;

(d) An employee is absent for three (3) days without previously notifying the Company, except in cases of extenuating circumstances;

(e) An employee overstays a leave of absence without notifying the Company, except in cases of extenuating circumstances;

(f) An employee engaged in other employment during a leave of absence without obtaining prior permission of the Company;

(g) An employee gives false reasons for obtaining a leave of absence;

(h) Settlement has been made for total disability;

(I) An employee has retired;

(j) An employee has been in layoff status or is absent because of sickness or injury or similar cause for more than twelve (12) months.

Section 7. The seniority of employees promoted or assigned to jobs outside of the Bargaining Unit shall be frozen at the level obtained at the time of such transfer or promotion. In the event such employee returns to the Bargaining Unit within one (1) year, he shall be entitled to whatever rights and privileges his accumulated seniority as of the time of promotion or transfer out of the Bargaining Unit would entitle him without prejudice.

Section 8. It is agreed that each employee shall be credited by classification seniority for the period he has been working in that classification with former contractors at NASA Langley. All employees entering a different or new classification after June 1, 1988 shall have their classification seniority started on the date of entry into such classification.

Section 9. The Union expressly recognizes the need for flexibility in the work force and agrees that an employee in one classification shall not be restricted from doing temporarily the work normally done by an employee in another classification. However, all such assignments shall be made in a fair and equitable manner.

In the event an employee temporarily works in a classification for which the normal rate of pay is higher than the rate of pay received by the employee in his normal classification, he shall receive the higher rate of pay. In the event an employee is assigned work temporarily in a classification lower than his normal classification, he shall receive his regular rate of pay.

Section 10. In making assignments to a permanent job vacancy or a new job, the Company shall give first preference to any currently qualified employees who apply for the position. A notice of any such vacancy or new job shall be posted on the bulletin board for a period of three (3) days (during such time vacancy shall be considered temporary). The Company, at the end of such time period shall consider those employees who have submitted a bid notice (the form and content of which the parties shall mutually agree upon) and consistent with the overall requirements of the Company as determined by the Company, shall select and assign the senior employee, if in its opinion the applicant is also qualified and suitable for the job.

Section 11. In the event the Company believes no properly suitable or qualified employee signs such a bid notice for a job opening, it is agreed and understood that the Company may hire a new employee for such job. Any employee who is awarded a job opening is expected to be qualified to perform the tasks of such job following initial break-in instructions and guidance from supervision.

Section 12. Employees assigned or transferred pursuant to this Article shall be given thirty (30) days in which to prove they are capable of performing the duties of the new job in a satisfactory manner. In the event such employees do not satisfactorily meet the requirements of the new job, they shall be returned to their prior position or its equivalent without prejudice. Any employee, upon request, shall be advised in the presence of his Union representative of the specific reasons for not meeting the requirements of the job and any disputes arising therefrom shall be subject to the grievance procedure.

Employees who are accepted on any bid job and are returned to their former job for failing to meet job requirements shall not be permitted to bid on any job for a period of six (6) months.

Section 13. When a reduction of working forces becomes necessary in the Company's judgment, employees shall be retained by the Company in accordance with the principles of Section 5, according to the number of employees the Company determines is necessary within each classification for the reduced operations contemplated by the Company. Recall of employees shall be accomplished by the same procedure in reverse.

Section 14. Any employee within a particular job classification who is affected by a layoff within his classification may bump, based only on Bargaining Unit seniority, any less senior employee in any like or lower rated classification, but only if qualified to perform the work within such classification.

ARTICLE VIII
GRIEVANCE AND ARBITRATION

Section 1. It is the intent of this Article to establish means for prompt adjustment of working problems and personal grievances at the job level by a conference between the immediate Foreman and the employee involved, provided a Union representative has been given an opportunity to be present. If not resolved in this informal level, a formal grievance shall be filed and processed in accordance with the steps and time limits and mutually agreed upon extensions specified below. For the purpose of this Article, a formal grievance under this Agreement is defined as a written statement by the Union, company, an individual employee or group of employees (hereinafter called "Grievance") claiming a violation of the terms of this written Agreement. Such grievance, to be valid, must specify the Article and Section of the Agreement believed to be violated.

Section 2. Except for payroll adjustments, no grievance shall be filed or processed based on facts or events or omissions within the employees knowledge, which have occurred more than ten (10) working days before such grievance is filed. Both parties agree to exert an earnest effort to settle such grievances promptly through the following steps:

STEP 1. The employee involved shall first confer with the Project Manager or his designated representative in order to amicably settle the matter, provided a Union representative has been given an opportunity to be present. The Foreman must give his decision within five (5) working days.

STEP 2. Should the grievance not be satisfactorily settled by the discussion outlined in Step 1 above, the Union shall within five (5) working days submit the grievance in writing to the Vice President, Operations or his representative. Within ten (10) working days after receipt of the written grievance, the Vice President, Operations or his representative shall either fully satisfy the grievance or meet with the Shop Steward, Business representative or International Representative of the Union and employee, if applicable. The Vice President, Operations, or his representative will render a written decision within five (5) work days after such contact.

STEP 3. If the parties are still unable to settle the grievance, then either party may, within thirty (30) calendar days after a written decision has been given, request the Federal Mediation and Conciliation Service to submit a list of five (5) impartial arbitrators from which the Company and the Union shall choose one to decide the controversy by the

Company first striking two names, and then the Union striking two (2) names, and the remaining name shall be chosen arbitrator. The arbitrator shall not have the authority to alter, amend or change the terms or provisions of this Agreement, and his decision shall be limited to the particular grievance in question. The arbitrator's decision shall be rendered in thirty (30) days and shall be final and binding on the parties.

Section 3. The Union and the Company shall equally share the fee of the impartial arbitrator, including any mutually agreed upon services relating to the arbitration proceedings. Either party shall be permitted to call employee witnesses at each and every step of the grievance procedure and no employee whose participation is reasonably necessary as a Union Representative or witness shall suffer any loss of earning as a result of so serving. The Company on demand will produce production, payroll, or other records for the purpose of substantiating the contentions or claims of the parties well in advance of the formal proceeding of the grievance procedure.

Section 4. All time limits prescribed herein may be extended by mutual agreement of the parties. Failure of the Company to respond within the time limits shall constitute a basis for escalating the grievance to the next step. Failure of the Union or employees to process the grievance to the next step within the time limits shall render the grievance invalid.

Section 5. In any case involving discharge or discipline imposed by the Company, back wages, if any are awarded, shall be limited to the amount of wages that employee would otherwise have earned less any unemployment compensation or substitute earnings during the period of discharge or suspension.

Section 6. Failure of the Company to implement the award of arbitrators within five (5) working days (if it is reasonably possible for the company to implement) after receipt shall be cause for a recognized work stoppage. No employee participating in such a work stoppage shall be discharged, disciplined, or otherwise subjected to any penalty for participation in such a work stoppage.

ARTICLE IX
LEAVES OF ABSENCE

Section 1. When it is necessary for employees to leave their duty for the purpose of attending to their personal business, and provided reasonable notice has been given the Company, employees will be granted leaves of absence without pay, provided the absences do not unduly interfere with the efficient operation of the Company. Such leaves shall not exceed six (6) months but upon written request with Company approval may be extended for additional time. The Company shall be under no obligation to an employee on leave of absence, except to return to work in accordance with the employee's seniority. It is mutually agreed and understood that leaves will not be granted for the purpose of seeking different employment.

Section 2. An employee who is summoned for jury duty, and who actually responds to said summons, will be paid the difference between the amount of money he received for jury duty pay and what he actually would have earned had he worked for the Company during the time he was absent due to jury duty, computed at the employee's regular straight-time rate for either an eight (8) hour day or five days per week. It is understood and agreed that the Company has the right to require satisfactory proof that an employee actually served on the jury panel and the number of days served.

Employees on the first and second shifts will not be required to report for work on the day they are required to serve as a juror or appear as a witness. Third shift employees will not be required to report for work on any night prior to reporting for jury duty or appearing as a witness the following day where the workweek starts on Sunday night and on any night following where the workweek starts on Monday morning.

Section 3. In case of the death of a member of the immediate family of an employee, the employee shall be granted a maximum of three (3) consecutive workdays off with straight-time pay to attend the funeral and to tend to administrative details. It is understood that an employee must attend the funeral in order to qualify for funeral leave with pay. Verification may be required by the Company. Members of the immediate family shall be the spouse, children, step-children, parent, step-parents, father-in-law, mother-in-law, brothers, sisters, half-brothers, half-sisters, brothers-in-law; sisters-in-law, sons-in-law, daughters-in-law, grandparents, grandparents of spouse, grandchildren whether of natural relationship or legally adopted or under legal guardianship, of the employee.

Section 4.

(a) The Company agrees to observe all provisions of present law or laws hereafter enacted relating to its obligations to those of its employees who may hereafter leave the service of the Company to enter the Armed Services of the United States.

(b) Annual military leave, without pay, will be granted employees not to exceed eighteen (18) days.

Section 5. When it is necessary for employees to leave their duty for the purpose of attending to Union business other than organizational activities, and provided that reasonable notice has been given to the Company, employees will be granted leaves of absence without pay. Such leaves shall not exceed thirty (30) days, but may be extended for additional time upon written request to the Company, if such further leave is feasible. In no event will Union business leaves be granted to more than two (2) employees during any one month. The Company shall be under no obligation to an employee on Union business leave except to return to work in accordance with the employee's seniority. All such leave requests are further subject to the Company's ability to adequately replace such employee on a temporary basis.

Section 6. An employee granted unpaid leave of absence shall accrue seniority while absent on such leave. All benefits (sick leave, vacation, paid insurance and hospitalization, etc.) shall be suspended during the period of unpaid leave of absence, unless the employee makes arrangements with the Company to keep these benefits in force at the employee's expense.

Section 7. Where the provisions of this Article are in conflict with the Family Medical Leave Act (FMLA), the provisions of the FMLA will control, but shall not be interpreted to be in addition to other time that might be available under this Article. For example, an employee who is on medical leave pursuant to the FMLA for twelve (12) weeks may extend up to an additional twelve (12) weeks pursuant to Section 1 in accordance with the requirements of Section 1.

ARTICLE X
BULLETIN BOARD

The Company agrees to allow the union to share the Company bulletin board located in the work area where employees normally check in and out for the use of the Union for posting of matters relating to Union meetings and other Union matters of a non-controversial, non-political nature only. All such notices as posted by the Union shall be signed by an authorized Union representative.

ARTICLE XI
SAFETY, HEALTH AND SANITATION

Section 1. Any protective devices or other safety equipment necessary to protect employees from injury will be provided by the Company without cost and shall be worn and/or utilized by the employees in the performance of their job tasks. In this connection, the Company will welcome suggestions from employees, or the Union, regarding the need for additional safety equipment.

Section 2. In the event an employee suffers an injury on the job in the course of his employment and is required to leave work to go to the doctor, he shall be paid for the balance of his shift on the day such injury occurs. If the employee is able to return to work after visiting the doctor, he shall do so and shall be compensated for the time spent at the doctor.

Section 3. The Company and the Union agree and recognize that employees may from time to time have meritorious suggestions for improvement of safety conditions in the Company's operations. Therefore, the Company and the Union encourage employees to reduce any such safety suggestion to writing and submit it to the Company for consideration. It is further recognized and agreed that the Company may from time to time schedule safety meetings and require attendance by employees. Attendance of employees at any such safety meeting which is scheduled with required attendance shall be compensated for the time actually spent incidental to such safety meeting at the employee's applicable rate of pay.

Section 4. Should a walk around safety inspection of the Company's premises be conducted pursuant to the provisions of the OSHA, one (1) representative, designated by the Union, shall have the right to accompany the inspection team during regular duty hours without loss of pay.

ARTICLE XII
HOLIDAYS

Section 1. The following holidays or day(s) observed as such shall be paid holidays under this Agreement.

New Year's Day
President's Day
Memorial Day
Independence Day
Veteran's Day
Thanksgiving Day
Labor Day
Christmas Day
Columbus Day
Martin Luther King's Birthday

It is agreed that the phrase "or day(s) observed as such" means the day(s) on which the Government substantially reduces the normal activities at NASA Langley Research Center, the Center is in a "holiday or weekend mode" and the Government employees at NASA Langley Research Center celebrate the holiday.

On days which are not enumerated in paragraph one above, when because of special events or occasions, i.e., administrative holiday, inclement weather or other acts of God, situations restricting operations for short durations, the Government substantially reduces the normal activities at NASA Langley Research Center because of the special occasion or event, the following provisions apply:

Employees required to work will receive their normal straight-time pay. The number of employees required will be restricted to the number essential to maintain services.

Employees scheduled but not required to work will receive holiday pay for the day.

Section 2. An employee who is on the active payroll of the Company on a holiday recognized herein and who works his assigned schedule during that workweek, except for being absent without a legitimate reason, shall receive holiday pay at his straight-time pay rate. If an employee is scheduled or required to work on a holiday, but fails to do so, he will receive no holiday pay unless he has legitimate reason for not working.

Section 3. An employee who works on one of the above listed holidays shall be paid at one and one-half (1.5) times his straight-time base pay for all hours worked on that holiday, in addition to any holiday pay to which he may be entitled.

ARTICLE XIII
ANNUAL LEAVE

Section 1.

(a) Employees with less than three (3) years shall earn one (1) hour Annual Leave for every twenty (20) man hours worked (to a maximum of 104 hours per year).

(b) Employees with three (3) years, but less than fifteen (15) years shall earn one (1) hour Annual Leave per year for every thirteen (13) man hours worked (to a maximum of 160 hours per year).

(c) Employees with more than fifteen (15) years shall earn one (1) hour Annual Leave per every ten (10) man hours worked (to a maximum of 208 hours per Year).

(d) For the purposes of computing Annual Leave, paid absences shall be considered as hours worked. Paid absences to be defined as Annual Leave, sick leave and holidays. During periods of short or long term disabilities or Workmen's Compensation, no accrual of Annual Leave will take place.

(e) Leave will be accrued on a pro-rata basis commencing upon permanent date of hire after there has been a successful completion of the probationary period.

Section 2. An employee's request to take annual leave shall be granted if the employee has enough accrued leave and he has given his Foreman reasonable advance

notice and the employee's absence would not unduly hinder the efficiency of the Company. Requests for Annual Leave for emergency reasons will be considered on an individual basis.

Section 3. Annual Leave may be requested in full hour increments only. Any employee having accrued unused leave at the end of the leave year shall have the privilege of carrying such unused leave forward into the following year. If unused leave is carried forward, a maximum of 120 hours will be permitted. Employees that request leave as set forth in Section 2 hereof and are denied due to workload requirements shall receive pay in lieu of time off if the employee is not permitted to carry over the time requested to the extent leave was denied.

Section 4. Should a holiday fall during the employee's vacation, he shall be entitled to an additional day of vacation, which shall be the next scheduled work day, which will be the employee's holiday.

Section 5. An employee who has Annual Leave to his credit but who leaves the service of the Company shall receive pay for such annual leave. This Section does not apply for an employee who leaves the Company without proper notice, one (1) week, in which event the employee forfeits all rights to receive pay for unused Annual Leave.

Section 6. The Company will keep accurate annual leave records of each employee in the Unit. Upon request such records will be made available to the employee or the Union.

ARTICLE XIV
SICK LEAVE

Section 1.

(a) Employees covered by this Agreement shall accumulate sick leave credit on the basis of two (2) hours for each forty (40) man hours of service with the Company with a maximum accrual of 104 hours per year. Sick leave shall be calculated from the permanent date of hire. Sick leave can be accumulated without limit. However, an employee leaving the services of the Company will not be paid for any sick leave which he has accumulated.

(b) For the purposes of computing sick leave, paid absences shall be considered as hours worked. Paid absences to be defined as annual leave, sick leave, and holidays. During periods of short or long term disabilities or Workmen's Compensation, no accrual of sick leave will take place.

(c) Sick leave may be used for the employee's illness or the employee's doctor appointment.

(d) Sick leave may not be taken or used once the employee qualifies for short or long term disability payments.

Section 2. Sick leave records will be kept by the Company for each employee covered by this Agreement. Such records will be made available to each individual employee and for the Union upon request.

Section 3. Except as hereinafter provided, employees shall not be required to furnish a medical certificate to substantiate requests for sick leave, excepting when the illness exceeds

three (3) consecutive scheduled work days. In the case of a communicable disease, and in the interest of protecting other employees, the Company may require medical certification of fitness to return to work. In the event of a period of disability, for any reason (injury or illness), a medical certificate, stating employee is fit for duty, will be required prior to returning to work.

ARTICLE XV
NO STRIKE - NO LOCKOUT

The Union agrees that it will not (during the term of this Agreement) cause, permit, threaten or participate in any strike, including the refusal to cross any other labor organization ls picket lines, walkout, slow-down, boycott, picketing, work stoppage, refusal to work, or any other interference with the operation, management or functions of the Employer. The Employer agrees it will not lock out employees during the term of this Agreement.

Any employee taking part in or assisting or supporting such picketing or interruption of such operations shall be subject to discipline including discharge.

The Union shall not question the unqualified right of the Company to discipline or discharge employees engaging in, participating in or encouraging such action. It is understood that such action on the part of the Company shall be final upon the Union and its members, and shall in no case be construed as a violation by the Company of any provision of this Contract. Only the issue of fact as to whether or not any particular employee has engaged in, participated in or encouraged any such violation, is subject to the grievance procedure and arbitration.

The Company will not be required to deal with representatives of the Union during any period of picketing or interruption of operations by the Union or employees.

ARTICLE XVI
UNION REPRESENTATION

Section 1. The Company will recognize two (2) Shop Stewards and two (2) alternate Shop Stewards designated by the Union to the Company in writing. The Shop Stewards shall be allowed reasonable time during working hours to investigate complaints, process grievances and meetings with the Company, in connection with his collective bargaining responsibility. The alternate Shop Stewards shall assume such duties when the regular Shop Stewards are absent. The Steam Plant and Air Compressor Station will each have a Shop Steward and alternate designated by the Union from among the employees in each area to represent the employees in that respective area.

Section 2. The Company agrees that unit employees who file a complaint or grievance with the Company will not be questioned, in respect thereto, without the presence of a recognized Steward.

Section 3. The Shop Stewards shall be allowed reasonable time during working hours to investigate complaints, process grievances and hold meetings with the Company, in connection with his collective bargaining responsibility so long as the Shop Stewards shall under no circumstances cause any cessation of work or in any way interfere with the operation of the Company. In carrying out the duties of a Shop Steward it is understood the Shop Steward's duties shall not interfere with his being a productive, contributing and working employee of the Company subject to the normal and usual rules and regulations that apply to all other

employees. Shop Stewards desiring to leave their work place must first clear the matter with their immediate supervisor.

Section 4. In the event of a layoff, the Shop Stewards shall be granted preferential seniority and will be retained without regard to seniority, as long as the Company has work which they are qualified to perform. In the event a recognized Union representative is laid off or terminated (for lack of work he is qualified to perform) he shall be the first recalled when work he is qualified to perform becomes available.

Section 5. Nothing in this Article shall be construed as the right to deny the International Representative or Business Agent the privilege of processing a grievance on behalf of a unit employee, or to participate in a grievance meeting conducted in accordance with the Grievance Procedure. It is mutually understood that such Union representative must be able to conduct himself in a professional manner and maintain channels of communications. If the Company believes in good faith that such representative does not meet these requirements it shall so notify and meet with the Directing Business Representative to resolve the situation. if such a meeting fails to resolve the matter within ten days, the Company shall meet with a General Vice President. If the matter is not resolved with the General Vice President in ten days then the Company shall not be obligated to deal with such Union representative. The Union may grieve whether the Company's determination was made in good faith.

Section 6. The Union shall be free to withdraw a grievance at any step of the Grievance Procedure without prejudice.

Section 7. Employees in the Unit will not be suspended or discharged, without first being given the opportunity for a hearing with the Project Manager. Such employee shall be afforded the right to be accompanied and represented by the Union during said hearing.

Section 8. Upon prior notice to the Project Manager or his designated representative, authorized agents of the Union, who are not employees, may, in the sole discretion of the Company if the Union appeals in Section 5 of this Article have been exhausted, have access to the Employer's establishment during working hours for the purpose of adjusting disputes, investigating working conditions and ascertaining that the Agreement is being adhered to. Such notice will include name(s) and title(s) and specific purpose of visit. It is expressly agreed that the Employer is hereby released from any and all liability for any injury to such agent, occurring while he is on the premises of the Employer or at the Government site. It is further understood that the provisions of Section 3 hereof shall also govern the activities of these union representatives at the work site.

ARTICLE XVII
UNIT WORK PROTECTION

Work normally and historically performed by Bargaining Unit-Employees will not be contracted out or assigned to exclude employees where such action would adversely affect unit employees' employment. Adversely affected, as used in the context of the Article, shall be interpreted to mean: layoff, failure to recall, failure to promote, and the temporary assignment of an excluded employee to work within a classification where qualified employees regularly holding the classification are reasonably available to perform the work.

It is recognized by the parties that business reduction situations may occur necessitating a reduction in force. It is not the intent herein to recall employees for temporary increases in

work load which will not support full time employment. Should such situations arise the Company will utilize existing personnel to meet peak load conditions. However, it is agreed that where work load commitments will support recall of employees on layoff, such action will be taken.

ARTICLE XVIII
WAGES AND CLASSIFICATIONS

Section 1. The rates of pay shall be those specified in Appendix "A" which is attached hereto and made a part hereof.

Section 2. The manning needs of any classification covered by this Agreement shall be determined solely by the Company. This Agreement will not constitute a guarantee of any particular job or jobs within any particular classification, nor shall it constitute a guarantee of any particular duties or deleting duties from a classification. The principal of equal pay for substantially equal work shall apply as it shall also apply to all employees within a classification.

Section 3. The Company, at its sole option, may implement new classifications and/or job descriptions in light of changed conditions and the Company shall negotiate a wage rate acceptable to the Union for such classifications/job descriptions.

ARTICLE XIX
INVALIDITY

If any Article or Section of this Agreement should be held invalid by operation of law, or by any legal tribunal of competent jurisdiction, or if compliance with or enforcement of any Article of action should be restrained by such tribunal pending a final determination as to its validity, the remainder of this Agreement shall not be affected thereby and shall continue in full force and effect. Upon request of either party, the parties shall negotiate a satisfactory replacement for such invalid provision.

ARTICLE XX
401(K)

The Company shall establish a 401(k) plan, to be funded by voluntary contributions of the employees. The cost to establish and administer the plan to the extent allowed by law shall be borne by the plan participants. The Company will match employee contributions to the 401(K) plan from September 1, 1996, to August 31, 1997, and from September 1, 1997, to August 31, 1998, in an amount equal to $260 per year.

ARTICLE XXI
HEALTH & WELFARE BENEFITS

Section 1. For full time employees on the role as of September 1, 1991, who so elect and for full time employees hired after September 1, 1991, the Company shall make the contributions set forth in Section 2 hereof in order to provide the following benefits:

(a) Life insurance in the amount of $50,000.00 per employee; (after age 65 there are certain benefit reductions)

(b) Accidental death & dismemberment policy in the amount of $50,000-00; (after age 65 there are certain benefit reductions)

(c) Union Delta Dental Plan A25; (25/75 deductible) and

(d) Hospitalization and medical insurance (Cigna 10/250 Plan)

(e) 401(k) Plan

The exact terms of the coverages are those provided pursuant to and as a part of insurance policies.

Should the cost of such benefits exceed the amount contributed by the Company, such excess cost shall be paid by the employee through payroll deductions.

Section 2. The Company shall pay the following amounts per employee per month to provide the coverages set forth in Section 1 hereof:

(a) From November 1, 1998 - October 31, 1999:

Single coverage - $317
Employee + one coverage - $327
Family coverage - $372

(b) From November 1, 1999 - October 31, 2000:

Single coverage - $327
Employee + one coverage - $337
Family coverage - $382

(c) The cost per employee for the dental coverage will be calculated monthly by the Company on a composite basis.

Section 3. For employees on the role as of September 1, 1991, who do not elect to have the hospitalization and medical insurance benefit set forth in Section 1 hereof, the Company shall pay on their behalf the insurance premium for the dental Plan, life, AD&D and pay in lieu of the hospitalization and medical insurance benefit not elected the balance of the Company's contribution of the single coverage rate provided for in Section 2, less whatever the employee directs to the 401(k) plan.

Section 4.

(a) The Company will provide short term disability insurance as follows:

66-2/3% of basic weekly pay to a maximum of $300 per week.

Coverage will be from the 8th day of total disability and will extend through the 90th day of such disability.

(b) The Company will provide long term disability insurance as follows:

60% of basic monthly pay to a maximum of $3, 000 per month and in accordance with the insurance company schedule provided.

Coverage will be from the 91st day of total disability through the date you cease to be totally disabled or in accordance with the insurance company schedule in reference to age.

(c) It is recognized by the parties that cost of insurance premiums are subject to increase or decrease based on the experience rating of the carrier. In the event of a change in the premium cost of short and long term disability group insurance coverage the Employer will adjust the amount paid accordingly to insure that the agreed to coverage will be provided for the life of the Agreement at no cost to the employee.

Section 5. It is understood that the Company's contracts with insurance carriers provide the benefits contemplated under this Article. Interpretation and application of such contracts shall ultimately rest with the insurance carrier and any dispute thereunder shall be between the employee and the insurance carrier and not subject to the Grievance Procedure of this Agreement. The Company reserves the right to change insurance carriers so long as the primary benefits are essentially the same.

ARTICLE XXII
GENERAL PROVISIONS

Section 1. Employees within the Bargaining Unit shall be assigned and answerable to, the Contract Supervisor, or in lieu thereof, one (1) individual who shall be designated in writing, who shall be responsible for assigning work, approving absences and initiating disciplinary action. No employee shall be subject to discipline for refusing to carry out instructions of other than his designated Foreman.

Section 2. As long as NASA requirements include a provision which requires employees of the Unit to wear uniforms, the Company will pay the cost of furnishing and laundering a change of uniforms per employee per regular working day. In the event NASA requirements in this regard are changed, it is agreed the Company shall have the right to modify the provision of this Section to the extent that NASA shall not be liable to the Company, or the Union, for any cost which is not a requirement of the Contract between NASA and the Company.

The Company further agrees to make available several sets of rain gear in the form of slickers, hats and boots for field service trips during foul weather. This equipment will be kept in a designated area and will be checked out individually as needed. The employee will be responsible for this equipment while he has it signed out.

Section 3. The Union and the Company recognize the need to be flexible in scheduling the hours of shifts and transfers to different shifts in order to accommodate NASA directed work. In the event of changes due to NASA direction, the Company will endeavor to give a minimum of 5 days notice so long as the NASA direction to the Company is at least 5 days. If the Company gets less than 5 days notice, the Company will give whatever notice it gets.

Section 4. The Employer reserves the right to define the content of a job.

Section 5. Regular part-time employees (those employees regularly scheduled to perform less than forty (40) hours work per week who are not classified as a utility person) shall be paid pro rata benefits. Part-time employees who are scheduled on an "as needed" basis shall not be paid benefits. "Benefits," as defined for purposes of this proposal, means annual leave pay, holiday pay, sick leave or health and welfare benefits under Article XXI. To be covered by disability insurance, an employee must work an average of thirty (30) hours per week.

ARTICLE XXIII
SUPERSEDING EFFECT OF AGREEMENT

It is expressly agreed and understood that the wages, working conditions and fringe benefits provided in this Agreement are in lieu of any and all working conditions and fringe benefits of any kind previously provided by the Company or its predecessor for employees within the Bargaining Unit.

ARTICLE XXIV
DURATION

Section 1. This Agreement shall become effective September 1, 1998, and shall remain in full force and effect until October 31, 2000, and from year to year thereafter unless either party shall, no more than ninety (90) and at least sixty (60) days prior to any anniversary date hereof, notify the other party of a desire to amend or terminate this Agreement. In the event such notice is given, the parties shall communicate not later than fifteen (15) days after receipt of such notice for the purpose of scheduling negotiations of a new Agreement.

Section 2. No Agreement, waiver, alteration, understanding, variation or modification of any terms or conditions contained herein shall be made by any employee, or group of employees, with the Company and in no case shall it be binding upon the parties hereto unless such Agreement is made and executed in writing between the parties hereto, and the same has been ratified by the Union.

Section 3. The waiver of, or any breach of conditions of this Agreement, by either party, shall not constitute a precedent in the future enforcement of all the terms and conditions herein.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement this 29th day of August, 1996.

DISTRICT LODGE 74
INTERNATIONAL ASSOCIATION OF
MACHINISTS and AeroSpace WORKERS

DIVERSIFIED TECHNOLOGY &
SERVICES OF VIRGINIA, INC.

_____ _____

_____ _____

_____ _____

APPENDIX A

WAGE, SCHEDULE, ENVIRONMENTAL AND DIFFERENTIAL PAY

Section 1. The Company agrees to pay the following hourly rate for the classifications listed below:

Classification	9/1/98	9/1/99	9/1/00
Stationary Steam Engineer	16.86	17.37	17.89
Equipment Service Mechanic	16.86	17.37	17.89
Steamfitter	16.86	17.37	17.89
Water Treatment Analyst	16.86	17.37	17.89
Senior Plant Technician	16.86	17.37	17.89
Plant Technician	16.02	16.50	17.00
Utility Person	6.82	7.02	7.23

Section 2. Shift differential shall be 35 cents per hour for second shift and 45 cents per hour for third shift work.

Section 3. When an employee is assigned to work the majority of a regular shift falling on Sunday, the affected employee will be paid 1.25 times the base rate plus applicable shift differential, if any, for all regular hours worked during the shift.

Section 4. When an employee is assigned to cleaning boilers fireside or waterside, he shall receive 1.5 times his basic rate.

Section 5. ~~Employees hired after October 18, 1994 may be hired at the~~ apprentice rate of $12 per hour for those assigned to positions other than in the steam plant. The steam plant apprentice rate shall be $12.50 hour. This rate shall only be applicable until an employee has worked 2080 hours for the Company in the apprentice rate category. (An employee will not get credit for time worked s a utility person.) Any such person in the apprentice rate category who has worked beyond the probationary period as per Article VII, Section 3, and who is on a regular schedule (not on an "as needed" basis), will be entitled to all the same benefits as a full-time or part-time employee, as the case may be.

Section 6. There is established a special classification of Utility Person, who shall earn the following benefits and wages, notwithstanding anything to the contrary in this Agreement:

(a) Benefits: In lieu of all benefits set forth in Article XXI, the Utility Person will receive a payment of $1.29 per hour worked, which may be applied to the purchase of any benefit under Article XXI (if such benefit is available through the insurance carrier) or paid into the 401(k) plan under Article XX.

(b) Utility Persons will be entitled to a pro-rated vacation benefit based on the number of hours worked in the prior year (no vacation pay will be earned until the completion of each employment year).

(c) Utility Persons will not receive holiday pay, sick pay, shift premiums or Saturday or Sunday pay.

(d) Utility Persons will work regular part time schedules of 16, 24 or 32 hours per week.

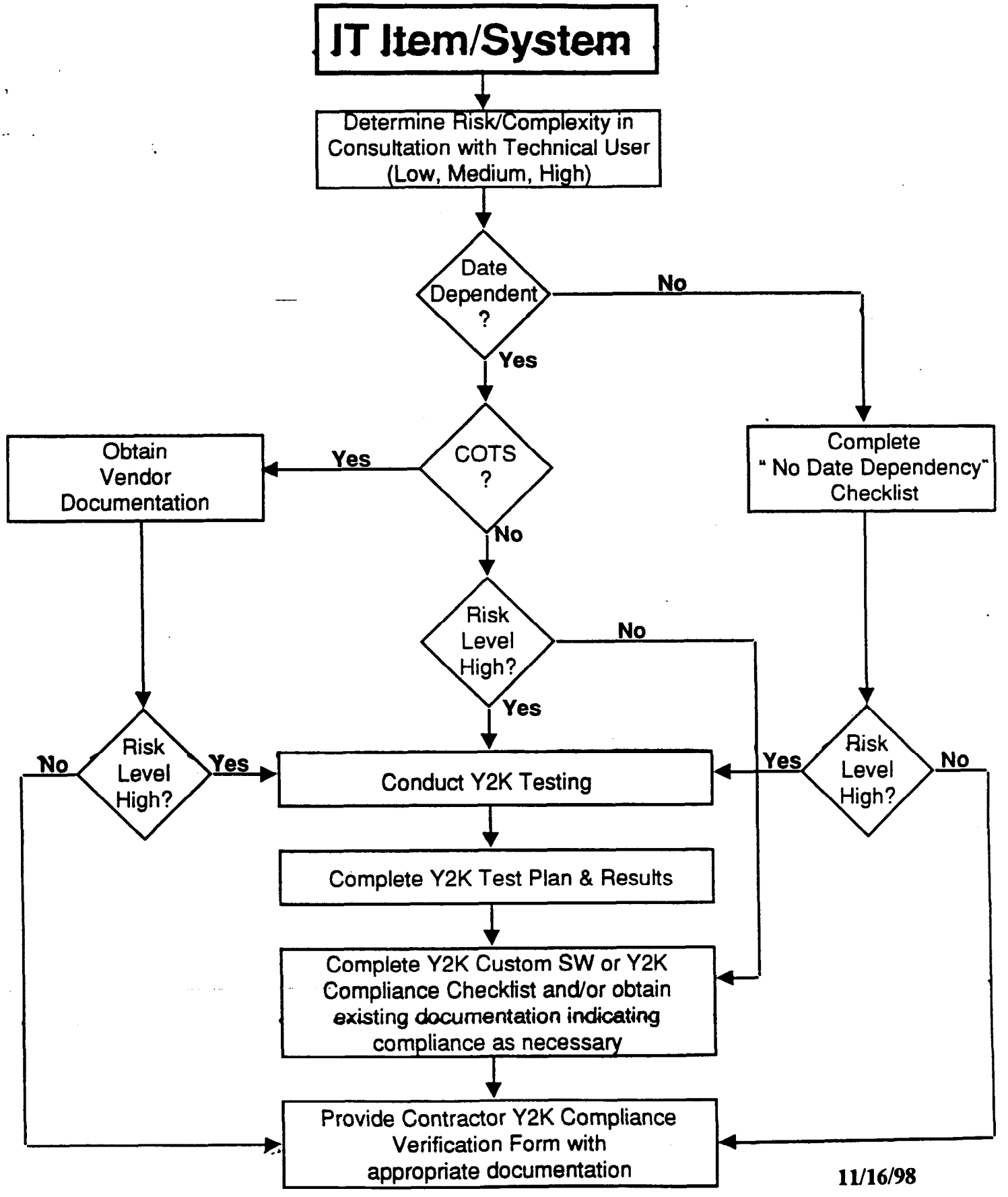
#19227

EXHIBIT F

Y2K Guideline and Compliance Verification Form

NASA LaRC Y2K Guideline for Documentation and Testing Requirements

BASED ON "NASA YEAR 2000 AGENCY TEST AND CERTIFICATION GUIDELINES AND REQUIREMENTS"



11/16/98

Contractor Y2K Compliance Verification Form

NASA Langley Research Center

IT Item Name/System: _____ **Risk/Complexity Level (High, Medium, Low):** _____

Brief Description:

Facility/Lab *(if applicable)*: _____ **Organization:** _____

Documentation (check the applicable attachments) *(Refer to the "NASA Year 2000 Agency Test and Certification Guidelines and Requirements" and the "NASA LaRC Y2K Guideline for Documentation and Testing Requirements" for guidance.)*

- ☐ "No Date Dependency" Checklist
- ☐ Vendor Documentation for COTS Products (Software, Hardware, Firmware)

  Specify: _____
- ☐ Y2K Test Plan
- ☐ Y2K Test Results
- ☐ Y2K Custom Software Compliance Checklist
- ☐ Y2K Compliance Checklist
- ☐ Other existing documentation indicating compliance, e.g. system documentation

  Specify: _____

Comments:

I certify the IT Item/System identified has been assessed for Y2K compliance using the NASA and Langley Research Center Year 2000 test and certification guidelines and requirements as guidance and that the IT Item/System is compliant as reflected in the attachments.

Contractor Company Name: _____

Contractor Official: _____ _____

Typed Name and Signature *Date*

Concurrence:

NASA COTR/Technical Monitor

_____ _____

Typed Name and Signature *Date*

EXHIBIT G

Performance Requirements Summary

The Contract Requirements listed in the attached PRS (Column (2)) summarize specific firm fixed price tasks that are to be performed under this contract. The Performance Requirements associated with each Contract Requirement are as shown in the PRS and include:

A. Work Requirements. A series of subtasks associated with each particular Contract Requirement are listed in column (3) of the PRS. Note that unsatisfactory performance of work requirements in Column (3) marked with an "*" will result in an unsatisfactory rating for the entire contract requirement.

B. Weight (Wt.). The value of each Work Requirement is specified as a percentage of the Contract Requirement with which it is associated with in column (4) of the PRS. The percentages are based on judgement, taking into account both the costs incurred by the Contractor in carrying out a particular Work Requirement and the detriment to the Government if the Work Requirement is not satisfied. The Weight compared with the accepted line item unit prices provided in Exhibit I, *Schedule of Deductions*, will be the primary basis for deducting for partially performed, unsatisfactorily performed and non-performed work. The Government may withhold total payment of a contract requirement if the Government determines that the workmanship was unsatisfactory in terms of quality.

C. Maximum Allowable Defect Rate (MADR). The MADR for each Work Requirement is identified in column (4a) of the PRS. The MADR is the defect rate for a monthly population of services which, when exceeded, indicates that the Contractor's quality control is unsatisfactory. The MADR does not represent a threshold for payment deductions. Deductions may be taken for all defects (with appropriate credit for rework) regardless of whether the MADR was exceeded. The MADR is expressed as a percentage of the total population per month or as a number of defects per month.

D. Maximum Allowable Defect Number (MADN). If a MADR is not appropriate, due to the relatively small annual quantity of a particular service requirement, a Maximum Allowable Defect Number (MADN) has been indicated.

E. Standard of Performance. The Standard of Performance for each Work Requirement is identified in column (5) of the PRS with a reference to the respective paragraph in Section C that specifies in detail the work to be performed.

Contractor REQUIREMENTS		PERFORMANCE REQUIREMENTS			
(1) ITEM NO.	(2) CONTRACT REQUIREMENT	(3) WORK REQUIREMENT	(4) WT. (%)	(4a) MADR %	(5) STANDARD OF PERFORMANCE
C8	MANAGEMENT				
C8A	Work Control	Processing*	50	2	- Work is planned, estimated and scheduled to assure work is completed within specified time limits and quality standards and documented daily on the CMMS per C.8.a.
		Scheduling	50		- Work is scheduled to cause the least interference with normal NASA business and mission per C.8.a.
C8B	Monthly Work Schedule	Timeliness	25	2	- The MWS is submitted and updated monthly on time by the 15th of each month prior to the month that the work is to take place, and weekly as necessary at a time mutually agreed to per C.8.a.
		Quality*	30		- The MWS and updates are complete and include all information required by the SOW including the intended PM work that satisfies the requirements of the PM program, all IDIQ work, and justifications for MWS deviations per C.8.a.
		Procedures	25		- All work is performed in accordance with the MWS except where deviations are specifically authorized by the SOW or approved by CO per C.8.a.
		Documentation	20		- The MWS and updates are provided on the CMMS and hardcopy in the required detail per C.8.a.
C8C	Annual Work Plan (I and II)	Timeliness	40	2	- Each Phase is delivered on time within 30 days of the end of the contract year (Phase I) and 30 days following the Phase I submission (Phase II) per C.8.a
		Quality*	60		-Each Phase incorporates the RCM strategy and all of the requirements of the SOW including, as appropriate, historical data, inventory, trends, maintenance approach, reliability problems, risks, and recommendations per C.8.a.
C8D	Subcontract Administration	Procedures*	60	2	- Subcontract Administration Services are provided per C.8.b.
		Documentation	40		- Reports, plans, and other documentation are provided complete and on time per C.8.b.
C8E	Data Management	Procedures	50		-Data management, including operation and maintenance of the CMMS, is performed in accordance with the SOW per c.8.c.
		Quality	50		- The CMMS is maintained up-to-date at all times and the database reflects all work performed and other data required by the SOW per C.8.c.
C8F	Communications	Communications*	70	5	-Job coordination, feedback and direct contact with customers and Facility Coordinators is sustained per C.8.c.
		Timeliness	30		-Customers, Facility Coordinators and Zone Managers are kept apprised of their job status, problems and changes continuously and within two days after job completion per C.8.c.
C8G	Facility Coordinator		100	5	A Facility Coordinator is assigned to each contractor occupied building and performs duties in accordance with C.8.e.
C8H	Duty Officer	Timeliness	50	2	-Duty Officer is on duty after normal LaRC working hours per C.8.d.
		Quality	50		- Services are provided and problems are resolved after normal LaRC working hours in accordance with LHB 1040.2 per C.8.d.
C8I	Annual Facility Condition Assessment	Timeliness	30	MADN 1/yr	-Assessment is delivered complete not later than March 1 annually per C.8.f.
		Quality	40		-Assessment provides a complete assessment of the condition of all required facilities' interiors, exteriors, and major utility and mechanical systems in the approved format per C.8.f.
		Documentation	30		-Assessment provides a prioritized list of required repairs and the complete report is submitted to the CO on the CMMS per C.8.f.

Contractor REQUIREMENTS		PERFORMANCE REQUIREMENTS			
(1) ITEM NO.	(2) CONTRACT REQUIREMENT	(3) WORK REQUIREMENT	(4) WT. (%)	(4a) MADR %	(5) STANDARD OF PERFORMANCE
C11	TROUBLE CALLS				
C11A	Trouble Call Performance	Timeliness	30	5	- For Emergency Trouble Calls during normal working hours, crew is at job site and working within 15 minutes of emergency notification; After normal working hours, emergency responded to within 2 hours of notification; Work is done continuously without interruption until emergency condition is arrested before departing job site per C.11.d. -For Routine Trouble Calls work is completed within specified time (10 days UNODIR, 10 days for lighting or 2 days for quality of life issues) per C.11.d.
		Quality	50		- Emergency condition is stabilized and all TC work is performed as specified in C.11.d.
		Procedures	20		-Specified receipt, processing, and recording is performed and information on the completed TC is entered into the CMMS within 2 days of completing the work per C.11.f.
C12	RECURRING WORK				
C12A	Preventive Maintenance	Incidental Repairs	10	5	-Repairs of defective equipment or system components within established limitations are made during PMs per C.12.a.
		Scheduling	15		-PM tasks performed in a building not available during normal hours are accomplished during 2nd or 3rd shifts or on weekends per C.12.a.
		Timeliness	25		-PM work is performed in accordance with annual shut down schedule and prescribed frequencies in LaRC PM program per C.12.a.
		Quality*	50		Quality PM is assured thru QC program and work is done in accordance with the SOW and PM program requirements per C.12.a.
C12B	PM Documentation	Timeliness	50	5	Data is recorded in the CMMS within 2 weeks of PM completion and maintained current per C.12.b.
		Quality	50		All required data is recorded in the appropriate PM record in the CMMS upon completion of the work per C.12.b.
C12C	PT&I	Timeliness	50	5	PT&I (oil samples) is done on time at the required frequencies per C.12.c.
		Procedures	50		PT&I (oil samples) is done following the required procedures per C.12.c.
C13	NONRECURRING (IQ) WORK				Note – With the exception of item C13A all work requirements and standards of performance associated with IQ work are identified and negotiated, as necessary, with each WSR. Each WSR is similar to a separate contract, not considered complete until all requirements are satisfied.
C.13A	WSR Reporting, Submittal & Documentation	Timeliness	50	5	All WSRs are reported and documented within the specified time limit per C.13.b & C.13.d.
		Procedures	50		Appropriate procedures are followed and documentation is prepared as required to report all WSRs to the CO per C.13.b & C.13.d.
C15	ENERGY MANAGEMENT				
C15A	EMCS Operations and Engineering	Procedures*	60	5	- EMCS Operations and Engineering Services are provided per C.15d. and C.15.f.
		Documentation	40		- Reports, analyses and other documentation are provided complete and on time per C.15.g.
C15B	Records and Reports	Documentation	50	5	-Documentation is prepared and contains all information and data required by the SOW and Attachment J-C6 per C.15.g
		Timeliness	50		-Records and reports are provided to the CO on time as required by the SOW and Attachment J-C6 per C.15.g.
C15C	Operation Procedures Plan	Timeliness	45	MADN 1/yr	-Draft Initial Plan is submitted to the CO within 90 days of the contract start date and then reviewed, updated and resubmitted quarterly for CO approval per C.15.d.
		Quality*	55		- Initial Plan and Plan Updates are complete, incorporate applicable procedures, and contain all of the data and information required by the PWS; all work is performed in accordance with the Plan per C.15.d.

Contractor REQUIREMENTS		PERFORMANCE REQUIREMENTS			
(1) ITEM NO.	(2) CONTRACT REQUIREMENT	(3) WORK REQUIREMENT	(4) WT. (%)	(4a) MADR %	(5) STANDARD OF PERFORMANCE
C16	OXYGEN AND ULTRASONIC CLEANING AND REFURBISHMENT				
C16A	Records and Reports	Documentation	50	5	-Documentation is prepared and contains all information and data required by the SOW and Attachment J-C6 per C.16.c
		Timeliness	50		-Records and reports are provided to the CO on time as required by the SOW and Attachment J-C6 per C.16.c.
C16B	Operation Procedures Plan	Timeliness	45	MADN 1/yr	-Draft Initial Plan is submitted to the CO within 90 days of the contract start date and then reviewed, updated and resubmitted quarterly for CO approval per C.16.d.
		Quality*	55		- Initial Plan and Plan Updates are complete, incorporate applicable procedures, and contain all of the data and information required by the PWS; all work is performed in accordance with the Plan per C.16.d.
C17	CORROSION CONTROL AND COATING SERVICES	—			
C17A	Records and Reports	Documentation	50	5	-Documentation is prepared and contains all information and data required by the SOW per C.17.c
		Timeliness	50		-Records and reports are provided to the CO on time as required by the SOW per C.17.c.
C17B	Operation Procedures Plan	Timeliness	45	MADN 1/yr	-Draft Initial Plan is submitted to the CO within 90 days of the Contract Start Date and then reviewed, updated and resubmitted quarterly for CO approval per C.17.d.
		Quality*	55		- Initial Plan and Plan Updates are complete, incorporate applicable procedures, and contain all of the data and information required by the PWS; all work is performed in accordance with the Plan per C.17.d.
C17C	Annual Corrosion Control Condition Assessment	Timeliness	30	MADN 1/yr	-Assessment is submitted to the CO on time and complete by March 1 annually per C.17.f.
		Quality*	40		-Assessment contains all required information, including a prioritized list of requirements and recommendations per C.17.f.
		Documentation	30		-Assessment is documented electronically and submitted to the CO in the approved format per C.17.f.
C18	RIGGING AND HAULING SERVICES				
C18A	Records and Reports	Documentation	50	5	-Documentation is prepared and contains all information and data required by the SOW per C.18.c
		Timeliness	50		-Records and reports are provided to the CO on time as required by the SOW per C.18.c
C18B	Operation Procedures Plan	Timeliness	45	MADN 1/yr	-Draft Initial Plan is submitted to the CO within 90 days of the Contract Start Date and then reviewed, updated and resubmitted quarterly for CO approval per C.18.d
		Quality*	55		- Initial Plan and Plan Updates are complete, incorporate applicable procedures, and contain all of the data and information required by the PWS; all work is performed in accordance with the Plan per C.18.d..
C19	CALIBRATION, TESTING AND COMPONENT VERIFICATION				
C19A	Records and Reports	Documentation	50	5	-Documentation is prepared and contains all information and data required by the SOW and Attachment J-C6 per C.19.d.
		Timeliness	50		-Records and reports are provided to the CO on time as required by the SOW and Attachment J-C6 per C.19.d
C19B	Operation Procedures Plan	Timeliness	45	MADN 1/yr	-Draft Initial Plan is submitted to the CO within 90 days of the Contract Start Date and then reviewed, updated and resubmitted quarterly for CO approval per C.19.e
		Quality*	55		- Initial Plan and Plan Updates are complete, incorporate applicable procedures, and contain all of the data and information required by the PWS; all work is performed in accordance with the Plan per C.19.e..

Contractor REQUIREMENTS		PERFORMANCE REQUIREMENTS			
(1) ITEM NO.	(2) CONTRACT REQUIREMENT	(3) WORK REQUIREMENT	(4) WT. (%)	(4a) MADR %	(5) STANDARD OF PERFORMANCE
C20	INDUSTRIAL INSTRUMENTATION AND SUPPORT SERVICES				
C20A	Records and Reports	Documentation	50	5	-Documentation is prepared and contains all information and data required by the SOW per C.20.c
		Timeliness	50		-Records and reports are provided to the CO on time as required by the SOW per C.20.c.
C20B	Operation Procedures Plan	Timeliness	45	MADN 1/yr	-Draft Initial Plan is submitted to the CO within 90 days of the contract start date and then reviewed, updated and resubmitted quarterly for CO approval per C.20.e.
		Quality*	55		- Initial Plan and Plan Updates are complete, incorporate applicable procedures, and contain all of the data and information required by the PWS; all work is performed in accordance with the Plan per C.20.e.
C21	BUILDINGS AND STRUCTURES MAINTENANCE AND REPAIR				
C21A	Records and Reports	Documentation	50	5	-Documentation is prepared and contains all information and data required by the SOW and Attachment J-C6 per C.21.c.
		Timeliness	50		-Records and reports are provided to the CO on time as required by the SOW and Attachment J-C6 per C.21.c.
C21B	Annual Roof Inspection	Timeliness	30	MADN 1/yr	-Inspection report is delivered complete not later than March 1 annually per C.21.h.(2)(c)1.
		Quality	40		-Roof inspection report provides a complete assessment of the condition of all required facilities' roofs and roofing systems, requirements and recommendations in the approved format per C.21.h.(2)(c)1.
		Documentation	30		- Roof inspection report provides a prioritized list of required repairs, identified on roof layout drawings, and the complete report is submitted to the CO on the CMMS per C.21.h.(2)(c)(1).
C22	HVAC&R NAINTENANCE AND REPAIR				
C22A	Records and Reports	Documentation	50	5	-Documentation is prepared and contains all information and data required by the SOW and Attachment J-C6 per C.22.c.
		Timeliness	50		-Records and reports are provided to the CO on time as required by the SOW and Attachment J-C6 per C.22.c.
C22B	Operation Procedures Plan	Timeliness	45	MADN 1/yr	-Draft Initial Plan is submitted to the CO within 90 days of the Contract Start Date and then reviewed, updated and resubmitted quarterly for CO approval per C.22.d.
		Quality*	55		- Initial Plan and Plan Updates are complete, incorporate applicable procedures, and contain all of the data and information required by the PWS; all work is performed in accordance with the Plan per C.22.d
C22C	R12 Refrigerant Management	Procedures*	60	5	-The control and distribution of the R12 inventory is managed, R12 unlawful disposal is prevented, and R12 is captured and recycled per C.22.g
		Documentation	20		-Documentation is maintained recording R12 usage and current inventory and an annual R12 usage and inventory report is prepared per C.22.g.
		Timeliness	20		-R12 usage and inventory data is maintained up to date and the annual usage and inventory report is submitted on time by 1 October per C.22.g.
C22D	Cooling Tower Systems Testing, Treatment, Chemical Control, Inspection and Meter Reading	Timeliness	20	5	-All cooling tower system services, including testing, treatment, control, inspections and meter reading, are completed on time in accordance with the Government approved Treatment Program schedule and as required per C.22.i -Abnormal Cooling Tower water consumption observations are reported to CO within 1 day of observation per C.22.i.

Contractor REQUIREMENTS		PERFORMANCE REQUIREMENTS			
(1) ITEM NO.	(2) CONTRACT REQUIREMENT	(3) WORK REQUIREMENT	(4) WT. (%)	(4a) MADR %	(5) STANDARD OF PERFORMANCE
		Quality*	30		-All Cooling Tower system services, including testing, treatment, control, inspection and equipment requirements, are provided in a manner that satisfy the quality and statutory requirements per C.22.i.
		Procedures	30		-All Cooling Tower system work, including water testing, chemical treatment, facility inspection, and equipment performance, is performed following the Government approved Treatment Program, Standards and the specific requirements per C.22.i. Remedial action is taken if abnormal Cooling Tower water usage is detected per C.22.i.
		Documentation	20		-The Government approved Cooling Tower Treatment program is complete, comprehensive, timely, continuously monitored and modified as necessary per C.22.i. All work, meter reading, inspections and test results are documented, thorough, timely, have the required information and are on the CMMS as required per C.22.i.
C22E	Closed Loop Water Distribution System Chemical Treatment	Timeliness	35	5	-Chemical treatment services, including inspections and required adjustments, are provided on time at 90-day intervals per C.22.j.
		Quality*	35		-pH limits are maintained at 7.0 to 10.0 and nitrate levels at 500 – 1000 ppm per C.22.j.
		Documentation	30		-All inspection checks and treatment are documented, detailed, include the required information, and are provided to CO within 5 days per C.22.j
C23	HIGH AND LOW VOLTAGE ELECTRICAL DISTRIBUTION SYSTEMS MAINTENANCE AND REPAIR				
C23A	Records and Reports	Documentation	50	5	-Documentation is prepared and contains all information and data required by the SOW and Attachment J-C6 per C.23.c.
		Timeliness	50		-Records and reports are provided to the CO on time as required by the SOW and Attachment J-C6 per C.23.c.
C23B	Operation Procedures Plan	Timeliness	45	MADN 1/yr	-Draft Initial Plan is submitted to the CO within 90 days of the Contract Start Date and then reviewed, updated and resubmitted quarterly for CO approval per C.23.d.
		Quality*	55		- Initial Plan and Plan Updates are complete, incorporate applicable procedures, and contain all of the data and information required by the PWS; all work is performed in accordance with the Plan per C.23.d.
C23C	Weekly Battery Bank Maintenance	Timeliness	50	5	-Battery banks are checked and maintained weekly per C.23.f.
		Quality	50		-The weekly checking and maintenance of the battery banks are complete, documented and address al l required elements per C.23.f.
C23D	Weekly Transformer Nitrogen System, Cathode Protection, Cable Oil Reservoir, and Generator Checks and Maintenance	Timeliness	50	5	-Transformer nitrogen systems, cathode protection, cable oil reservoir and generators are checked and maintained weekly per C.23.f.
		Quality	50		-The weekly checking and maintenance of the transformer nitrogen systems, cathode protection, cable oil reservoir and generators are complete, documented and address al l required elements per C.23.f.
C23E	Monthly Transformer Visual Inspection	Timeliness	50	5	-Visual inspection of transformers is performed monthly (minimum of 25 days between inspections) per C.23.f.
		Quality	50		-Visual inspection of transformers is complete and in accordance with the Substation Inspection Record and the PWS per C.23.f.

Contractor REQUIREMENTS		PERFORMANCE REQUIREMENTS			
(1) ITEM NO.	(2) CONTRACT REQUIREMENT	(3) WORK REQUIREMENT	(4) WT. (%)	(4a) MADR %	(5) STANDARD OF PERFORMANCE
C23F	Rubber Glove, Sleeve, Blanket and Hot Stick Inspection	Timeliness*	50	0	-Gloves, sleeves, blankets and hot sticks are inspected on time at their required frequencies per C.23.f
		Quality	50		-Equipment is inspected and gloves and sleeves are certified by laboratory, rejects are destroyed, replacements are provided, and the inventory is maintained per C.23.f.
C23G	Meter Reading	Timeliness	50	5	- All electric meters are read and recorded regularly on the last working day of each month or as otherwise required per C.23.g.
		Documentation	50		- Meter readings are recorded in the CMMS within 2 work days of taking the reading, are in an approved format and contain all of the required data per C.23.g.
C24	STEAM GENERATION, DISTRIBUTION AND REMOTE HEATING PLANT OPERATION, MAINTENANCE AND REPAIR				
C24A	Records and Reports	Documentation	50	5	-Documentation is prepared and contains all information and data required by the SOW and Attachment J-C6 per C.24.c.
		Timeliness	50		-Records and reports are provided to the CO on time as required by the SOW and Attachment J-C6 per C.24.c.
C24B	Operation Procedures Plan	Timeliness	45	MADN 1/yr	-Draft Initial Plan is submitted to the CO within 90 days of the Contract Start Date and then reviewed, updated and resubmitted quarterly for CO approval per C.24.d.
		Quality*	55		- Initial Plan and Plan Updates are complete, incorporate applicable procedures, and contain all of the data and information required by the PWS; all work is performed in accordance with the Plan per C.24.d.
C24C	Plant Operations	Quality*	30	5	-Steam plant, distribution systems, other utility operations and remote heating plants operate within their required parameters and efficiency standards per C.24.g, C.24.j. and C.24.l.
		Timeliness	20		-All services identified as formal action items are completed in accordance with the Government-approved schedule or as otherwise required per C.24.g., C.24.j., and C.24.l.
		Procedures*	30		-All work is performed following the procedures specified in the most up-to-date Government-approved Operations Plan, including Standard Operating Procedures (SOPs) and checklists, as appropriate per C.24.d., C.24.g., and C.24.l.
		Documentation	20		-All work, including Plant Operations Logs, and other required reports, such as for fuel usage, energy consumption , boiler performance report and boiler water test results, are documented on the CMMS on time and such that they can easily and promptly be retrieved by Government personnel as required per C.24.c and C.24.g.
C24D	Boiler Certification	Timeliness	35	5	-Boilers are certified and evaluated as required and as scheduled in the approved Operation Procedures Plan or as otherwise required per C.24.i.
		Procedures*	35		-Certification and support work are performed by qualified personnel in accordance with manufacturer's recommendations, ASME Code, and SPECSINTACT, as applicable, per C.24.i.
		Documentation	30		-All certification documents are submitted to the CO on time per C.24.i.
C24E	Boiler Water Testing and Treatment	Timeliness	40	5	-Samples are collected and tested daily and test results are provided to the Government on time per C.24.g. -Chemical evaluation and analysis of the boiler water is performed annually per C.24.g.

Contractor REQUIREMENTS		PERFORMANCE REQUIREMENTS			
(1) ITEM NO.	(2) CONTRACT REQUIREMENT	(3) WORK REQUIREMENT	(4) WT. (%)	(4a) MADR %	(5) STANDARD OF PERFORMANCE
		Quality*	40		-Boiler water is maintained above the required limits for hardness, phosphate, sulfite, causticity, pH, conductivity, and other dissolved solids per C.24.g. The proper mix of chemicals is determined per C.24.k.
		Documentation	20		-Test results are made available on the CMMS within 2 days of taking the samples and a monthly analysis report is forwarded to the CO on time per C.24.g.
C24F	Fuel Monitoring and Deliveries	Quality	70	5	-All LaRC No.2 fuel tanks are monitored and maintained at 90% capacity or greater; "before" and "after" tank soundings are taken and recorded; fuel deliveries are made as required per C.24.m.
		Documentation	30		-All fuel deliveries are documented on the CMMS on time and in the approved format such that they can easily and promptly be retrieved by Government personnel as required; a monthly fuel delivery summary is submitted complete and on time; per C.24.m.
C25	FIRE PROTECTION AND LIFE SAFETY SYSTEM MAINTENANCE AND REPAIR				
C25A	Records and Reports	Documentation	50	5	-Documentation is prepared and contains all information and data required by the SOW and Attachment J-C6 per C.25.c.
		Timeliness	50		-Records and reports are provided to the CO on time as required by the SOW and Attachment J-C6 per C.25.c.
C25B	Operation Procedures Plan	Timeliness	45	MADN 1/yr	-Draft Initial Plan is submitted to the CO within 90 days of the Contract Start Date and then reviewed, updated and resubmitted quarterly for CO approval per C.25.d.
		Quality*	55		- Initial Plan and Plan Updates are complete, incorporate applicable procedures, and contain all of the data and information required by the PWS; all work is performed in accordance with the Plan per C.25.d.
C26	ELEVATOR MAINTENANCE AND REPAIR				
C26A	Records and Reports	Documentation	50	5	-Documentation is prepared and contains all information and data required by the SOW and Attachment J-C6 per C.26.c.
		Timeliness	50		-Records and reports are provided to the CO on time as required by the SOW and Attachment J-C6 per C.26.c.
C26B	Operation Procedures Plan	Timeliness	45	MADN 1/yr	-Draft Initial Plan is submitted to the CO within 90 days of the Contract Start Date and then reviewed, updated and resubmitted quarterly for CO approval per C.26.d.
		Quality*	55		- Initial Plan and Plan Updates are complete, incorporate applicable procedures, and contain all of the data and information required by the PWS; all work is performed in accordance with the Plan per C.26.d.
C27	ROADS AND OTHER SURFACED AREAS MAINTENANCE AND REPAIR				
C27A	Records and Reports	Documentation	50	5	-Documentation is prepared and contains all information and data required by the SOW and Attachment J-C6 per C.27.d.
		Timeliness	50		-Records and reports are provided to the CO on time as required by the SOW and Attachment J-C6 per C.27.d.
C27B	Condition Inspection and Assessment	Timeliness	30	MADN 1/yr	-A detailed inspection is performed annually (April) and reported to the CO within 7 days of the inspection per C.27e.
		Quality	40		-Inspection and assessment accurately report the conditions of the facilities listed and the degree of remedial urgency required per C.27.e.
		Documentation	30		-The condition and degree of remedial urgency of the inspected areas are reported in writing on the CMMS to the CO per C.27.e.

Contractor REQUIREMENTS		PERFORMANCE REQUIREMENTS			
(1) ITEM NO.	(2) CONTRACT REQUIREMENT	(3) WORK REQUIREMENT	(4) WT. (%)	(4a) MADR %	(5) STANDARD OF PERFORMANCE
C27C	Storm Drainage Outfall and Skimming Basin Monitoring	Timeliness	50	5	- The storm drainage outfalls and skimming basins are monitored weekly and cleaned as needed per C.27.g.
		Quality	50		- Outfalls and skimming basins are maintained in a clean condition so that they operate properly and to their full capacity as designed per C.27.g.
C27D	Snow Removal Plan of Operations	Timeliness	45	MADN 1/yr	- Draft Initial Plan is submitted to CO within 90 days of contract start date, reviewed and updated each November and January, and modified, detailed and submitted to the CO at least 4 hours prior to a forecasted snow or ice-storm per C.27.i.
		Quality	55		- Initial Plan and Plan Updates are complete, comprehensive and contain all of the data and information required per C.27.i.
C28	CRANE MAINTENANCE AND REPAIR				
C28A	Records and Reports	Documentation	50	5	-Documentation is prepared and contains all information and data required by the SOW and Attachment J-C6 per C.28.c.
		Timeliness	50		-Records and reports are provided to the CO on time as required by the SOW and Attachment J-C6 per C.28.c.
C28B	Operation Procedures Plan	Timeliness	45	MADN 1/yr	-Draft Initial Plan is submitted to the CO within 90 days of the Contract Start Date and then reviewed, updated and resubmitted quarterly for CO approval per C.28.d.
		Quality*	55		- Initial Plan and Plan Updates are complete, incorporate applicable procedures, and contain all of the data and information required by the PWS; all work is performed in accordance with the Plan per C.28.d.
C29	POTABLE WATER DISTRIBUTION SYSTEM NAINTENANCE AND REPAIR				
C29A	Records and Reports	Documentation	50	5	-Documentation is prepared and contains all information and data required by the SOW per C.29.d.
		Timeliness	50		-Records and reports are provided to the CO on time as required by the SOW per C.29.d.
C29B	Operation Procedures Plan	Timeliness	45	MADN 1/yr	-Draft Initial Plan is submitted to the CO within 90 days of the Contract Start Date and then reviewed, updated and resubmitted quarterly for CO approval per C.29.e.
		Quality*	55		- Initial Plan and Plan Updates are complete, incorporate applicable procedures, and contain all of the data and information required by the PWS; all work is performed in accordance with the Plan per C.29.e.
C30	SANITARY SEWER SYSTEM MAINTENANCE AND REPAIR	—			
C30A	Records and Reports	Documentation	50	5	-Documentation is prepared and contains all information and data required by the SOW and Attachment J-C6 per C.30.d.
		Timeliness	50		-Records and reports are provided to the CO on time as required by the SOW and Attachment J-C6 per C.30.d.
C30B	Operation Procedures Plan	Timeliness	45	MADN 1/yr	-Draft Initial Plan is submitted to the CO within 90 days of the Contract Start Date and then reviewed, updated and resubmitted quarterly for CO approval per C.30.e.
		Quality*	55		- Initial Plan and Plan Updates are complete, incorporate applicable procedures, and contain all of the data and information required by the PWS; all work is performed in accordance with the Plan per C.30.e.
C30C	System Inspections	Timeliness	35	5	- Pumping stations are inspected on time at the required frequencies and the results documented on the CMMS in the required format within one work day per C.30.h.
		Procedures	65		-Inspection procedures follow the prescribed checklist per C.30.h.

Contractor REQUIREMENTS		PERFORMANCE REQUIREMENTS			
(1) ITEM NO.	(2) CONTRACT REQUIREMENT	(3) WORK REQUIREMENT	(4) WT. (%)	(4a) MADR %	(5) STANDARD OF PERFORMANCE
C31	RESEARCH FACILITY MECHANICAL, ELECTRICAL AND FLUID SYSTEMS MAINTENANCE AND REPAIR				
C31A	Records and Reports	Documentation	50	5	-Documentation is prepared and contains all information and data required by the SOW and Attachment J-C6 per C.31.c.
		Timeliness	50		-Records and reports are provided to the CO on time as required by the SOW and Attachment J-C6 per C.31.c.
C31B	Operation Procedures Plan	Timeliness	45	MADN 1/yr	-Draft Initial Plan is submitted to the CO within 90 days of the Contract Start Date and then reviewed, updated and resubmitted quarterly for CO approval per C.31.d.
		Quality*	55		- Initial Plan and Plan Updates are complete, incorporate applicable procedures, and contain all of the data and information required by the PWS; all work is performed in accordance with the Plan per C.31.d.

EXHIBIT H

EXAMPLE CALCULATION FOR DEDUCTION TAKEN FROM CONTRACTOR'S MONTHLY INVOICE

FROM THE SCHEDULE OF DEDUCTIONS

SECTION C/J REFERENCE	PRS	DESCRIPTION OF SERVICES	EST. ANNUAL QUANTITY	UNIT	UNIT PRICE *	TOTAL PRICE *
C12/J-C9	C12A	Perform PM tasks	12	MO	$150,000	$1,800,000
C11	C11A	Trouble Calls	12	MO	$200,000	$2,400,000
C13	N/A	IQ Task to Repair Pump in Bldg 1146	N/A	N/A	$5,000	$5,000

FROM THE PRS:

PRS	CONTRACT REQUIREMENTS	WORK REQ.	WEIGHT	MADR
C12A	Perform PM tasks	1. Incidental Repairs	10%	5%
		2. Scheduling	15%	5%
		3. Timeliness	25%	5%
		3. Quality	50%	5%
C11A	Perform Trouble Calls	1. Timeliness	30%	3%
		2. Quality	50%	1%
		3. Procedures	20%	4%
C13	IQ Task to Repair pump	1. Timeliness	10%	3%
		2. Coordination	5%	1%

Example 1 - Perform PM tasks in accordance with C12 and J-C9: Assume the Contractor was required to perform 1000 PM tasks in a given month and the QAE observed that the timeliness requirements were not met in 200 of the PM tasks. The deduction to the Contractor's invoice will be based on the price per unit proposed for the work, the weight assigned in the PRS, and the Contractor's failure rate (failure rate=200/1000 = 20%) or:

Price per unit x weight x Contractor's failure rate = Total deduction for this requirement:
*$150,000 x 0.25 x 0.20 = $7,500

Example 2 - Trouble Calls in accordance with C11: Assume Contractor received 1000 Trouble Calls in a given month and the QAE observed that the quality level was unacceptable on 30 of the Trouble Calls. The deduction to the Contractor's invoice will be based on its price per unit proposed for the work, the weight assigned in the PRS, and the Contractor's failure rate (failure rate=30/1000 = 3%) or:

Price per unit x weight x Contractor's failure rate = Total deduction for this requirement
*$200,000 x 0.50 x 0.03 = $3,000

Example 3 - Perform IQ task in accordance with C13: Assume Contractor performed an IQ task and the QAE determined that the required task completion date was not met. The deduction will be based on the IQ task price and the weight for timeliness from Section E.3:

Price of IQ Task x weight = Total deduction for this IQ Task
*$5,000 x 0.10 = $500

*These values are given for example purposes only, and have no correlation with the Government estimate for the work.

EXHIBIT I

Schedule of Deductions

SCHEDULE OF DEDUCTIONS 1: Base Period - September 1, 1999 through August 31, 2000

PRS ITEM NUMBER	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
C1	NOT USED: GENERAL INTENTION				
C2	NOT USED: SCOPE OF WORK				
C3	NOT USED: LIMITATIONS				
C4	NOT USED: DEFINITIONS - TECHNICAL				
C5	NOT USED: GOVERNMENT FURNISHED PROPERTY AND SERVICES				
C6	NOT USED: CONTRACTOR FURNISHED ITEMS				
C7	NOT USED: GENERAL REQUIREMENTS AND PROCEDURES				
C8	MANAGEMENT				
C8A	Work Control	12	MO	$ _____	$ _____
C8B	Monthly Work Schedule	12	MO	$ _____	$ _____
C8C	Annual Work Plan, Phase One and Two	1	EA	$ _____	$ _____
C8D	Subcontract Administration	12	MO	$ _____	$ _____
C8E	Data Management	12	MO	$ _____	$ _____
C8F	Customer Liaison	12	MO	$ _____	$ _____
C8G	Facility Coordinators	12	MO	$ _____	$ _____
C8H	Duty Officer	12	MO	$ _____	$ _____
C8I	Annual Facility Condition Assessment	1	EA	$ _____	$ _____
	Total Price for PRS Line Item C8				$ _____
C9	NOT USED: WORK OUTSIDE REGULAR WORKING HOURS				
C10	CONTINUITY OF SERVICES				
C10A	Backlogged Trouble Calls	1	LOT	$ _____	$ _____
	Total Price for PRS Line Item C10				$ _____
C11	TROUBLE CALLS				
C11A	11,000 Trouble Calls per Year	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C11				$ _____
C12	GENERAL REQUIREMENTS AND PROCEDURES FOR RECURRING WORK				
C12A	Preventive Maintenance	12	MO	$ _____	$ _____
C12B	PM Documentation	12	MO	$ _____	$ _____
C12C	PT&I	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C12				$ _____
C13	GENERAL REQUIREMENTS AND PROCEDURES FOR NON RECURRING (INDEFINITE QUANTITY) WORK				
C13A	WSR Reporting, Submittal & Documentation	12	MO	$ _____	$ _____

SCHEDULE OF DEDUCTIONS 1: Base Period - September 1, 1999 through August 31, 2000

PRS ITEM NUMBER	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
	Total Price for PRS Line Item C13				$ _____
C14	NOT USED				
C15	ENERGY MANAGEMENT				
C15A	EMCS Operations and Engineering	12	MO	$ _____	$ _____
C15B	Records and Reports	12	MO	$ _____	$ _____
C15C	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C15				$ _____
C16	OXYGEN AND ULTRASONIC CLEANING AND REFURBISHMENT				
C16A	Records and Reports	12	MO	$ _____	$ _____
C16B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C16				$ _____
C17	CORROSION CONTROL SERVICES				
C17A	Records and Reports	12	MO	$ _____	$ _____
C17B	Operation Procedures Plan	4	EA	$ _____	$ _____
C17C	Annual Corrosion Control Condition Assessment	1	EA	$ _____	$ _____
	Total Price for PRS Line Item C17				$ _____
C18	RIGGING AND HAULING SERVICES				
C18A	Records and Reports	12	MO	$ _____	$ _____
C18B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C18				$ _____
C19	CALIBRATION, TESTING AND COMPONENT VERIFICATION				
C19A	Records and Reports	12	MO	$ _____	$ _____
C19B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C19				$ _____
C20	INDUSTRIAL INSTRUMENTATION SUPPORT SERVICES				
C20A	Records and Reports	12	MO	$ _____	$ _____
C20B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C20				$ _____

SCHEDULE OF DEDUCTIONS 1: Base Period - September 1, 1999 through August 31, 2000

PRS ITEM NUMBER	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
C21	BUILDINGS AND STRUCTURES MAINTENANCE AND REPAIR				
C21A	Records and Reports	12	MO	$ _____	$ _____
C21B	Annual Roof Inspection	1	EA	$ _____	$ _____
	Total Price for PRS Line Item C21				$ _____
C22	HEATING, VENTILATION, AIR CONDITIONING, AND REFRIGERATION MAINTENANCE AND REPAIR				
C22A	Records and Reports	12	MO	$ _____	$ _____
C22B	Operation Procedures Plan	4	EA	$ _____	$ _____
C22C	R12 Refrigerant Management	12	MO	$ _____	$ _____
C22D	Cooling Tower Systems Testing, Treatment, Chemical Control, Inspection and Meter Reading	12	MO	$ _____	$ _____
C22E	Closed Loop Water Distribution System Chemical Treatment	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C22				$ _____
C23	HIGH AND LOW VOLTAGE ELECTRICAL DISTRIBUTION SYSTEMS MAINTENANCE AND REPAIR				
C23A	Records and Reports	12	MO	$ _____	$ _____
C23B	Operation Procedures Plan	4	EA	$ _____	$ _____
C23C	Weekly Battery Bank Maintenance	52	WK	$ _____	$ _____
C23D	Weekly Transformer Nitrogen System, Cathode Protection, Cable Oil Reservoir, and Generator Checks and Maintenance	52	WK	$ _____	$ _____
C23E	Monthly Transformer Visual Inspection	12	MO	$ _____	$ _____
C23F	Rubber Glove, Sleeve, Blanket and Hot Stick Inspection	12	MO	$ _____	$ _____
C23G	Meter Reading	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C23				$ _____
C24	STEAM GENERATING PLANT AND DISTRIBUTION SYSTEM OPERATION, MAINTENANCE AND REPAIR				
C24A	Records and Reports	12	MO	$ _____	$ _____
C24B	Operation Procedures Plan	4	EA	$ _____	$ _____
C24C	Plant Operations	12	MO	$ _____	$ _____
C24D	Boiler Certification	12	MO	$ _____	$ _____
C24E	Boiler Water Testing and Treatment	12	MO	$ _____	$ _____
C24F	Fuel Monitoring and Deliveries	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C24				$ _____
C25	FIRE PROTECTION SYSTEM MAINTENANCE AND REPAIR				

SCHEDULE OF DEDUCTIONS 1: Base Period - September 1, 1999 through August 31, 2000

PRS ITEM NUMBER	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
C25A	Records and Reports	12	MO	$ _____	$ _____
C25B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C25				$ _____
C26	ELEVATOR MAINTENANCE AND REPAIR				
C26A	Records and Reports	12	MO	$ _____	$ _____
C26B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C26				$ _____
C27	ROADS, SURFACED AREAS AND SIGNAGE MAINTENANCE AND REPAIR				
C27A	Records and Reports	12	MO	$ _____	$ _____
C27B	Condition Inspection and Assessment	1	EA	$ _____	$ _____
C27C	Storm Drainage Outfall and Skimming Basin Monitoring	12	MO	$ _____	$ _____
C27D	Snow Removal Plan of Operations	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C27				$ _____
C28	BUILT-IN CRANES AND LIFTING DEVICES MAINTENANCE AND REPAIR				
C28A	Records and Reports	12	MO	$ _____	$ _____
C28B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C28				$ _____
C29	POTABLE WATER SYSTEM MAINTENANCE AND REPAIR				
C29A	Records and Reports	12	MO	$ _____	$ _____
C29B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C29				$ _____
C30	WASTEWATER SYSTEM MAINTENANCE AND REPAIR				
C30A	Records and Reports	12	MO	$ _____	$ _____
C30B	Operation Procedures Plan	4	EA	$ _____	$ _____
C30C	System Inspections	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C30				$ _____
C31	RESEARCH FACILITIES MECHANICAL, ELECTRICAL, AND FLUID SYSTEMS MAINTENANCE AND REPAIR				
C31A	Records and Reports	12	MO	$ _____	$ _____

SCHEDULE OF DEDUCTIONS 1: Base Period - September 1, 1999 through August 31, 2000

PRS ITEM NUMBER	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
C31B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C31				$ _____
	TOTAL PRICE - BASE PERIOD YEAR 1				$ _____

SCHEDULE OF DEDUCTIONS 2: Base Period - September 1, 2000 through August 31, 2001

PRS ITEM NUMBER	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
C1	NOT USED: GENERAL INTENTION				
C2	NOT USED: SCOPE OF WORK				
C3	NOT USED: LIMITATIONS				
C4	NOT USED: DEFINITIONS - TECHNICAL				
C5	NOT USED: GOVERNMENT FURNISHED PROPERTY AND SERVICES				
C6	NOT USED: CONTRACTOR FURNISHED ITEMS				
C7	NOT USED: GENERAL REQUIREMENTS AND PROCEDURES				
C8	MANAGEMENT				
C8A	Work Control	12	MO	$ _____	$ _____
C8B	Monthly Work Schedule	12	MO	$ _____	$ _____
C8C	Annual Work Plan, Phase One and Two	1	EA	$ _____	$ _____
C8D	Subcontract Administration	12	MO	$ _____	$ _____
C8E	Data Management	12	MO	$ _____	$ _____
C8F	Customer Liaison	12	MO	$ _____	$ _____
C8G	Facility Coordinators	12	MO	$ _____	$ _____
C8H	Duty Officer	12	MO	$ _____	$ _____
C8I	Annual Facility Condition Assessment	1	EA	$ _____	$ _____
	Total Price for PRS Line Item C8				$ _____
C9	NOT USED: WORK OUTSIDE REGULAR WORKING HOURS				
C10	CONTINUITY OF SERVICES				
C10A	Backlogged Trouble Calls	1	LOT	$ _____	$ _____
	Total Price for PRS Line Item C10				$ _____
C11	TROUBLE CALLS				
C11A	11,000 Trouble Calls per Year	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C11				$ _____
C12	GENERAL REQUIREMENTS AND PROCEDURES FOR RECURRING WORK				
C12A	Preventive Maintenance	12	MO	$ _____	$ _____
C12B	PM Documentation	12	MO	$ _____	$ _____
C12C	PT&I	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C12				$ _____
C13	GENERAL REQUIREMENTS AND PROCEDURES FOR NON RECURRING (INDEFINITE QUANTITY) WORK				

SCHEDULE OF DEDUCTIONS 2: Base Period - September 1, 2000 through August 31, 2001

PRS ITEM NUMBER	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
C13A	WSR Reporting, Submittal & Documentation	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C13				$ _____
C14	NOT USED				
C15	ENERGY MANAGEMENT				
C15A	EMCS Operations and Engineering	12	MO	$ _____	$ _____
C15B	Records and Reports	12	MO	$ _____	$ _____
C15C	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C15				$ _____
C16	OXYGEN AND ULTRASONIC CLEANING AND REFURBISHMENT				
C16A	Records and Reports	12	MO	$ _____	$ _____
C16B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C16				$ _____
C17	CORROSION CONTROL SERVICES				
C17A	Records and Reports	12	MO	$ _____	$ _____
C17B	Operation Procedures Plan	4	EA	$ _____	$ _____
C17C	Annual Corrosion Control Condition Assessment	1	EA	$ _____	$ _____
	Total Price for PRS Line Item C17				$ _____
C18	RIGGING AND HAULING SERVICES				
C18A	Records and Reports	12	MO	$ _____	$ _____
C18B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C18				$ _____
C19	CALIBRATION, TESTING AND COMPONENT VARIFICATION				
C19A	Records and Reports	12	MO	$ _____	$ _____
C19B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C19				$ _____
C20	INDUSTRIAL INSTRUMENTATION SUPPORT SERVICES				
C20A	Records and Reports	12	MO	$ _____	$ _____
C20B	Operation Procedures Plan	4	EA	$ _____	$ _____

SCHEDULE OF DEDUCTIONS 2: Base Period - September 1, 2000 through August 31, 2001

PRS ITEM NUMBER	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
	Total Price for PRS Line Item C20				$ _____
C21	BUILDINGS AND STRUCTURES MAINTENANCE AND REPAIR				
C21A	Records and Reports	12	MO	$ _____	$ _____
C21B	Annual Roof Inspection	1	EA	$ _____	$ _____
	Total Price for PRS Line Item C21				$ _____
C22	HEATING, VENTILATION, AIR CONDITIONING, AND REFRIGERATION MAINTENANCE AND REPAIR				
C22A	Records and Reports	12	MO	$ _____	$ _____
C22B	Operation Procedures Plan	4	EA	$ _____	$ _____
C22C	R12 Refrigerant Management	12	MO	$ _____	$ _____
C22D	Cooling Tower Systems Testing, Treatment, Chemical Control, Inspection and Meter Reading	12	MO	$ _____	$ _____
C22E	Closed Loop Water Distribution System Chemical Treatment	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C22				$ _____
C23	HIGH AND LOW VOLTAGE ELECTRICAL DISTRIBUTION SYSTEMS MAINTENANCE AND REPAIR				
C23A	Records and Reports	12	MO	$ _____	$ _____
C23B	Operation Procedures Plan	4	EA	$ _____	$ _____
C23C	Weekly Battery Bank Maintenance	52	WK	$ _____	$ _____
C23D	Weekly Transformer Nitrogen System, Cathode Protection, Cable Oil Reservoir, and Generator Checks and Maintenance	52	WK	$ _____	$ _____
C23E	Monthly Transformer Visual Inspection	12	MO	$ _____	$ _____
C23F	Rubber Glove, Sleeve, Blanket and Hot Stick Inspection	12	MO	$ _____	$ _____
C23G	Meter Reading	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C23				$ _____
C24	STEAM GENERATING PLANT AND DISTRIBUTION SYSTEM OPERATION, MAINTENANCE AND REPAIR				
C24A	Records and Reports	12	MO	$ _____	$ _____
C24B	Operation Procedures Plan	4	EA	$ _____	$ _____
C24C	Plant Operations	12	MO	$ _____	$ _____
C24D	Boiler Certification	12	MO	$ _____	$ _____
C24E	Boiler Water Testing and Treatment	12	MO	$ _____	$ _____
C24F	Fuel Monitoring and Deliveries	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C24				$ _____

SCHEDULE OF DEDUCTIONS 2: Base Period - September 1, 2000 through August 31, 2001

PRS ITEM NUMBER	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
C25	FIRE PROTECTION SYSTEM MAINTENANCE AND REPAIR				
C25A	Records and Reports	12	MO	$ _____	$ _____
C25B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C25				$ _____
C26	ELEVATOR MAINTENANCE AND REPAIR				
C26A	Records and Reports	12	MO	$ _____	$ _____
C26B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C26				$ _____
C27	ROADS, SURFACED AREAS AND SIGNAGE MAINTENANCE AND REPAIR				
C27A	Records and Reports	12	MO	$ _____	$ _____
C27B	Condition Inspection and Assessment	1	EA	$ _____	$ _____
C27C	Storm Drainage Outfall and Skimming Basin Monitoring	12	MO	$ _____	$ _____
C27D	Snow Removal Plan of Operations	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C27				$ _____
C28	BUILT-IN CRANES AND LIFTING DEVICES MAINTENANCE AND REPAIR				
C28A	Records and Reports	12	MO	$ _____	$ _____
C28B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C28				$ _____
C29	POTABLE WATER SYSTEM MAINTENANCE AND REPAIR				
C29A	Records and Reports	12	MO	$ _____	$ _____
C29B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C29				$ _____
C30	WASTEWATER SYSTEM MAINTENANCE AND REPAIR				
C30A	Records and Reports	12	MO	$ _____	$ _____
C30B	Operation Procedures Plan	4	EA	$ _____	$ _____
C30C	System Inspections	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C30				$ _____
C31	RESEARCH FACILITIES MECHANICAL, ELECTRICAL, AND FLUID SYSTEMS MAINTENANCE AND REPAIR				

SCHEDULE OF DEDUCTIONS 2: Base Period - September 1, 2000 through August 31, 2001

PRS ITEM NUMBER	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT		UNIT PRICE		TOTAL PRICE
C31A	Records and Reports	12	MO	$	_____	$	_____
C31B	Operation Procedures Plan	4	EA	$	_____	$	_____
	Total Price for PRS Line Item C31					$	_____
	TOTAL PRICE - BASE PERIOD YEAR 2					$	_____

SCHEDULE OF DEDUCTIONS 3: Option Period 1 - September 1, 2001 through August 31, 2002

PRS ITEM NUMBER	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
C1	NOT USED: GENERAL INTENTION				
C2	NOT USED: SCOPE OF WORK				
C3	NOT USED: LIMITATIONS				
C4	NOT USED: DEFINITIONS - TECHNICAL				
C5	NOT USED: GOVERNMENT FURNISHED PROPERTY AND SERVICES				
C6	NOT USED: CONTRACTOR FURNISHED ITEMS				
C7	NOT USED: GENERAL REQUIREMENTS AND PROCEDURES				
C8	MANAGEMENT				
C8A	Work Control		12 MO	$	$
C8B	Monthly Work Schedule		12 MO	$	$
C8C	Annual Work Plan, Phase One and Two		1 EA	$	$
C8D	Subcontract Administration		12 MO	$	$
C8E	Data Management		12 MO	$	$
C8F	Customer Liaison		12 MO	$	$
C8G	Facility Coordinators		12 MO	$	$
C8H	Duty Officer		12 MO	$	$
C8I	Annual Facility Condition Assessment		1 EA	$	$
	Total Price for PRS Line Item C8				$
C9	NOT USED: WORK OUTSIDE REGULAR WORKING HOURS				
C10	CONTINUITY OF SERVICES				
C10A	Backlogged Trouble Calls		1 LOT	$	$
	Total Price for PRS Line Item C10				$
C11	TROUBLE CALLS				
C11A	11,000 Trouble Calls per Year		12 MO		$
	Total Price for PRS Line Item C11				$
C12	GENERAL REQUIREMENTS AND PROCEDURES FOR RECURRING WORK				
C12A	Preventive Maintenance		12 MO	$	$
C12B	PM Documentation		12 MO	$	$
C12C	PT&I		12 MO	$	$
	Total Price for PRS Line Item C12				$
C13	GENERAL REQUIREMENTS AND PROCEDURES FOR NON RECURRING (INDEFINITE QUANTITY) WORK				

SCHEDULE OF DEDUCTIONS 3: Option Period 1 - September 1, 2001 through August 31, 2002

PRS ITEM NUMBER	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
C13A	WSR Reporting, Submittal & Documentation	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C13				$ _____
C14	NOT USED				
C15	ENERGY MANAGEMENT				
C15A	EMCS Operations and Engineering	12	MO	$ _____	$ _____
C15B	Records and Reports	12	MO	$ _____	$ _____
C15C	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C15				$ _____
C16	OXYGEN AND ULTRASONIC CLEANING AND REFURBISHMENT				
C16A	Records and Reports	12	MO	$ _____	$ _____
C16B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C16				$ _____
C17	CORROSION CONTROL SERVICES				
C17A	Records and Reports	12	MO	$ _____	$ _____
C17B	Operation Procedures Plan	4	EA	$ _____	$ _____
C17C	Annual Corrosion Control Condition Assessment	1	EA	$ _____	$ _____
	Total Price for PRS Line Item C17				$ _____
C18	RIGGING AND HAULING SERVICES				
C18A	Records and Reports	12	MO	$ _____	$ _____
C18B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C18				$ _____
C19	CALIBRATION, TESTING AND COMPONENT VARIFICATION				
C19A	Records and Reports	12	MO	$ _____	$ _____
C19B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C19				$ _____
C20	INDUSTRIAL INSTRUMENTATION SUPPORT SERVICES				
C20A	Records and Reports	12	MO	$ _____	$ _____
C20B	Operation Procedures Plan	4	EA	$ _____	$ _____

PRS ITEM NUMBER	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
	Total Price for PRS Line Item C20				$ _____
C21	BUILDINGS AND STRUCTURES MAINTENANCE AND REPAIR				
C21A	Records and Reports	12	MO	$ _____	$ _____
C21B	Annual Roof Inspection	1	EA	$ _____	$ _____
	Total Price for PRS Line Item C21				$ _____
C22	HEATING, VENTILATION, AIR CONDITIONING, AND REFRIGERATION MAINTENANCE AND REPAIR				
C22A	Records and Reports	12	MO	$ _____	$ _____
C22B	Operation Procedures Plan	4	EA	$ _____	$ _____
C22C	R12 Refrigerant Management	12	MO	$ _____	$ _____
C22D	Cooling Tower Systems Testing, Treatment, Chemical Control, Inspection and Meter Reading	12	MO	$ _____	$ _____
C22E	Closed Loop Water Distribution System Chemical Treatment	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C22				$ _____
C23	HIGH AND LOW VOLTAGE ELECTRICAL DISTRIBUTION SYSTEMS MAINTENANCE AND REPAIR				
C23A	Records and Reports	12	MO	$ _____	$ _____
C23B	Operation Procedures Plan	4	EA	$ _____	$ _____
C23C	Weekly Battery Bank Maintenance	52	WK	$ _____	$ _____
C23D	Weekly Transformer Nitrogen System, Cathode Protection, Cable Oil Reservoir, and Generator Checks and Maintenance	52	WK	$ _____	$ _____
C23E	Monthly Transformer Visual Inspection	12	MO	$ _____	$ _____
C23F	Rubber Glove, Sleeve, Blanket and Hot Stick Inspection	12	MO	$ _____	$ _____
C23G	Meter Reading	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C23				$ _____
C24	STEAM GENERATING PLANT AND DISTRIBUTION SYSTEM OPERATION, MAINTENANCE AND REPAIR				
C24A	Records and Reports	12	MO	$ _____	$ _____
C24B	Operation Procedures Plan	4	EA	$ _____	$ _____
C24C	Plant Operations	12	MO	$ _____	$ _____
C24D	Boiler Certification	12	MO	$ _____	$ _____
C24E	Boiler Water Testing and Treatment	12	MO	$ _____	$ _____
C24F	Fuel Monitoring and Deliveries	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C24				$ _____

SCHEDULE OF DEDUCTIONS 3: Option Period 1 - September 1, 2001 through August 31, 2002

PRS ITEM NUMBER	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
C25	FIRE PROTECTION SYSTEM MAINTENANCE AND REPAIR				
C25A	Records and Reports	12	MO	$ _____	$ _____
C25B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C25				$ _____
C26	ELEVATOR MAINTENANCE AND REPAIR				
C26A	Records and Reports	12	MO	$ _____	$ _____
C26B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C26				$ _____
C27	ROADS, SURFACED AREAS AND SIGNAGE MAINTENANCE AND REPAIR				
C27A	Records and Reports	12	MO	$ _____	$ _____
C27B	Condition Inspection and Assessment	1	EA	$ _____	$ _____
C27C	Storm Drainage Outfall and Skimming Basin Monitoring	12	MO	$ _____	$ _____
C27D	Snow Removal Plan of Operations	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C27				$ _____
C28	BUILT-IN CRANES AND LIFTING DEVICES MAINTENANCE AND REPAIR				
C28A	Records and Reports	12	MO	$ _____	$ _____
C28B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C28				$ _____
C29	POTABLE WATER SYSTEM MAINTENANCE AND REPAIR				
C29A	Records and Reports	12	MO	$ _____	$ _____
C29B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C29				$ _____
C30	WASTEWATER SYSTEM MAINTENANCE AND REPAIR				
C30A	Records and Reports	12	MO	$ _____	$ _____
C30B	Operation Procedures Plan	4	EA	$ _____	$ _____
C30C	System Inspections	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C30				$ _____

SCHEDULE OF DEDUCTIONS 3. Option Period 1 - September 1, 2001 through August 31, 2002

PRS ITEM NUMBER	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
C31	RESEARCH FACILITIES MECHANICAL, ELECTRICAL, AND FLUID SYSTEMS MAINTENANCE AND REPAIR				
C31A	Records and Reports	12	MO	$ _____	$ _____
C31B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C31				$ _____
	TOTAL PRICE - OPTION PERIOD YEAR 1				$ _____

SCHEDULE OF DEDUCTIONS 4: Option Period 2 - September 1, 2002 through August 31, 2003

PRS ITEM NUMBER	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
C1	NOT USED: GENERAL INTENTION				
C2	NOT USED: SCOPE OF WORK				
C3	NOT USED: LIMITATIONS				
C4	NOT USED: DEFINITIONS - TECHNICAL				
C5	NOT USED: GOVERNMENT FURNISHED PROPERTY AND SERVICES				
C6	NOT USED: CONTRACTOR FURNISHED ITEMS				
C7	NOT USED: GENERAL REQUIREMENTS AND PROCEDURES				
C8	MANAGEMENT				
C8A	Work Control	12	MO	$ _____	$ _____
C8B	Monthly Work Schedule	12	MO	$ _____	$ _____
C8C	Annual Work Plan, Phase One and Two	1	EA	$ _____	$ _____
C8D	Subcontract Administration	12	MO	$ _____	$ _____
C8E	Data Management	12	MO	$ _____	$ _____
C8F	Customer Liaison	12	MO	$ _____	$ _____
C8G	Facility Coordinators	12	MO	$ _____	$ _____
C8H	Duty Officer	12	MO	$ _____	$ _____
C8I	Annual Facility Condition Assessment	1	EA	$ _____	$ _____
	Total Price for PRS Line Item C8				$ _____
C9	NOT USED: WORK OUTSIDE REGULAR WORKING HOURS				
C10	CONTINUITY OF SERVICES				
C10A	Backlogged Trouble Calls	1	LOT	$ _____	$ _____
	Total Price for PRS Line Item C10				$ _____
C11	TROUBLE CALLS				
C11A	11,000 Trouble Calls per Year	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C11				$ _____
C12	GENERAL REQUIREMENTS AND PROCEDURES FOR RECURRING WORK				
C12A	Preventive Maintenance	12	MO	$ _____	$ _____
C12B	PM Documentation	12	MO	$ _____	$ _____
C12C	PT&I	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C12				$ _____

SCHEDULE OF DEDUCTIONS 4. Option Period 2 - September 1, 2002 through August 31, 2003

PRS ITEM NUMBER	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
C13	GENERAL REQUIREMENTS AND PROCEDURES FOR NON RECURRING (INDEFINITE QUANTITY) WORK				
C13A	WSR Reporting, Submittal & Documentation		12 MO	$ _____	$ _____
	Total Price for PRS Line Item C13				$ _____
C14	NOT USED				
C15	ENERGY MANAGEMENT				
C15A	EMCS Operations and Engineering		12 MO	$ _____	$ _____
C15B	Records and Reports		12 MO	$ _____	$ _____
C15C	Operation Procedures Plan		4 EA	$ _____	$ _____
	Total Price for PRS Line Item C15				$ _____
C16	OXYGEN AND ULTRASONIC CLEANING AND REFURBISHMENT				
C16A	Records and Reports		12 MO	$ _____	$ _____
C16B	Operation Procedures Plan		4 EA	$ _____	$ _____
	Total Price for PRS Line Item C16				$ _____
C17	CORROSION CONTROL SERVICES				
C17A	Records and Reports		12 MO	$ _____	$ _____
C17B	Operation Procedures Plan		4 EA	$ _____	$ _____
C17C	Annual Corrosion Control Condition Assessment		1 EA	$ _____	$ _____
	Total Price for PRS Line Item C17				$ _____
C18	RIGGING AND HAULING SERVICES				
C18A	Records and Reports		12 MO	$ _____	$ _____
C18B	Operation Procedures Plan		4 EA	$ _____	$ _____
	Total Price for PRS Line Item C18				$ _____
C19	CALIBRATION, TESTING AND COMPONENT VARIFICATION				
C19A	Records and Reports		12 MO	$ _____	$ _____
C19B	Operation Procedures Plan		4 EA	$ _____	$ _____
	Total Price for PRS Line Item C19				$ _____

SCHEDULE OF DEDUCTIONS 4: Option Period 2 - September 1, 2002 through August 31, 2003

PRS ITEM NUMBER	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
C20	INDUSTRIAL INSTRUMENTATION SUPPORT SERVICES				
C20A	Records and Reports	12	MO	$ _____	$ _____
C20B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C20				$ _____
C21	BUILDINGS AND STRUCTURES MAINTENANCE AND REPAIR				
C21A	Records and Reports	12	MO	$ _____	$ _____
C21B	Annual Roof Inspection	1	EA	$ _____	$ _____
	Total Price for PRS Line Item C21				$ _____
C22	HEATING, VENTILATION, AIR CONDITIONING, AND REFRIGERATION MAINTENANCE AND REPAIR				
C22A	Records and Reports	12	MO	$ _____	$ _____
C22B	Operation Procedures Plan	4	EA	$ _____	$ _____
C22C	R12 Refrigerant Management	12	MO	$ _____	$ _____
C22D	Cooling Tower Systems Testing, Treatment, Chemical Control, Inspection and Meter Reading	12	MO	$ _____	$ _____
C22E	Closed Loop Water Distribution System Chemical Treatment	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C22				$ _____
C23	HIGH AND LOW VOLTAGE ELECTRICAL DISTRIBUTION SYSTEMS MAINTENANCE AND REPAIR				
C23A	Records and Reports	12	MO	$ _____	$ _____
C23B	Operation Procedures Plan	4	EA	$ _____	$ _____
C23C	Weekly Battery Bank Maintenance	52	WK	$ _____	$ _____
C23D	Weekly Transformer Nitrogen System, Cathode Protection, Cable Oil Reservoir, and Generator Checks and Maintenance	52	WK	$ _____	$ _____
C23E	Monthly Transformer Visual Inspection	12	MO	$ _____	$ _____
C23F	Rubber Glove, Sleeve, Blanket and Hot Stick Inspection	12	MO	$ _____	$ _____
C23G	Meter Reading	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C23				$ _____
C24	STEAM GENERATING PLANT AND DISTRIBUTION SYSTEM OPERATION, MAINTENANCE AND REPAIR				
C24A	Records and Reports	12	MO	$ _____	$ _____
C24B	Operation Procedures Plan	4	EA	$ _____	$ _____
C24C	Plant Operations	12	MO	$ _____	$ _____
C24D	Boiler Certification	12	MO	$ _____	$ _____
C24E	Boiler Water Testing and Treatment	12	MO	$ _____	$ _____

SCHEDULE OF DEDUCTIONS 4: Option Period 2 - September 1, 2002 through August 31, 2003

PRS ITEM NUMBER	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
C24F	Fuel Monitoring and Deliveries	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C24				$ _____
C25	FIRE PROTECTION SYSTEM MAINTENANCE AND REPAIR				
C25A	Records and Reports	12	MO	$ _____	$ _____
C25B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C25				$ _____
C26	ELEVATOR MAINTENANCE AND REPAIR				
C26A	Records and Reports	12	MO	$ _____	$ _____
C26B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C26				$ _____
C27	ROADS, SURFACED AREAS AND SIGNAGE MAINTENANCE AND REPAIR				
C27A	Records and Reports	12	MO	$ _____	$ _____
C27B	Condition Inspection and Assessment	1	EA	$ _____	$ _____
C27C	Storm Drainage Outfall and Skimming Basin Monitoring	12	MO	$ _____	$ _____
C27D	Snow Removal Plan of Operations	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C27				$ _____
C28	BUILT-IN CRANES AND LIFTING DEVICES MAINTENANCE AND REPAIR				
C28A	Records and Reports	12	MO	$ _____	$ _____
C28B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C28				$ _____
C29	POTABLE WATER SYSTEM MAINTENANCE AND REPAIR				
C29A	Records and Reports	12	MO	$ _____	$ _____
C29B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C29				$ _____
C30	WASTEWATER SYSTEM MAINTENANCE AND REPAIR				
C30A	Records and Reports	12	MO	$ _____	$ _____
C30B	Operation Procedures Plan	4	EA	$ _____	$ _____
C30C	System Inspections	12	MO	$ _____	$ _____

SCHEDULE OF DEDUCTIONS 4: Option Period 2 - September 1, 2002 through August 31, 2003

PRS ITEM NUMBER	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT		UNIT PRICE		TOTAL PRICE
	Total Price for PRS Line Item C30					$	_____
C31	RESEARCH FACILITIES MECHANICAL, ELECTRICAL, AND FLUID SYSTEMS MAINTENANCE AND REPAIR						
C31A	Records and Reports	12	MO	$	_____	$	_____
C31B	Operation Procedures Plan	4	EA	$	_____	$	_____
	Total Price for PRS Line Item C31					$	_____
	TOTAL PRICE - Option Period 2					$	_____

SCHEDULE OF DEDUCTIONS 5. Option Period 3 - September 1, 2003 through August 31, 2004

PRS ITEM NUMBER	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
C1	NOT USED: GENERAL INTENTION				
C2	NOT USED: SCOPE OF WORK				
C3	NOT USED: LIMITATIONS				
C4	NOT USED: DEFINITIONS - TECHNICAL				
C5	NOT USED: GOVERNMENT FURNISHED PROPERTY AND SERVICES				
C6	NOT USED: CONTRACTOR FURNISHED ITEMS				
C7	NOT USED: GENERAL REQUIREMENTS AND PROCEDURES				
C8	MANAGEMENT				
C8A	Work Control	12	MO	$ _____	$ _____
C8B	Monthly Work Schedule	12	MO	$ _____	$ _____
C8C	Annual Work Plan, Phase One and Two	1	EA	$ _____	$ _____
C8D	Subcontract Administration	12	MO	$ _____	$ _____
C8E	Data Management	12	MO	$ _____	$ _____
C8F	Customer Liaison	12	MO	$ _____	$ _____
C8G	Facility Coordinators	12	MO	$ _____	$ _____
C8H	Duty Officer	12	MO	$ _____	$ _____
C8I	Annual Facility Condition Assessment	1	EA	$ _____	$ _____
	Total Price for PRS Line Item C8				$ _____
C9	NOT USED: WORK OUTSIDE REGULAR WORKING HOURS				
C10	CONTINUITY OF SERVICES				
C10A	Backlogged Trouble Calls	1	LOT	$ _____	$ _____
	Total Price for PRS Line Item C10				$ _____
C11	TROUBLE CALLS				
C11A	11,000 Trouble Calls per Year	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C11				$ _____
C12	GENERAL REQUIREMENTS AND PROCEDURES FOR RECURRING WORK				
C12A	Preventive Maintenance	12	MO	$ _____	$ _____
C12B	PM Documentation	12	MO	$ _____	$ _____
C12C	PT&I	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C12				$ _____
C13	GENERAL REQUIREMENTS AND PROCEDURES FOR NON RECURRING (INDEFINITE QUANTITY) WORK				

SCHEDULE OF DEDUCTIONS 5: Option Period 3 - September 1, 2003 through August 31, 2004

PRS ITEM NUMBER	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
C13A	WSR Reporting, Submittal & Documentation	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C13				$ _____
C14	NOT USED				
C15	ENERGY MANAGEMENT				
C15A	EMCS Operations and Engineering	12	MO	$ _____	$ _____
C15B	Records and Reports	12	MO	$ _____	$ _____
C15C	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C15				$ _____
C16	OXYGEN AND ULTRASONIC CLEANING AND REFURBISHMENT				
C16A	Records and Reports	12	MO	$ _____	$ _____
C16B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C16				$ _____
C17	CORROSION CONTROL SERVICES				
C17A	Records and Reports	12	MO	$ _____	$ _____
C17B	Operation Procedures Plan	4	EA	$ _____	$ _____
C17C	Annual Corrosion Control Condition Assessment	1	EA	$ _____	$ _____
	Total Price for PRS Line Item C17				$ _____
C18	RIGGING AND HAULING SERVICES				
C18A	Records and Reports	12	MO	$ _____	$ _____
C18B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C18				$ _____
C19	CALIBRATION, TESTING AND COMPONENT VARIFICATION				
C19A	Records and Reports	12	MO	$ _____	$ _____
C19B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C19				$ _____
C20	INDUSTRIAL INSTRUMENTATION SUPPORT SERVICES				
C20A	Records and Reports	12	MO	$ _____	$ _____
C20B	Operation Procedures Plan	4	EA	$ _____	$ _____

SCHEDULE OF DEDUCTIONS 5: Option Period 3 - September 1, 2003 through August 31, 2004

PRS ITEM NUMBER	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
	Total Price for PRS Line Item C20				$ _____
C21	BUILDINGS AND STRUCTURES MAINTENANCE AND REPAIR				
C21A	Records and Reports	12	MO	$ _____	$ _____
C21B	Annual Roof Inspection	1	EA	$ _____	$ _____
	Total Price for PRS Line Item C21				$ _____
C22	HEATING, VENTILATION, AIR CONDITIONING, AND REFRIGERATION MAINTENANCE AND REPAIR				
C22A	Records and Reports	12	MO	$ _____	$ _____
C22B	Operation Procedures Plan—	4	EA	$ _____	$ _____
C22C	R12 Refrigerant Management	12	MO	$ _____	$ _____
C22D	Cooling Tower Systems Testing, Treatment, Chemical Control, Inspection and Meter Reading	12	MO	$ _____	$ _____
C22E	Closed Loop Water Distribution System Chemical Treatment	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C22				$ _____
C23	HIGH AND LOW VOLTAGE ELECTRICAL DISTRIBUTION SYSTEMS MAINTENANCE AND REPAIR				
C23A	Records and Reports	12	MO	$ _____	$ _____
C23B	Operation Procedures Plan	4	EA	$ _____	$ _____
C23C	Weekly Battery Bank Maintenance	52	WK	$ _____	$ _____
C23D	Weekly Transformer Nitrogen System, Cathode Protection, Cable Oil Reservoir, and Generator Checks and Maintenance	52	WK	$ _____	$ _____
C23E	Monthly Transformer Visual Inspection	12	MO	$ _____	$ _____
C23F	~~Rubber Glove, Sleeve, Blanket and Hot Stick Inspection~~	12	MO	$ _____	$ _____
C23G	Meter Reading	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C23				$ _____
C24	STEAM GENERATING PLANT AND DISTRIBUTION SYSTEM OPERATION, MAINTENANCE AND REPAIR				
C24A	Records and Reports	12	MO	$ _____	$ _____
C24B	Operation Procedures Plan	4	EA	$ _____	$ _____
C24C	Plant Operations	12	MO	$ _____	$ _____
C24D	Boiler Certification	12	MO	$ _____	$ _____
C24E	Boiler Water Testing and Treatment	12	MO	$ _____	$ _____
C24F	Fuel Monitoring and Deliveries	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C24				$ _____
C25	FIRE PROTECTION SYSTEM MAINTENANCE AND REPAIR				

SCHEDULE OF DEDUCTIONS 5: Option Period 3 - September 1, 2003 through August 31, 2004

PRS ITEM NUMBER	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
C25A	Records and Reports	12	MO	$ _____	$ _____
C25B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C25				$ _____
C26	ELEVATOR MAINTENANCE AND REPAIR				
C26A	Records and Reports	12	MO	$ _____	$ _____
C26B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C26				$ _____
C27	ROADS, SURFACED AREAS AND SIGNAGE MAINTENANCE AND REPAIR				
C27A	Records and Reports	12	MO	$ _____	$ _____
C27B	Condition Inspection and Assessment	1	EA	$ _____	$ _____
C27C	Storm Drainage Outfall and Skimming Basin Monitoring	12	MO	$ _____	$ _____
C27D	Snow Removal Plan of Operations	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C27				$ _____
C28	BUILT-IN CRANES AND LIFTING DEVICES MAINTENANCE AND REPAIR				
C28A	Records and Reports	12	MO	$ _____	$ _____
C28B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C28				$
C29	POTABLE WATER SYSTEM MAINTENANCE AND REPAIR				
C29A	Records and Reports	12	MO	$ _____	$ _____
C29B	Operation Procedures Plan	4	EA	$ _____	$ _____
	Total Price for PRS Line Item C29				$ _____
C30	WASTEWATER SYSTEM MAINTENANCE AND REPAIR				
C30A	Records and Reports	12	MO	$ _____	$ _____
C30B	Operation Procedures Plan	4	EA	$ _____	$ _____
C30C	System Inspections	12	MO	$ _____	$ _____
	Total Price for PRS Line Item C30				$ _____
C31	RESEARCH FACILITIES MECHANICAL, ELECTRICAL, AND FLUID SYSTEMS MAINTENANCE AND REPAIR				

SCHEDULE OF DEDUCTIONS 5: Option Period 3 - September 1, 2003 through August 31, 2004

PRS ITEM NUMBER	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT		UNIT PRICE		TOTAL PRICE
C31A	Records and Reports	12	MO	$	_____	$	_____
C31B	Operation Procedures Plan	4	EA	$	_____	$	_____
	Total Price for PRS Line Item C31					$	_____
	TOTAL PRICE - OPTION PERIOD 3					$	_____

PART IV - REPRESENTATIONS AND INSTRUCTIONS

SECTION K - REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF OFFERORS

IMPORTANT NOTE: See Section I Clause 52.219-23, Notice of Price Evaluation Adjustment for Small Disadvantaged Business (SDB) Concerns (OCT 98). Those SDB concerns electing to waive the adjustment must check Paragraph (c) of the clause. See also Section I clause 52.219-4, Notice of Price Evaluation Preference for HUBZone Small Business Concerns (JAN 1999). Those SDB concerns electing to waive the adjustment must check Paragraph (c) of the clause.

K.1 CERTIFICATE OF INDEPENDENT PRICE DETERMINATION (FAR 52.203-2) (APR 1985)

(a) The offeror certifies that -

(1) The prices in this offer have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other offeror or competitor relating to (i) those prices, (ii) the intention to submit an offer, or (iii) the methods or factors used to calculate the prices offered;

(2) The prices in this offer have not been and will not be knowingly disclosed by the offeror, directly or indirectly, to any other offeror or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and

(3) No attempt has been made or will be made by the offeror to induce any other concern to submit or not to submit an offer for the purpose of restricting competition.

(b) Each signature on the offer is considered to be a certification by the signatory that the signatory -

(1) Is the person in the offeror's organization responsible for determining the prices being offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above; or

(2) (i) Has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above _____ (insert full name of person(s) in the offeror's organization responsible for determining the prices offered in this bid or proposal and the title of his or her position in the offeror's organization);

(ii) As an authorized agent does certify that the principals named in subdivision (b)(2)(i) above have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above; and

(iii) As an agent, has not personally participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above.

(c) If the offeror deletes or modifies subparagraph (a)(2) above, the offeror must furnish with its offer a signed statement setting forth in detail the circumstances of the disclosure.

K.2 CERTIFICATION AND DISCLOSURE REGARDING PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (FAR 52.203-11) (APR 1991)

(a) The definitions and prohibitions contained in the clause, at FAR 52.203-12, Limitation on Payments to Influence Certain Federal Transactions, included in this solicitation, are hereby incorporated by reference in paragraph (b) of this certification.

(b) The offeror, by signing its offer, hereby certifies to the best of his or her knowledge and belief, that on or after December 23, 1989, -

(1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any

Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with this solicitation, the offeror shall complete and submit, with its offer, OMB standard form LLL, Disclosure of Lobbying Activities, to the Contracting Officer; and

(3) He or she will include the language of this certification in all subcontracts at any tier and require that all recipients of subcontract awards in excess of $100,000 shall certify and disclose accordingly.

(c) Submission of this certification and disclosure is a prerequisite for making or entering into this contract imposed by section 1352, title 31, United States Code. Any person who makes an expenditure prohibited under this provision or who fails to file or amend the disclosure form to be filed or amended by this provision, shall be subject to a civil penalty of not less than $10,000, and not more than $100,000, for each such failure.

K.3 TAXPAYER IDENTIFICATION (FAR 52.204-3) (OCT 1998)

(a) Definitions.

"Common parent," as used in this provision, means that corporate entity that owns or controls an affiliated group of corporations that files its Federal income tax returns on a consolidated basis, and of which the offeror is a member.

"Taxpayer Identification Number (TIN)," as used in this provision, means the number required by the Internal Revenue Service (IRS) to be used by the offeror in reporting income tax and other returns. The TIN may be either a Social Security Number or an Employer Identification Number.

(b) All offerors must submit the information required in paragraphs (d) through (f) of this provision to comply with debt collection requirements of 31 U.S.C. 7701(c) and 3325(d), reporting requirements of 26 U.S.C. 6041, 6041A, and 6050M, and implementing regulations issued by the IRS. If the resulting contract is subject to the payment reporting requirements described in Federal Acquisition Regulation (FAR) 4.904, the failure or refusal by the offeror to furnish the information may result in a 31 percent reduction of payments otherwise due under the contract.

(c) The TIN may be used by the Government to collect and report on any delinquent amounts arising out of the offeror's relationship with the Government (31 U.S.C. 7701(c)(3)). If the resulting contract is subject to the payment reporting requirements described in FAR 4.904, the TIN provided hereunder may be matched with IRS records to verify the accuracy of the offeror's TIN.

(d) Taxpayer Identification Number (TIN).

( ) TIN: _____.

( ) TIN has been applied for.

( ) TIN is not required because:

( ) Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the United States and does not have an office or place of business or a fiscal paying agent in the United States;

( ) Offeror is an agency or instrumentality of a foreign government;

( ) Offeror is an agency or instrumentality of the Federal Government.

(e) Type of organization.

( ) Sole proprietorship;

( ) Partnership;

( ) Corporate entity (not tax-exempt);

( ) Corporate entity (tax-exempt);

( ) Government entity (Federal, State, or local);

( ) Foreign government;

( ) International organization per 26 CFR 1.6049-4;

( ) Other _____.

(f) Common parent.

( ) Offeror is not owned or controlled by a common parent as defined in Paragraph (a) of this provision.

( ) Name and TIN of common parent:

Name _____

TIN _____

K.4 WOMEN-OWNED BUSINESS (FAR 52.204-5) (OCT 1995)

(a) *Representation.* The offeror represents that it [ ] is, [ ] is not a women-owned business concern.

(b) *Definition.* "Women-owned business concern," as used in this provision, means a concern which is at least 51 percent owned by one or more women; or in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and whose management and daily business operations are controlled by one or more women.

K.5 CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS (FAR 52.209-5) (MAR 1996)

(a)(1) The Offeror certifies, to the best of its knowledge and belief, that -

(i) The Offeror and/or any of its Principals -

(A) Are ( ) are not ( ) presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;

(B) Have ( ) have not ( ), within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or

commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

(C) Are ( ) are not ( ) presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in subdivision (a)(1)(i)(B) of this provision.

(ii) The Offeror has ( ) has not ( ), within a three-year period preceding this offer, had one or more contracts terminated for default by any Federal agency.

(2) "Principals," for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

THIS CERTIFICATION CONCERNS A MATTER WITHIN THE JURISDICTION OF AN AGENCY OF THE UNITED STATES AND THE MAKING OF A FALSE, FICTITIOUS, OR FRAUDULENT CERTIFICATION MAY RENDER THE MAKER SUBJECT TO PROSECUTION UNDER SECTION 1001, TITLE 18, UNITED STATES CODE.

(b) The Offeror shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

(c) A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Offeror's responsibility. Failure of the Offeror to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Offeror nonresponsible.

(d) Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of an Offeror is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

(e) The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Offeror knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

K.6 TYPE OF BUSINESS ORGANIZATION (FAR 52.215-4) (OCT 1997)

The offeror or respondent, by checking the applicable box, represents that--

(a) It operates as ☐ an individual, ☐ a partnership, ☐ a nonprofit organization, ☐ a joint venture, or ☐ a corporation incorporated under the laws of the State of _____.

(b) If the offeror or respondent is a foreign entity, it operates as ☐ an individual, ☐ a partnership, ☐ a nonprofit organization, ☐ a joint venture, or ☐ a corporation, registered for business in _____*(country)*.

K.7 SMALL BUSINESS PROGRAM REPRESENTATIONS (FAR 52.219-1 (OCT 1998)-- ALTERNATE I (OCT 1998) AND ALTERNATE II (JAN 1999)

(a) (1) The standard industrial classification (SIC) code for this acquisition is 8744.

(2) The small business size standard is $20,000,000.

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

(b) Representations. (1) The offeror represents as part of its offer that it ☐ is, ☐is not a small business concern.

(2) (Complete only if offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents, for general statistical purposes, that it ☐ is, ☐ is not, a small disadvantaged business concern as defined in 13 CFR 124.1002.

(3) (Complete only if offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents as part of its offer that it ☐ is, ☐ is not a women-owned small business concern.

(4) (Complete if offeror represented itself as disadvantaged in paragraph (b)(2) of this provision). [The offeror shall check the category in which its ownership falls]:

☐ Black American.

☐ Hispanic American.

☐ Native American (American Indians, Eskimos, Aleuts, or Native Hawaiians).

☐ Asian-Pacific American (persons with origins from Burma, Thailand, Malaysia, Indonesia, Singapore, Brunei, Japan, China, Taiwan, Laos, Cambodia (Kampuchea), Vietnam, Korea, The Philippines, U.S. Trust Territory of the Pacific Islands (Republic of Palau), Republic of the Marshall Islands, Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam, Samoa, Macao, Hong Kong, Fiji, Tonga, Kiribati, Tuvalu, or Nauru).

☐ Subcontinent Asian (Asian-Indian) American (persons with origins from India, Pakistan, Bangladesh, Sri Lanka, Bhutan, the Maldives Islands, or Nepal).

☐ Individual/concern, other than one of the preceding.

(5) [Complete only if offeror represented itself as a small business concern in paragraph (b)(1) of this provision.] The offeror represents, as part of its offer, that--

(i) It ☐ is, ☐ is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration, and no material change in ownership and control, principal place of ownership, or HUBZone employee percentage has occurred since it was certified by the Small Business Administration in accordance with 13 CFR part 126; and

(ii) It ☐ is, ☐ is not a joint venture that complies with the requirements of 13 CFR part 126, and the representation in paragraph (b)(5)(i) of this provision is accurate for the HUBZone small business concern or concerns that are participating in the joint venture. [The offeror shall enter the name or names of the HUBZone small business concern or concerns that are participating in the joint venture: _____.] Each HUBZone small business concern participating in the joint venture shall submit a separate signed copy of the HUBZone representation.

(c) Definitions.

"Small business concern," as used in this provision, means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR part 121 and the size standard in paragraph (a) of this provision.

"Woman-owned small business concern," as used in this provision, means a small business concern--

(1) Which is at least 51 percent owned by one or more women or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and

(2) Whose management and daily business operations are controlled by one or more women.

(d) Notice. (1) If this solicitation is for supplies and has been set aside, in whole or in part, for small business concerns, then the clause in this solicitation providing notice of the set-aside contains restrictions on the source of the end items to be furnished.

(2) Under 15 U.S.C. 645(d), any person who misrepresents a firm's status as a small or small disadvantaged business concern in order to obtain a contract to be awarded under the preference programs established pursuant to section 8(a), 8(d), 9, or 15 of the Small Business Act or any other

provision of Federal law that specifically references section 8(d) for a definition of program eligibility, shall--

(i) Be punished by imposition of fine, imprisonment, or both;
(ii) Be subject to administrative remedies, including suspension and debarment; and
(iii) Be ineligible for participation in programs conducted under the authority of the Act.

K.8 SMALL DISADVANTAGED BUSINESS STATUS (FAR 52.219-22) (OCT 1998) ALTERNATE I (OCT 1998)

(a) General. This provision is used to assess an offeror's small disadvantaged business status for the purpose of obtaining a benefit on this solicitation. Status as a small business and status as a small disadvantaged business for general statistical purposes is covered by the provision at FAR 52.219-1, Small Business Program Representation.

(b) Representations. (1) General. The offeror represents, as part of its offer, that it is a small business under the size standard applicable to this acquisition; and either--

☐ (i) It has received certification by the Small Business Administration as a small disadvantaged business concern consistent with 13 CFR 124, Subpart B; and

(A) No material change in disadvantaged ownership and control has occurred since its certification;

(B) Where the concern is owned by one or more disadvantaged individuals, the net worth of each individual upon whom the certification is based does not exceed $750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and

(C) It is listed, on the date of this representation, on the register of small disadvantaged business concerns maintained by the Small Business Administration; or

☐ (ii) It has submitted a completed application to the Small Business Administration or a Private Certifier to be certified as a small disadvantaged business concern in accordance with 13 CFR 124, Subpart B, and a decision on that application is pending, and that no material change in disadvantaged ownership and control has occurred since its application was submitted.

(2) ☐ For Joint Ventures. The offeror represents, as part of its offer, that it is a joint venture that complies with the requirements at 13 CFR 124.1002(f) and that the representation in Paragraph (b)(1) of this provision is accurate for the small disadvantaged business concern that is participating in the joint venture. [The offeror shall enter the name of the small disadvantaged business concern that is participating in the joint venture: _____.]

(3) Address. The offeror represents that its address ☐ is, ☐ is not in a region for which a small disadvantaged business procurement mechanism is authorized and its address has not changed since its certification as a small disadvantaged business concern or submission of its application for certification. The list of authorized small disadvantaged business procurement mechanisms and regions is posted at http://www.arnet.gov/References/ sdbadjustments.htm. The offeror shall use the list in effect on the date of this solicitation. "Address," as used in this provision, means the address of the offeror as listed on the Small Business Administration's register of small disadvantaged business concerns or the address on the completed application that the concern has submitted to the Small Business Administration or a Private Certifier in accordance with 13 CFR part 124, subpart B. For joint ventures, "address" refers to the address of the small disadvantaged business concern that is participating in the joint venture.

(c) Penalties and Remedies. Anyone who misrepresents any aspects of the disadvantaged status of a concern for the purposes of securing a contract or subcontract shall--

(1) Be punished by imposition of a fine, imprisonment, or both;
(2) Be subject to administrative remedies, including suspension and debarment; and
(3) Be ineligible for participation in programs conducted under the authority of the Small Business Act.

K.9 PROHIBITION OF SEGREGATED FACILITIES (FAR 52.222-21) (FEB 1999)

(a) "Segregated facilities," as used in this clause, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or

dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees, that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex, or national origin because of written or oral policies or employee custom. The term does not include separate or single-user rest rooms or necessary dressing or sleeping areas provided to assure privacy between the sexes.
(b) The Contractor agrees that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The Contractor agrees that a breach of this clause is a violation of the Equal Opportunity clause in this contract.
(c) The Contractor shall include this clause in every subcontract and purchase order that is subject to the Equal Opportunity clause of this contract.

K.10 PREVIOUS CONTRACTS AND COMPLIANCE REPORTS (FAR 52.222-22) (FEB 1999)

The offeror represents that--

(a) It ☐ has, ☐ has not participated in a previous contract or subcontract subject the Equal Opportunity clause of this solicitation;

(b) It ☐ has, ☐ has not filed all required compliance reports; and

(c) Representations indicating submission of required compliance reports, signed by proposed subcontractors, will be obtained before subcontract awards.

K.11 AFFIRMATIVE ACTION COMPLIANCE (FAR 52.222-25) (APR 1984)

The offeror represents that (a) it ( ) has developed and has on file, ( ) has not developed and does not have on file, at each establishment, affirmative action programs required by the rules and regulations of the Secretary of Labor (41 CFR 60-1 and 60-2), or (b) it ( ) has not previously had contracts subject to the written affirmative action programs requirement of the rules and regulations of the Secretary of Labor.

K.12 CLEAN AIR AND WATER CERTIFICATION (FAR 52.223-1) (APR 1984)

The offeror certifies that -
(a facility to be used in the performance of this proposed contract ( ) is, ( ) is not, listed on the Environmental Protection Agency List of Violating Facilities;
(b) The offeror will immediately notify the Contracting Officer, before award, of the receipt of any communication from the Administrator, or a designee, of the Environmental Protection Agency, indicating that any facility that the offeror proposes to use for the performance of the contract is under consideration to be listed on the EPA List of Violating Facilities; and
(c) The offeror will include a certification substantially the same as this certification, including this paragraph (c), in every nonexempt subcontract.

K.13 CERTIFICATION OF TOXIC CHEMICAL RELEASE REPORTING (FAR 52.223-13) (OCT 1996)

(a) Submission of this certification is a prerequisite for making or entering into this contract imposed by Executive Order 12969, August 8, 1995.

(b) By signing this offer, the offeror certifies that—

(1) As the owner or operator of facilities that will be used in the performance of this contract that are subject to the filing and reporting requirements described in sectin313 of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023) and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106), the offeror will file and continue to file for such facilities

for the life of the contract the Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of EPCRA and section 6607 of PPA; or

(2) None of its owned or operated facilities to be used in the performance of this contract is subject to the Form R filing and reporting requirements because each such facility is exempt for at least one of the following reasons: (Check each block that is applicable.)

☐ (i) The facility does not manufacture, process, or otherwise use any toxic chemicals listed under section 313(c) of EPCRA, 42 U.S.C. 11023(c);

☐ (ii) The facility does not have 10 or more full-time employees as specified in section 313(b)(1)(A) of EPCRA, 42 U.S.C. 11023(b)(1)(A);

☐ (iii) The facility does not meet the reporting thresholds of toxic chemicals established under section 313(f) of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);

☐ (iv) The facility does not fall within Standard Industrial Classification Code (SIC) designations 20 through 39 as set forth in section 19.102 of the Federal Acquisition Regulation; or

☐ (v) The facility is not located within any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Northern Mariana Islands, or any other territory or possession over which the United States has jurisdiction.

K.14 BUY AMERICAN CERTIFICATE (FAR 52.225-1) (DEC 1989)

The offeror certifies that each end product, except those listed below, is a domestic end product (as defined in the clause entitled "Buy American Act - Supplies"), and that components of unknown origin are considered to have been mined, produced, or manufactured outside the United States.

Excluded End Products	Country of Origin

(List as necessary)

Offerors may obtain from the Contracting Officer lists of articles, materials, and supplies excepted from the Buy American Act.

K.15 COST ACCOUNTING STANDARDS NOTICES AND CERTIFICATION (FAR 52.230-1) (APR 1998)

NOTE: This notice does not apply to small businesses or foreign governments. This notice is in three parts, identified by Roman numerals I through III.

Offerors shall examine each part and provide the requested information in order to determine Cost Accounting Standards (CAS) requirements applicable to any resultant contract.

If the offeror is an educational institution, Part II does not apply unless the contemplated contract will be subject to full or modified CAS coverage pursuant to 48 CFR 9903.201-2(c)(5) or 9903.201-2(c)(6), respectively.

I. DISCLOSURE STATEMENT–COST ACCOUNTING PRACTICES AND CERTIFICATION

(a) Any contract in excess of $500,000 resulting from this solicitation will be subject to the requirements of the Cost Accounting Standards Board (48 CFR Chapter 99), except for those contracts which are exempt as specified in 48 CFR 9903.201-1.

(b) Any offeror submitting a proposal which, if accepted, will result in a contract subject to the requirements of 48 CFR Chapter 99 must, as a condition of contracting, submit a Disclosure Statement as required by 48 CFR 9903.202. When required, the Disclosure Statement must be submitted as a part of the offeror's proposal under this solicitation unless the offeror has already submitted a Disclosure Statement disclosing the practices used in connection with the pricing of this proposal. If an applicable Disclosure Statement has already been submitted, the offeror may satisfy the requirement for submission by providing the information requested in paragraph (c) of Part I of this provision.

CAUTION: In the absence of specific regulations or agreement, a practice disclosed in a Disclosure Statement shall not, by virtue of such disclosure, be deemed to be a proper, approved, or agreed-to practice for pricing proposals or accumulating and reporting contract performance cost data.

(c) Check the appropriate box below:

_____ (1) Certificate of Concurrent Submission of Disclosure Statement.

The offeror hereby certifies that, as a part of the offer, copies of the Disclosure Statement have been submitted as follows: (i) original and one copy to the cognizant Administrative Contracting Officer (ACO) or cognizant Federal agency official authorized to act in that capacity (Federal official), as applicable, and (ii) one copy to the cognizant Federal auditor.

(Disclosure must be on Form No. CASB DS-1 or CASB DS-2, as applicable. Forms may be obtained from the cognizant ACO or Federal official and/or from the loose-leaf version of the Federal Acquisition Regulation.)

Date of Disclosure Statement:_____

_____

Name and Address of Cognizant ACO or Federal Official Where Filed:

_____

_____

_____

The offeror further certifies that the practices used in estimating costs in pricing this proposal are consistent with the cost accounting practices disclosed in the Disclosure Statement.

_____ (2) Certificate of Previously Submitted Disclosure Statement.

The offeror hereby certifies that the required Disclosure Statement was filed as follows:

Date of Disclosure Statement:_____

_____

Name and Address of Cognizant ACO or Federal Official Where Filed:

_____

_____

_____

The offeror further certifies that the practices used in estimating costs in pricing this proposal are consistent with the cost accounting practices disclosed in the applicable Disclosure Statement.

_____ (3) Certificate of Monetary Exemption.

The offeror hereby certifies that the offeror, together with all divisions, subsidiaries, and affiliates under common control, did not receive net awards of negotiated prime contracts and subcontracts subject to CAS totaling more than $25 million (of which at least one award exceeded $1 million) in the cost accounting period immediately preceding the period in which this proposal was submitted. The offeror further certifies that if such status changes before an award resulting from this proposal, the offeror will advise the Contracting Officer immediately.

_____ (4) Certificate of Interim Exemption.

The offeror hereby certifies that (i) the offeror first exceeded the monetary exemption for disclosure, as defined in (3) of this subsection, in the cost accounting period immediately preceding the period in which this offer was submitted and (ii) in accordance with 48 CFR 9903.202-1, the offeror is not yet required to submit a Disclosure Statement. The offeror further certifies that if an award resulting from this proposal has not been made within 90 days after the end of that period, the offeror will immediately submit a revised certificate to the Contracting Officer, in the form specified under subparagraph (c)(1) or (c)(2) of Part I of this provision, as appropriate, to verify submission of a completed Disclosure Statement.

CAUTION: Offerors currently required to disclose because they were awarded a CAS-covered prime contract or subcontract of $25 million or more in the current cost accounting period may not claim this exemption (4). Further, the exemption applies only in connection with proposals submitted before expiration of the 90-day period following the cost accounting period in which the monetary exemption was exceeded.

II. COST ACCOUNTING STANDARDS--ELIGIBILITY FOR MODIFIED CONTRACT COVERAGE

If the offeror is eligible to use the modified provisions of 48 CFR 9903.201-2(b) and elects to do so, the offeror shall indicate by checking the box below. Checking the box below shall mean that the resultant contract is subject to the Disclosure and Consistency of Cost Accounting Practices clause in lieu of the Cost Accounting Standards clause.

_____The offeror hereby claims an exemption from the Cost Accounting Standards clause under the provisions of 48 CFR 9903.201-2(b) and certifies that the offeror is eligible for use of the Disclosure and Consistency of Cost Accounting Practices clause because during the cost accounting period immediately preceding the period in which this proposal was submitted, the offeror received less than $25 million in awards of CAS-covered prime contracts and subcontracts, or the offeror did not receive a single CAS-covered award exceeding $1 million. The offeror further certifies that if such status changes before an award resulting from this proposal, the offeror will advise the Contracting Officer immediately.

CAUTION: An offeror may not claim the above eligibility for modified contract coverage if this proposal is expected to result in the award of a CAS-covered contract of $25 million or more or if, during its current cost accounting period, the offeror has been awarded a single CAS-covered prime contract or subcontract of $25 million or more.

III. ADDITIONAL COST ACCOUNTING STANDARDS APPLICABLE TO EXISTING CONTRACTS

The offeror shall indicate below whether award of the contemplated contract would, in accordance with subparagraph (a)(3) of the Cost Accounting Standards clause, require a change in established cost accounting practices affecting existing contracts and subcontracts.

_____ YES _____ NO

K.16 USE OF GOVERNMENT-OWNED PROPERTY (NASA 1852.245-79) (JUL 1997)

(a) The offeror ( ) does, ( ) does not intend to use in performance of any contract awarded as a result of this solicitation existing Government-owned facilities (real property or plant equipment), special test equipment, or special tooling (including any property offered by this solicitation). The offeror shall identify any offered property not intended to be used. If the offeror does intend to use any of the above items, the offeror must furnish the following information required by Federal Acquisition Regulation (FAR) 45.205(b), and NASA FAR Supplement (NFS) 1845.102-71:

(1) Identification and quantity of each item. Include the item's acquisition cost if it is not property offered by this solicitation.

(2) For property not offered by this solicitation, identification of the Government contract under which the property is accountable and written permission for its use from the cognizant Contracting Officer.

(3) Amount of rent calculated in accordance with FAR 45.403 and the clause at FAR 52.245-9, Use and Charges, unless the property has been offered on a rent-free basis by this solicitation.

(4) The dates during which the property will be available for use, and if it is to be used in more than one contract, the amounts of respective uses in sufficient detail to support proration of the rent. This information is not required for property offered by this solicitation.

(b) The offeror ( ) does, ( ) does not request additional Government provided property for use in performing any contract awarded as a result of this solicitation. If the offeror requests additional Government-provided property, the offeror must furnish --

(1) Identification of the property, quantity, and estimated acquisition cost of each item; and

(2) The offeror's written statement of its inability to obtain facilities as prescribed by FAR 45.302-1(a)(4).

(c) If the offeror intends to use any Government property (paragraph (a) or (b) of this provision), the offer must also furnish the following:

(1) The date of the last Government review of the offeror's property control and accounting system, actions taken to correct any deficiencies found, and the name and telephone number of the cognizant property administrator.

(2) A statement that the offeror has reviewed, understands, and can comply with all property management and accounting procedures in the solicitation, FAR Subpart 45.5, and NFS Subparts 1845.5 and 1845.71.

(3) A statement indicating whether or not the costs associated with paragraph (2) of this provision, including plant clearance and/or plant reconversion costs, are included in its cost proposal.

K.17 MANDATORY INFORMATION FOR ELECTRONIC FUNDS TRANSFER (LaRC 52.232-105) (MAR 1998)

You are required to furnish the following financial institution information. This information will be used by the Treasury Department to transmit payment data, by electronic means to vendor's financial institution. Failure to provide the requested information may delay or prevent the receipt of payments through the Automated Clearing House Payment System.

FINANCIAL INSTITUTION INFORMATION			
NAME OF FINANCIAL INSTITUTION:			
ADDRESS:			
CITY:	STATE:	ZIP CODE:	
ACH COORDINATOR NAME:		TELEPHONE NUMBER: ( )	
NINE-DIGIT ROUTING TRANSIT NUMBER: ___ ___ ___ ___ ___ ___ ___ ___ ___			
DEPOSITOR ACCOUNT TITLE:		DEPOSITOR TIN #:	
DEPOSITOR ACCOUNT NUMBER:		LOCKBOX NUMBER:	
TYPE OF ACCOUNT:	☐ CHECKING	☐ SAVINGS	☐ LOCKBOX
SIGNATURE AND TITLE OF AUTHORIZED OFFICIAL: (Could be the same as ACH Coordinator)		TELEPHONE NUMBER: ( )	

SECTION L - INSTRUCTIONS, CONDITIONS, AND NOTICES TO OFFERORS

L.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE

NOTICE: The following solicitation provisions and/or contract clauses pertinent to this section are hereby incorporated by reference.

FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1) CLAUSES

CLAUSE NUMBER	TITLE AND DATE
52.204-6	Data Universal Numbering System (DUNS) Number (APR 1998)
52.211-14	Notice of Priority Rating For National Defense Use (SEP 1990) "(X) DO rated"
52.215-1	Instructions to Offerors—Competitive Acquisition (OCT 1997)
52.215-16	Facilities Capital Cost of Money (OCT 1997)
52.222-24	Preaward On-Site Equal Opportunity Compliance Review (APR 1984)
52.252-1	Solicitation Provisions Incorporated By Reference (FEB 1998) "http://www.arnet.gov/far/ http://www.hq.nasa.gov/office/procurement/regs/nfstoc.htm"
52.252-5	Authorized Deviations In Provisions (APR 1984)

L.2 TYPE OF CONTRACT (FAR 52.216-1) (APR 1984)

The Government contemplates award of a firm-fixed-price, fixed price indefinite-delivery-indefinite-quantity, and fixed price time and material indefinite quantity service contract resulting from this solicitation.

L.3 SERVICE OF PROTEST (FAR 52.233-2) (AUG 1996)

(a) Protests, as defined in Section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accounting Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from NASA LaRC. ATTN: Head, Procurement Support Branch A, Mail Stop 126, Hampton, VA 23681-2199.

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

L.4 PROTESTS TO NASA (NFS1852.233-70) (MAR 1997)

Potential bidders or offerors may submit a protest under 48 CFR Part 33 (FAR Part 33) directly to the Contracting Officer. As an alternative to the Contracting Officer's consideration of a protest, a potential bidder or offeror may submit the protest to the Deputy Associate Administrator for Procurement, who will serve as or designate the official responsible for conducting an independent review. Protests requesting an independent review shall be addressed to Deputy Associate Administrator for Procurement, NASA Code H, Washington, DC 20546-0001.

L.5 PRESOLICTATION CONFERENCE

A presolicitation conference was held as indicated below:

Date: November 16-17, 1998
Time: 8:30 a.m.
Location: NASA Langley Research Center – Pearl Young Theater (Building 1202)

The conference consisted of a LaRC presentation, facilities tour, and viewing IAGP. View graphs, response to questions received at the conference, and attendee list are contained in Amendment 1 to the Draft RFP.

L.6 COMMUNICATIONS REGARDING THIS SOLICITATION (LaRC 52.204-95) (OCT 1993)

Any communications in reference to this solicitation shall cite the solicitation number and be directed to the following Government representative:

Name:	Tracy M. Spruill
Phone:	(757) 864-2538 (COLLECT CALLS NOT ACCEPTED)
Facsimile:	757-864-8467
Address:	National Aeronautics and Space Administration Langley Research Center Attn: Tracy M. Spruill, Mail Code 126 Hampton, VA 23681-2199
E-mail:	t.m.spruill@larc.nasa.gov

Any written communications must include the mail code on the envelope or on the telex.

L.7 FACSIMILE TRANSMISSION–BIDS OR PROPOSALS (LaRC 52.204-100) (APR 1996)

(a) Definition. "Facsimile transmission," as used in this solicitation, means a submittal, via electronic equipment that communicates and reproduces both printed and handwritten material, for a modification of a bid or proposal or withdrawal of a bid or proposal that is submitted to and received by the Government, or an acknowledgment of amendment(s) to the solicitation.

(b) OFFERORS MAY NOT SUBMIT FACSIMILE BIDS OR PROPOSALS AS RESPONSES TO THIS SOLICITATION. Facsimile bids or proposals will not be considered.

L.8 REQUIREMENTS FOR COST OR PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA (FAR 52.215-20) (OCT 1997)–ALTERNATE IV (OCT 1997)

(a) Submission of cost or pricing data is not required.

(b) Provide information described below: The Contractor shall provide cost and pricing information as prescribed in Section L.13, III, Business Proposal (Volume II) Instructions, Paragraph A.

L.9 SMALL DISADVANTAGED BUSINESS PARTICIPATION PROGRAM – TARGETS (FAR 52.219-24) (JAN 1999)

(a) This solicitation contains a source selection factor or subfactor related to the participation of small disadvantaged business (SDB) concerns in the contract. Credit under that evaluation factor or subfactor is not available to an SDB concern that qualifies for a price evaluation adjustment under the clause at FAR 52.219-23, Notice of Price Evaluation Adjustment for Small Disadvantaged Business Concerns, unless the SDB concern specifically waives the price evaluation adjustment.

(b) In order to receive credit under the source selection factor or subfactor, the offeror must provide, with its offer, targets, expressed as dollars and percentages of total contract value, for SDB participation in any of the Standard Industrial Classification (SIC) Major Groups as determined by the Department of Commerce. The targets may provide for participation by a prime contractor, joint venture partner, teaming arrangement member, or subcontractor; however, the targets for subcontractors must be listed separately.

L.10 RESERVED

L.11 SMALL DISADVANTAGED BUSINESS (SDB) PARTICIPATION TARGET AND SMALL BUSINESS SUBCONTRACTING GOAL

It is the policy of the United States Government to provide maximum practicable opportunity to participate in performing its contracts to small business, HUBZone Small Business, small disadvantaged business, and women-owned small business concerns. Such concerns shall also have the maximum practicable opportunity to participate as subcontractors in Government contracts, consistent with efficient contract performance. Additionally, NASA has a statutory goal to make available to SDB concerns, Historically Black Colleges and Universities, minority institutions, and women-owned small business concerns at least 8 percent of NASA's procurement dollars (See Section I clause 1852.219-76). The Government has also established mechanisms to benefit at the prime and subcontract level the participation of SDB concerns in the Standard Industrial Classification (SIC) Major Groups as determined by the Department of Commerce.

In keeping with these Government and Agency policy goals, the source evaluation factors in Section M of this solicitation include consideration of the planned participation of small and SDB concerns.

Section I clause 52.219-9 of this solicitation requires each large business offeror to submit with its proposal a Small, HUBZone Small Business, Small Disadvantaged and Women-Owned Small Business Subcontracting Plan. (The Subcontracting Plan is not required to be submitted by small business offerors). The Government has determined that a reasonable goal for this procurement for subcontracting to small business concerns overall is 25% of the contract price inclusive of an SDB goal of 16% of the contract price. The Subcontracting Plan will be evaluated under Mission Suitability Subfactor 1 (See L.13.II.A.1 and M.3.A.1).

The Government will separately evaluate the participation, at the prime and subcontract level, of SDB concerns in the SIC Major Groups as determined by the Department of Commerce. In accordance with FAR 19.1202, this solicitation contains an applicable source selection subfactor (See L.13.II.A.3 and M.3.A.3).

The offeror shall make an independent assessment of SDB participation and small business subcontracting opportunities to attain or exceed the subcontracting goals indicated above, and to achieve the maximum practicable SDB participation target for this procurement.

In accordance with FAR Subpart 19.11 and 19.13, the solicitation also includes a Price Evaluation Adjustment for SDB concerns and a Price Evaluation preference for HUBZone Small Business Concerns. (See Section I clauses 52.219-4 and 52.219-23)

After award, the contractor's record in achieving the contract specified SDB participation target in the SIC Major Groups as well as the Small Business Subcontracting goal will be a factor in determining the amount of award fee to be earned by the contractor. (See Attachment 3, Performance Evaluation Plan).

L.12 TECHNICAL REFERENCES

The following internet addresses are provided for documents referenced in this solicitation:

http://nodis.hq.nasa.gov/Nodis1.1/Welcome.html
http://nodis.hq.nasa.gov/Library/Directives/NASA-WIDE/contents.html
http://www.hq.nasa.gov/fmm/
http://ldms.larc.nasa.gov/procedures.html

L.13 PROPOSAL PREPARATION AND SUBMISSION–SPECIAL INSTRUCTIONS

I. GENERAL INFORMATION

A. Number of Proposals, Time and Place of Submission--The offeror shall submit the original and 8 copies of each volume of his proposal to the address shown in Block 8 of the Standard Form (SF) 33 (face page of this solicitation), or if hand carried, to the depository listed in Block 9 of the SF 33. Offers must be received at the place, time, and date indicated in Block 9 of the SF 33.

B. Proposal Clarity--Your proposal should be specific, complete, and concise. The offeror is urged to examine this solicitation in its entirety and to assure that the proposal contains all the necessary information, provides all required documentation and is complete in all respects since evaluation of the proposal will be based on the actual material presented and not on the basis of what is implied. You should ensure that your cost proposal is consistent with your technical proposal in all respects since the cost proposal may be used as an aid in determining the offeror's understanding of the technical requirements and to determine if the cost elements are consistent with the unique methods of performance and materials described in the offeror's technical proposal. Discrepancies may be viewed as a lack of understanding.

C. Proposal Format and Content

1. Proposals must be submitted in the following three (3) volumes and the following page limitations are established for each volume submitted in response to this solicitation.

Volume	Page Limit
Volume I, Technical Proposal	85
Volume II, Business Proposal	N/A
Volume III, Relevant Experience and Past Performance Proposal	20

2. A page is defined as one side of a sheet, 8 1/2" x 11", with at least one inch margins on all sides, using not smaller than 12 point type. Foldouts count as an equivalent number of 8 1/2" x 11" pages. The metric standard format most closely approximating the described standard 8 1/2" x 11" size may also be used. Graphics may be done in at least 8-point type.

3. Title pages and tables of contents are excluded from the page counts specified in paragraph 1. above. The Business Proposal (Volume II) is not page limited but should be page numbered. However, the Business Proposal is to be strictly limited to responses to Factor 2, and the executed Section K, Representations, Certifications, and Other Statements of Offerors. In addition, the REPP (Volume III) is to be strictly limited to information required by FACTOR 3, REPP. (The Form REPP (Attachment 1) and the written consent letters required by L.13.IV.A.2 will not be included in the Volume III page limitation.) Information that can be construed as belonging in one of the other sections of the proposal will be so construed and counted against that section's page limitation.

4. If final proposal revisions are requested, separate page limitations will be specified in the Government's request for that submission.

5. Pages submitted in excess of the limitations specified in this provision will not be evaluated by the Government and will be returned to the offeror.

6. Each volume should include the detailed information outlined below in order that it can be evaluated in accordance with the evaluation factors set forth in Section M, M.3. You should structure each volume to adhere to the Subfactor headings identified below:

II. TECHNICAL PROPOSAL - VOLUME I

A. FACTOR 1 - Mission Suitability Preparation Instructions

1. Subfactor 1 – Management/Staffing

a. Your proposal must detail your phase-in plan which addresses phase-in staff, schedule and approach to completion of each phase-in activity. Your proposal must also address your initial staffing plan to include sources of personnel, recruiting methods, plans for training (including initial orientation), and policies and procedures which contribute to employee recruiting, retention, and productivity. Provide your approach for securing all required materials, tools and equipment required for contract performance.

b. Provide your staffing levels and skill mix for the firm fixed price portion of the contract.

c. Your proposal must include a planned organizational structure for efficiently managing the work. The offeror must also address the authority and responsibilities vested in the contract management personnel and their access to company resources. Further, you must address your proposed interface with the Government and subcontractors, if any.

d. Provide details of your planned subcontracts, teaming arrangements or other associated contractual arrangements. Any work functions that the offeror expects to obtain through subcontracting and/or consulting agreements should be described and explained. If teaming or subcontracting arrangements are proposed, provide the name of the company(ies) selected, the basis for the selection(s), and the type of proposed subcontract(s). Address the management, control and integration of your planned subcontracted effort(s) with the prime effort.

e. Each large business offeror shall submit its Small, HUBZone Small Business Concerns, Small Disadvantaged and Women-Owned Small Business Subcontracting Plan for ensuring the maximum practicable participation of Small Business concerns in the performance of this contract, as required by Section I clauses FAR 52.219-8 and 52.219-9. This plan shall comply with the Section I clause 52.219-9 and shall include separate goals for the basic contract and for each option period. The plan should include identification of specific small businesses which will perform work on the contract, if known; the extent of commitment to use small business concerns; and the types and amount of work to be performed by small businesses. The Government has determined that a goal of 25 percent of the contract price is a reasonable goal for subcontracting with small businesses for this procurement. (Note that while the Plan required by FAR 52.219-9 requires goals to be expressed as a percentage of total planned subcontracting dollars, the Government will evaluate the proposed goal as a percentage of the proposed contract price.) For the purpose of preparing the Subcontract Plan, assume a contract price equal to the total contract price computed on the Bid Schedules (Attachment 2 to this RFP).

2. Subfactor 2 – Understanding the Requirements

a. This part of your proposal will be used to evaluate your understanding of the Statement of Work requirements and your approach for meeting those requirements. You must address the following:

Your approach for organizing, assigning, estimating, tracking, performing, controlling, and documenting recurring work, trouble calls, and IDIQ work.

Your approach to recognize, report, and resolve technical and schedule problems.

Your approach to maintaining continuity of support (deployment of personnel and other resources) to simultaneously perform recurring work, trouble calls, and IDIQ work.

Your approach to responding to major changes in workload, such as a sudden influx of IDIQ repair work, or the rescheduling of one or more major facility shutdowns.

To further convey your understanding, pose typical problems associated with the work of this contract, and your proposed approaches to minimize the performance risks in those areas. Also, provide supporting rationale for any proposed innovations that will be applied to the work.

b. NASA LaRC is in the process of developing and implementing, in phases, a new Computerized Maintenance Management System (CMMS). The first phase of the CMMS, projected for implementation in the spring of 1999, will include the equipment inventory, preventive maintenance program, and the Trouble Call and Work/Service Request tracking system. Address your understanding of CMMS for managing jobs of the size and complexity of this procurement. Address your approach for utilizing the Government-furnished CMMS to optimize the planning of your maintenance activities and to achieve efficiencies in scheduling, managing and accomplishing work. Address your approach to partnering with NASA in recommending enhancement of the CMMS.

c. Describe your approach for scheduling and arranging all work so as to cause the least interference with the mission and normal operations of NASA LaRC. Describe your approach to reducing and minimizing facility downtime for maintenance and repair activities.

d. Address your understanding of the Reliability Centered Maintenance (RCM) philosophy and include your approach to implementing a RCM strategy at LaRC.

e. Include your approach for ensuring that all contractor operations will be performed in compliance with NASA LaRC and the Contractor's safety program requirements. Also address your approach to achieving quality control of all work performed throughout the duration of the contract.

3. Subfactor 3 - Small Disadvantaged Business (SDB) Participation in the SIC Major Groups as Determined by the Department of Commerce.

The offeror shall submit its plan for insuring the maximum practicable participation of SDB firms in the SIC Major Groups as determined by the Department of Commerce (the authorized Groups) in the performance of this contract. The offeror shall provide targets for the basic contract period and for each option period. These targets shall be expressed as dollars and percentages of total contract value, in each of the authorized Groups. A total target for SDB participation by the Contractor, including joint venture partners and team members, and a total target for SDB participation by subcontractor shall be specified. If the offeror is an SDB that has waived the SDB price evaluation adjustment at 52.219-23, it shall provide with its offer a target for the work that it intends to perform as the prime Contractor. Any targets will be incorporated into and become part of any resulting contract (See H.17)

The offeror shall describe its approach and methods for insuring SDB participation. The proposal shall include identification of specific SDB's that will perform work on the contract, if known; the extent of commitment to use SDB concerns; and the types and amount of work to be performed by SDB's. In addition, the offeror shall identify and discuss its past performance in complying with subcontracting plan goals for SDB concerns and monetary targets and/or contract specified goals for SDB Participation. (This past performance information should be included for those contracts listed for the offeror for Factor 3, Relevant Experience and Past Performance). For the purposes of responding to this subfactor, assume a contract price equal to the total contract price computed on the Bid Schedules (Attachment 2 to the RFP).

III. BUSINESS PROPOSAL - VOLUME II

A. FACTOR 2 – Price Preparation Instructions

Under requirements of the Federal Acquisition Regulation (FAR), the Contracting Officer is responsible for determining reasonableness of prices. It is expected that adequate price competition will be obtained under this solicitation and that a determination of price reasonableness will be made in accordance with FAR 15.403-3. However, to establish cost realism and the extent to which prices reflect performance addressed in the Technical Proposal, each offeror is required to submit cost or pricing information with its proposal pursuant to FAR 52.215-20, Alternate IV. Offerors are cautioned to not submit unbalanced pricing (Ref. FAR 15.404-1(g)).

1. The offeror shall provide as a minimum the information set forth in FAR 15.408,Table 15-2, I. General Instructions A., E., G. and II. Cost Elements. Include in your price proposal sufficient detail to support and explain all costs proposed, giving figures and narrative explanation. Since an award may be made without further discussion, this information must be submitted with your proposal.

2. The price proposal should be prepared in a manner consistent with your current accounting system and Cost Accounting Standards Disclosure Statement, if applicable.

3. Each subcontract expected to exceed a total of $500,000 shall also be supported in a similar manner consistent with paragraphs 1. and 2. above. Prospective subcontractors may submit proprietary cost information directly to the Government no later than the date and time specified in the instructions for receipt of offers for this RFP.

4. Computerized Price Proposal Input Instructions

a. The Government intends to use personal computers with Windows 95 and LOTUS 1-2-3 software to aid in the evaluation of the price proposal. Offerors and subcontractors providing direct labor are requested to submit price information on floppy diskettes, two copies, 3-1/2 inch, formatted under MS DOS or Windows 95. Computerized price information must be the identical information and format as that submitted in the paper proposal. In the event of any inconsistency between the diskettes and the paper proposal, the paper proposal will be considered the intended version. Any questions related to the computerized price proposal shall be directed to Jeanne Covington at (757) 864-2545.

b. Each diskette submitted must have an external label to each indicating the company name and the RFP number. Provide all information under one file with no external links.

ALL DISKETTE SUBMISSIONS SHALL BE TRUE SELF-CALCULATING SPREADSHEETS. Any "absolute values" must be explained and supported.

5. Bid Schedules - The Bid Schedules in Attachment 2 shall be completed. All supporting cost and pricing information should be submitted by contract year in a format consistent among the years and shall clearly show how the "Unit Price" and "Total Price" were derived. You are reminded that proposed prices shall not include any contingency to cover increased costs for which an adjustment is provided under Section I clause, FAR 52.222-43. As it is intended for a contract to be awarded without discussion, your proposal should have the Unit Price data in the Bid Schedules inserted in the Price Schedules in Section B.5. If discussions are required, the completion of the Section B.5, Price Schedules, will be based on Bid Schedule data as adjusted by discussions. As a minimum, support each Bid Schedule Item No. (BSIN) with the details discussed below for that BSIN.

a. Phase-In (BSIN X00) - The Phase-In period will begin at contract award, approximately July 1, 1999, and will end at the contract effective date of September 1, 1999. Phase-In Costs, if proposed, should be fully detailed and supported and should correlate with Statement

of Work (SOW) requirements and your technical proposal. During phase-in, the Government will provide office space, office furniture, utilities (including Government telephones for official purposes only), for approximately six people. The services listed in Section G.2.(e)-(h) will also be provided.

b. Firm Fixed Price Work (BSIN X01) - The firm fixed-price work is all the effort and costs necessary to provide the services set forth in the SOW, except that work to be performed under IQ WSRs. Structure your proposal to show the proposed labor/trade categories (use those applicable categories from the BSIN X03), applicable direct labor (DL) straight time and overtime hours, labor rates, shift differential, and the associated fringe benefits adjustable under FAR 52.222-43, and other fringe benefits. These should be segregated into the applicable SOW Sections C.8, Management, C.11, Trouble Calls (TC), and C.12, Recurring Work (RW). C.8 is considered the applicable SOW section for proposing all management effort for the firm fixed price and the guaranteed portion of the IDIQ work in this contract. As an example, a portion of your spreadsheets for C.8, C.11 and C.12 might have the column titles as follows:

LABOR/TRADE CATEGORY	DL HOURS	DL RATES	LABOR COSTS	FRINGE BENEFITS ADJUSTABLE UNDER FAR 52.222-43	OTHER FRINGE BENEFITS

Although your proposal must show the hours and costs by trade category, the resultant contract will not reflect a specified level-of-effort. If you propose to subcontract any of the positions, so indicate. Any composite hourly rates must be explained. All other price elements, overheads/G&A, equipment, travel, license, taxes, insurance, permits, and profit, shall not be detailed by SOW section.

c. Indefinite Quantity Work-Unit Priced Tasks (BSIN X02) – The "Unit Price" inserted for each task is your proposed rate to provide one unit of the specified task. The "Annual Quantity" data specified on the Bid Schedule are estimates to be used only for the proposal purpose of establishing "Total Price," are based on historical requirements, and do not commit the Government. Each "Unit Price" should include **all** direct and indirect costs and profit associated with performing the specified tasks. "Unit Price" and "Total Price" should consider such elements as hours and hourly labor rates for required trades and direct supervision, costs for supervision and indirect support not included in BSIN X01, shift differential, overheads, G&A, material and supplies, equipment, tools, travel, license, taxes, insurance, permits, and profit. If a task is to be subcontracted, in whole or in part, total subcontract price plus prime burden should be included. Your pricing details for each "Unit Price" should list separately each labor rate and its associated fringe benefits adjustable under FAR 52.222-43, other fringe benefits, overhead, ODC, G&A and profit. You must propose on each task.

d. Indefinite Quantity Work-Unit Priced Labor (BSIN X03) - The "Unit Price" inserted for each labor category is your proposed hourly labor rate to provide one performance standard hour of effort. The "Annual Quantity" data specified on the Bid Schedule are estimates to be used only for the proposal purpose of establishing "Total Price," are based on historical requirements, and do not commit the Government. "Unit Price" should consider such elements as hourly labor rates for required trades, costs for management, supervision and indirect support not included in BSIN X01, shift differential, overheads, G&A, pre-expended bin material and supplies, equipment, tools, travel, license, taxes, insurance, permits, and profit. If a labor category is to be subcontracted, in whole or in part, total subcontract price plus prime burden should be included. Your pricing details should list separately each "Unit Price" by labor rate, its associated fringe benefits and shift differential adjustable under FAR 52.222-43, other fringe benefits, overhead, ODC, G&A and profit. To propose overtime in the bid schedule, use a weighted average overtime rate applied to 14,000 hours. (Bid Schedule line X03-13.3) (This composite rate should be developed by using the Price Schedule overtime rates and the Bid Schedule "Annual Quantity" data for corresponding labor categories for weighting.)

e. Material Fixed Burden Rate (BSIN X04) – The material FBR should consider all costs associated with procuring and handling the $1,600,000 of material estimated by the Government to be required annually for IQ work unit price labor under this contract (Ref: Section C.13.d.(2)). The rate derivation should consider your normal material handling rate or costs plus any other associated indirect costs and profit. This rate should be expressed as a percent (or dollar amount) to be applied to your specified application base. The derivation of the rate must be explained in sufficient detail to determine its realism. Your proposed cost should include the estimated material dollars plus the full burden dollars.

f. Equipment Fixed Burden Rate (BSIN X05) - The equipment FBR should consider all costs associated with procuring and handling the $250,000 of equipment estimated by the Government to be required annually for IQ work unit price labor under this contract (Ref: Section C.13.d.(3)). The rate derivation should consider your normal equipment handling rate or costs plus any associated indirect costs and profit. This rate should be expressed as a percent (or dollar amount) to be applied to your specified application base. The derivation of the rate must be explained in sufficient detail to determine its realism. Your proposal cost should include the estimated equipment dollars plus the full burden dollars.

g. Award Fee (BSIN X06) – The award fee specified in Section B.4 and BSIN X06 shall be included in your Total Price. Do not allocate award fee among BSINs X01-X05.

6. Other Price and Cost Detail Instructions - Consider the following when pricing your proposal.

a. A copy of each of the Registers of Wage Determinations (WD) and Fringe Benefits and General Decisions (GD) issued by the Department of Labor for employees under this proposed contract is included in Exhibit D. IT SHOULD BE NOTED THAT THE WAGE RATES SPECIFIED THEREIN ARE MINIMUM RATES. It should also be noted that the wage determination might not list all labor classes to be employed under this contract. Paragraph (a) of the Section I clause entitled "Service Contract Act of 1965" states that in this event, conformable rates must be established for those service employees to be employed under the contract but not listed on the wage determination. These conformable wage rates will be the result of a three-party agreement between the employees, Contractor and the Government. CONFIRM IN YOUR SUBMISSION THAT ALL MINIMUM BENEFITS, INCLUDING HEALTH AND WELFARE, FOR WD and GD EMPLOYEES ARE MET AND PROVIDE CONFIRMING CALCULATIONS. A copy of each of the Collective Bargaining Agreements applicable to this proposed contract is included in Exhibit E.

b. For each indirect pool, identify the rates and bases used to determine the proposed costs.

c. Other Direct Costs - Provide an itemized breakdown and detailed explanation of all ODC costs proposed for this effort.

d. City/County Business License Tax – Propose any applicable business license taxes and enter your estimates. Consult the City of Hampton regarding personnel you intend to work on-site at LaRC even if your facility will not be located in Hampton.

e. Escalation – As your cost proposal is expected to reflect the total cost to the Government for you to provide the effort in the statement of work of this solicitation, your proposal should include anticipated escalation unless escalation is prohibited by law, regulation, or a specific clause in this document. Reference FAR 52.222-43, which addresses escalation of WD and CBA labor rates in fixed price contracts. Use CBA rates for the applicable years as any escalation therein is negotiated and contractual, not contingency. Escalation factors should be clearly stated and escalated amounts shown for each escalated item. Discuss the derivation and rationale for the proposed escalation. Discuss your rationale for not escalating any elements that would normally be escalated.

f. Profit – Clearly show the amounts of profit proposed in each BSIN for each contract year.

IV. RELEVANT EXPERIENCE AND PAST PERFORMANCE PROPOSAL (REPP) – VOLUME III

A. FACTOR 3 – REPP Preparation Instructions

1. Each offeror will be evaluated on its relevant experience and past performance, and that of significant subcontractors or teaming partners, if any, under existing or prior contracts for similar products or services. Past performance information will be used to assess the extent to which contract objectives (including technical, safety performance, management, schedule, and cost) have been achieved on related efforts. Relevant experience is the accomplishment of work which is comparable or related to the work or effort required by this RFP. This factor includes the evaluation of overall corporate or offeror experience and past performance, but not the experience and performance of individuals who are proposed to be involved with work pursuant to this RFP. For newly formed businesses having little or no company experience, the relevant experience and past performance of a predecessor firm, the company's principal owner(s) or corporate officer(s) will be considered. You are cautioned that omissions or an inaccurate or inadequate response to this evaluation factor will have a negative effect on your overall evaluation.

2. The Form REPP – Relevant Experience and Past Performance (Form REPP), included in Attachment 1 to this RFP, will be used to collect information concerning the relevant experience and past performance of the offeror and any significant subcontractor and/or teaming partner. The offeror shall select three of its customers and three customers for each significant subcontractor and/or teaming partner, for which it has performed relevant work within the past three years and forward copies of the Form REPP to those agencies and/or firms for completion and submission to the Contract Specialist for this solicitation. Your customers should return or fax this form to the Contract Specialist no later than the closing date identified in L.13, 1, A. The address and fax number are listed at the bottom of the first page of the Form REPP. Offerors shall include in their proposal the written consent of their proposed significant subcontractors to allow the Government to discuss the subcontractors' past performance evaluation with the offeror.

3. Offerors (and significant subcontractor or teaming partners) shall include with their proposal a list of the firms that will submit evaluation forms. The offeror shall also include a list of other contracts it has held and any significant subcontractors and/or teaming partners within the past five years for requirements similar to those being solicited in this acquisition. Other references, aside from those provided by the offeror, may be contacted and their comments considered during the source selection process. The information submitted may be verified by the Government through discussions with the references provided. While the Government may elect to consider data obtained from other sources, the burden of providing relevant references that the Government can readily contact rests with the offeror.

4. For each contract listed or for which a Form REPP will be received, offerors shall prepare short narrative explanation that identifies its customers and briefly describes the contract, including the objectives achieved and any cost growth or schedule delays encountered. Your summary should also include the following for each related contract:

a. Contract Number

b. Contracting Agency

c. Points of contact in the program and contracting offices, including telephone numbers. (Please insure that this information is current and correct.)

d. Contract type

e. Contract beginning and end dates

f. Description of the contract work and explanation of its relevance to this solicitation.

g. Describe the original cost/price and delivery terms in the contract and the cost/price and delivery actually experienced, and explain any differences.

h. For award/incentive fee contracts, separately state in dollars the base fee (if applicable) and award/incentive fee available and the award/incentive fee actually received, on a contract year basis.

i. Identify those contracts having Union Collective Bargaining Agreements and provide information on problems encountered/lessons learned and corrective actions taken to resolve those problems.

j. Provide information on other problems encountered on the identified contracts and the corrective actions taken.

L.14 CONTRACT OFFER

(a) The offeror shall submit a contract offer with the original of its business proposal. The contract offer shall consist of the following: three signed originals of the SF 33 with Blocks 12 through 18 filled-in; only the pages for Sections B through J that require fill-ins (i.e. Sections B.5, H.1, H.9, H.17, Section I Clauses 52.219-4, 52.219-23, Exhibits C and I etc.); Section K; and all properly acknowledged amendments. The balance of the solicitation need not be returned unless the offeror has made changes to pages that will constitute part of the contract. (See paragraph 2 of the solicitation cover page (Form PROC. P-287)). Include with your contract offer a cover letter stating acceptance of the proposed contract terms and conditions that are incorporated in this RFP and will be included in a resultant contract.

(b) Should you be awarded the contract (as evidenced by the Contracting Officers signature on SF33), an original of the contract offer as submitted with your proposal will be returned to you. The balance of the contract should be withdrawn from the solicitation and included as a part of your copy of the fully executed contract.

(c) Note: Offerors should ensure that Section B.5, Price Schedules, and Attachment 2, Bid Schedules, are consistent. If discussions are required, the completion of the Price Schedules will be based on Bid Schedule data as adjusted by discussions. Offerors should ensure that the Small, HUBZone Small Business, Small Disadvantaged and Women-Owned Small Business Subcontracting Plan be included in your contract offer as Exhibit C in addition to its submission under Mission Suitability Subfactor 1. In addition, Offerors are reminded that the total annual firm fixed price specified in Exhibit I, Schedule of Deductions, should equal the total annual price for firm fixed price work in the corresponding Section B.5, Price Schedule. (See Section E.8).

It is critical that conforming, signed contracts be submitted with each offer, as it is anticipated that award may be made without discussions.

SECTION M - EVALUATION FACTORS FOR AWARD

M.1 EVALUATION OF OPTIONS (FAR 52.217-5) (JUL 1990)

Except when it is determined in accordance with FAR 17.206(b) not to be in the Government's best interests, the Government will evaluate offers for award purposes by adding the total price for all options to the total basic requirement. Evaluation of options will not obligate the Government to exercise the option(s).

M.2 METHOD OF EVALUATION

A. Proposals received in response to this RFP will be evaluated by a NASA Source Evaluation Board (SEB) in accordance with FAR 15.3 and NFS 1815.3. Mission Suitability will be scored. Cost and Relevant Experience and Past Performance (REPP) will not be scored; however, REPP will be assigned an adjective rating for each offeror. The Source Selection Authority, after consultation with the SEB and other advisors, will select the offeror which can perform the contract in a manner most advantageous to the Government, all factors considered.

B. Evaluation will be on the basis of material presented and substantiated in your proposal and not on the basis of what may be implied. Vague statements will be interpreted as a lack of understanding on the part of the offeror and/or inability to demonstrate adequate qualifications. Your attention is directed to Section L.13, which provides important instructions concerning proposal preparation.

M.3 EVALUATION FACTORS

A. Factor 1 - Mission Suitability--The content of this section of your proposal will provide the basis for evaluation of your response to the technical requirements of the RFP. A risk assessment will be performed by the Government which will consider any technical, schedule and cost risk. Risks may result from the offeror's technical approach, processes, equipment, etc., or as a result of the cost, schedule, and performance impacts associated with their approaches. The cost realism assessment of the proposed price will be considered in this risk assessment. Risk assessments will be considered in determining Mission Suitability strengths, weaknesses, deficiencies, and numerical/adjectival ratings. Identified risk areas and the potential for cost impact will be considered. The Mission Suitability Subfactors to be considered and scored in the evaluation of your Technical Proposal are set forth below:

1. Subfactor 1 – Management/Staffing –This subfactor will be used to evaluate the effectiveness of the offeror's plan in the following areas:

a. The offeror's proposed phase-in plan which addresses phase-in staff, schedule and approach to completion of each phase-in activity will be evaluated. The offeror's proposed initial staffing plan including sources of personnel, recruiting methods, plans for training (including initial orientation), and policies and procedures which contribute to employee recruiting, retention, and productivity will be evaluated. The offeror's approach for securing all required materials, tools and equipment required for contract performance will be evaluated.

b. The Government will evaluate the offeror's proposed staffing levels and skill mix for the firm fixed price portion of the contract.

c. The Government will evaluate the offeror's proposed organizational structure for efficiently managing the work, including the authority and responsibilities vested in the contract management personnel and their access to company resources and the proposed interface with the Government and subcontractors, if any.

d. The Government will evaluate the offeror's planned subcontracting, teaming arrangements or other associated contractual arrangements, including the proposed work

functions subcontracted, the basis for the selection(s), the type of proposed subcontract(s), and the management, control and integration of the planned subcontracted effort(s) with the prime effort.

e. The Government will evaluate the adequacy of the Small, HUBZone Small Business, Small Disadvantaged and Women-Owned Small Business Subcontracting Plan. The offeror's proposed overall small business subcontracting goal will be evaluated in comparison with the RFP goal of 25%. The proposed approach to meeting this goal; the extent to which the offeror has identified specific small businesses; the extent of commitment to use small business concerns (i.e., enforceable commitments are to be weighted more heavily than non-enforceable ones); types, amount, complexity, and variety of work to be performed by small businesses; and the realism of the Subcontracting Plan will be evaluated. This paragraph does not apply to Small Business offerors.

2. Subfactor 2 - Understanding the Requirement -- This subfactor will be used to evaluate the offeror's understanding of the SOW requirements and approach to performing the work.

a. The offeror's approach for organizing, assigning, estimating, tracking, performing, controlling, and documenting recurring work, trouble calls, and IDIQ work will be evaluated. The offeror's approach to recognizing, reporting and resolving technical and schedule problems will be evaluated. The Government will consider the offeror's approach for maintaining continuity of support (deployment of personnel and other resources) to simultaneously perform recurring work, trouble calls, and IDIQ work. The offeror's approach to minimizing and controlling overtime on IDIQ work will be evaluated. The offeror's approach to responding to major changes in workload, such as a sudden influx of IDIQ repair work or the rescheduling of one or more major facility shutdowns, will be evaluated. The offeror's coverage of typical problems associated with the work of this contract and proposed approaches to minimizing performance risks will be evaluated. Innovative methods proposed for performing or managing work under this contract will also be considered.

b. The Government will evaluate the offeror's demonstrated understanding of CMMS for managing jobs of the size and complexity of this procurement along with the approach for utilizing the Government-furnished CMMS to optimize the planning of maintenance activities and to achieve efficiencies in scheduling, managing and accomplishing work. The offeror's approach to partnering with NASA in recommending enhancement to the CMMS will also be evaluated.

c. The soundness of the offeror's approach to scheduling and arranging all work to cause the least interference with LaRC's mission and normal operations will be evaluated. The offeror's approach to reducing and minimizing facility downtime for maintenance and repair activities will also be evaluated.

d. The offeror's demonstrated understanding of the RCM philosophy and proposed approach to implementing a RCM strategy at LaRC will be evaluated.

e. The offeror's approach to ensuring all contractor operations are performed in compliance with NASA LaRC and Contractor safety program requirements and to achieving quality control for all work performed during the duration of the contract will be evaluated.

3. Subfactor 3--SDB Participation in the SIC Major Groups as Determined by the Department of Commerce

The extent of participation of SDB concerns in the SIC major groups as determined by the Department of Commerce will be evaluated. The extent to which the offeror has identified specific SDB's; the extent of commitment to use SDB concerns (i.e., enforceable commitments are to be weighted more heavily that non-enforceable ones); types, amount, complexity, and variety of work to be performed by SDB's; the realism of the proposal; and past performance in complying with subcontracting plan goals for SDB concerns and monetary targets and/or contract specified goals for SDB participation will be evaluated.

B. Factor 2 - Cost/Price--An analysis of the proposed price for the basic and option periods will be conducted to determine their price reasonableness and cost realism. The prices proposed on the RFP Bid Schedules will be used in this evaluation. The specific elements of each offeror's proposed cost estimate will be reviewed and evaluated by the Government to determine whether the proposed price elements are realistic for the work to be performed; reflect a clear understanding of the requirements; and are consistent with the unique methods of performance and materials described in the offeror's technical proposal. Results of this analysis may be used in performance risk assessments and responsibility determinations. Price evaluation on adjustments/preferences for SDB and HUBZone Small Business concerns will be made as appropriate pursuant to FAR 52.219-23 and/or 52.219-4, respectively.

C. Factor 3 – Relevant Experience Past Performance--Past performance will be assessed to determine the extent to which contract objectives (including technical, safety performance, management, schedule, cost, and Small Business Subcontracting goals) have been achieved on related efforts by the offeror and any significant subcontractors and/or teaming partners. Experience will be viewed as the demonstrated accomplishment of work which is comparable and relevant to this procurement. This factor includes the evaluation of overall corporate or offeror experience and past performance, including any significant subcontractors and/or teaming partners, but not the experience and performance of individuals who are proposed to be involved in the required work. For newly formed businesses having little or no company experience, the relevant experience and past performance of a predecessor firm, the company's principal owner(s) or corporate officer(s) will be evaluated. In conducting the evaluation for this factor, the Government reserves the right to use all information available, whether provided by the offeror in its proposal or obtained from other sources. For example, the Government may rely on information contained in its own records and that available through reference checks, Government audit agencies, and commercial sources.

M.4 RELATIVE IMPORTANCE OF EVALUATION FACTORS

A. The weights to be used in the scoring of the Mission Suitability Subfactors are presented below:

Subfactors	Weights
Subfactor 1 - Management/Staffing	300
Subfactor 2 - Understanding the Requirements	600
Subfactor 3 - Small Disadvantaged Business Participation	100
Total:	1,000

The numerical weights assigned to the above subfactors are indicative of the relative importance of those evaluation areas. The weights will be utilized only as a guide.

Credit under Subfactor 3 is not available to SDB concerns that receive a price evaluation adjustment under FAR 52.219-23. Therefore, if an offeror is a SDB that has not waived the evaluation adjustment, the maximum score that offeror will receive on Factor 1 is 900 of the 1,000 weight.

B. Overall, in the selection of a Contractor for award, Mission Suitability, Cost/Price, and Relevant Experience and Past Performance, will be of essentially equal importance. All evaluation factors other than cost/price, when combined, are significantly more important then cost/price.

ATTACHMENT 1

RELEVANT EXPERIENCE AND PAST PERFORMANCE EVALUATION INSTRUCTIONS

Page one, Section I through III, of the REPP form provides for contractually related descriptive information and identification of the evaluator.

Section IV lists the major work elements within our Statement of Work (SOW). Please provide your assessment of the extent of relevant experience associated with our SOW evidenced within the contract for which you are a reference. The following definitions are offered for your use in assigning a performance level for each of the factors in Section IV:

Significant Experience - The contractor routinely performed a full range of experience.

Moderate Experience - The contractor has experience in several aspects of a work element, even though the experience may not have been on a continuous basis.

Minimal Experience - Although at least some aspects of the work may have been performed, such performance was limited in scope or frequency by the contractor.

Didn't Perform - The work element was not performed under the contract.

Section V is a form to evaluate the contractor's technical performance, while section VI is to evaluate factors associated with their business management. Space is provided for comments (additional pages may be used if desired); comments would be particularly appreciated concerning excellent and less than satisfactory performance. The following definitions are offered for your use in assigning a performance level for each of the factors in Section V and VI:

Excellent - Performance which, in addition to fully satisfying contract and/or customer requirements, features above-average innovation and efficiency and rare or nonexistent deficiencies.

Satisfactory - Effective performance which is fully responsive to contract and/or customer requirements; identified deficiencies do not affect overall performance.

Less Than Satisfactory - Performance which frequently fails to meet contract requirements and/or customer expectations, and which includes deficiencies that impact other areas of work performance.

Section VII provides for evaluation of the contractor's management of cost and award fee history.

Please send the completed form to the address listed at the bottom of Page 1.

FORM REPP -- RELEVANT EXPERIENCE AND PAST PERFORMANCE

Solicitation No. 1-135-GI.2166

I. CONTRACT INFORMATION:

A. Name of Company Being Evaluated: _____

B. Address: _____

C. Contract Number: _____ D. Contract Type: _____

E. Contract Value: _____ F. Period of Performance: _____ to _____

II. DESCRIPTION OF CONTRACT:

_____

_____

_____

_____

_____

During the contract performance being evaluated, this firm was the:

☐ Prime Contractor; ☐ Significant Subcontractor; ☐ Team Member; ☐ Other (Describe)

_____

_____

Does a corporate or business relationship exist between the firm being evaluated and your organization?

☐ Yes ☐ No If so, please describe: _____

_____

_____

III. EVALUATOR:

Name: _____

Title: _____

Organization: _____

Address: _____

_____

Telephone No.: _____ Fax No.: _____

SEND TO: ATTN: TRACY M. SPRUILL
NASA LANGLEY RESEARCH CENTER
9A LANGLEY BOULEVARD
HAMPTON, VA 23681-2199
TELEPHONE: 757-864-2538
FAX: 757-864-7709

This form contains Source Selection Information when completed. See FAR 3.104.

IV. RELEVANT EXPERIENCE:

MAINTENANCE & REPAIR ACTIVITIES INSTITUTIONAL FACILITIES	RELEVANT EXPERIENCE Significant	Moderate	Minimal	Didn't Perform
INSTITUTIONAL FACILITIES				
Facility exterior and interior, including structure, siding, concrete, masonry, roofing, doors, windows, walls, ceilings, flooring, power, lighting, painting				
Fire protection & life safety systems				
Elevators and related systems				
Surveillance and control of facility conditions and systems through computerized Energy Management and Utility Control System				
Roads, parking lots, sidewalks, & other surfaced areas				
Construction and subcontract administration services				
HEATING VENTILATION & AIR CONDITIONING AND PLUMBING SYSTEMS				
Small to large air conditioning systems (window units to greater than 300 ton systems), absorption units, screw machines, reciprocating chilled water systems, industrial refrigeration units				
Cooling towers and closed loop water systems - up to 20,000 GPM				
Central steam generation and heating plant operations and maintenance, natural gas systems operations				
Facility plumbing systems, sanitary sewer systems, potable water distribution systems				
ELECTRICAL EQUIPMENT				
ELECTRICAL EQUIPMENT High and medium voltage electrical distribution systems up to 115,000 volts, overhead and underground primary lines to the point of service connection to the facility				
Primary substations involving voltages from 2.4 kV to 115 kV, oil filled transformers, nitrogen systems, battery banks				
Oil, vacuum, and SF6 type circuit breakers, emergency power generation, protective relays, meters, and 480-208 volt drawout circuit breakers				
INDUSTRIAL EQUIPMENT				
Built in Cranes, hoists, and monorails and lifting devices				
Rigging and hauling services				
Lubrication and hydraulic systems up to 10,000 psi				
Large, complex high pressure compressed air, heavy gas, and other compression and reclamation systems up to 10,000 psi				
Large complex mechanical equipment such as wind tunnel test section and model support systems, drive couplings, gearboxes, and bearings				
Large complex electrical drive systems up to 135,000 HP; AC, DC, synchronous, and wound rotor induction motors; drive controls, electrical switchgear, transformers, protective relays				
Precision cleaning and verification of O_2 system components				
Maintenance and repair of industrial instrumentation.				
MAINTENANCE & REPAIR - GENERAL				
Operating and maintaining a Computerized Maintenance Management System to manage workload, schedules, level resources, evaluate job status, and maintain documentation on maintenance & repair contracts				

MAINTENANCE & REPAIR ACTIVITIES INSTITUTIONAL FACILITIES	RELEVANT EXPERIENCE			
	Significant	Moderate	Minimal	Didn't Perform
Evaluating and defining modifications to facilities & related systems to provide continued and enhanced facility operations & maintenance				
Developing & implementing a Reliability Centered Maintenance strategy, resulting in the most effective mix of preventive, predictive, & programmed maintenance and the optimal investment of maintenance resources				
Furnishing renovation, modification, and construction services				
Maintaining environmental compliance in the areas of hazardous material and hazardous waste management				
Complying with Safety and Quality Assurance requirements				
Complying with Davis-Bacon Act contract requirements				

V. TECHNICAL PERFORMANCE EVALUATION:

TECHNICAL	PERFORMANCE LEVEL		
	Excellent	Satisfactory	Less than Satisfactory
Effectiveness of technical leadership/management			
Quality of technical performance (conformance to specifications)			
Degree of cooperation and effectiveness of technical problem resolution			
Degree of cooperation in minimizing facility downtime by performing maintenance and repairs at times most advantageous to facility users			
Quality and effectiveness of Contractor's use of Computerized Maintenance Management System to manage workload, level resources, evaluate job status, and maintain documentation			
Effectiveness of Contractor's Reliability Centered Maintenance strategy, did it result in the most effective maintenance approach and the optimal investment of maintenance resources			
Timeliness of technical performance (schedule compliance)			
Effectiveness of technical management in handling priorities, emergencies, changes, and other unexpected situations			
Demonstrated ability to stay abreast or ahead of advancing technology			
Overall Technical Performance			

VI. BUSINESS PERFORMANCE EVALUATION:

CONTRACT MANAGEMENT PERFORMANCE	PERFORMANCE LEVEL		
	Excellent	Satisfactory	Less Than Satisfactory
Personnel management; e.g., ability to recruit/retain highly skilled personnel and to retain key personnel, training programs, employee motivation, and rewards			
Personnel utilization; e.g., application and cross training of personnel, ability to handle fluctuating workloads			
Development and submittal of required reports and documentation			
Problem identification and resolution; initiative and innovation in accomplishing requirements			
Effectiveness of the EEO program			
Effectiveness of the safety program			
Compliance with contractual terms and conditions			
Utilization & Management of Subcontractors			
Autonomy of the local contract manager			
Record in Meeting SDB Goals			
Record in Meeting Small Business and Women-Owned Small Business Subcontracting Goals			
Compliance with union collective Bargaining Agreements			
Overall Contract Management Performance			

Comments:

VII. COST MANAGEMENT/AWARD FEE:

1. Evaluate the Contractor's overall cost management performance; provide comments as applicable.

☐ Excellent ☐ Very Good ☐ Average ☐ Marginal ☐ Poor

Comments:

_____

_____

_____

_____

2. Did the Contractor experience any cost overruns or underruns? Please indicate amounts.

☐ Contractor successfully met cost objectives.

☐ Overrun amount $ _____

Amount of overrun within Contractor's control $ _____

Amount of overrun outside Contractor's control $ _____

Underrun amount $ _____

Cause of overrun or underrun _____

What was the impact of any overrun or underrun on customer programs? _____

_____

_____

_____

3. If this contract is an award or incentive fee contract, please indicate the available award fee pool, the amount awarded, and the percentage for the last three (3) award periods.

Award Fee Period (Most recent first)	Available Award Fee Pool	Amount Awarded	Award Fee Percentage
From _____ To _____			
From _____ To _____			
From _____ To _____			

ATTACHMENT 2

Bid Schedule

BID SCHEDULE 1: BASE PERIOD - SEPTEMBER 1, 1999 Through AUGUST 31, 2000					
ITEM NO.	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
100	**PHASE-IN PERIOD (PIP):**				
	Total Price for Line Item 100	**PIP**	**LOT**		**$**
101	**FIRM FIXED-PRICE (FFP) WORK:**				
	Preventive Maintenance Work		Yr.	$	
	Other Recurring Work		Yr.	$	
	Trouble Call Work (11,000 estimated per year)		Yr.	$	
	Total Price for Line Item 101				**$**
	Total Price for Line Items 100 and 101	**FFP**			**$**
102	**INDEFINITE QUANTITY WORK - UNIT PRICED TASKS:**				
102-19	Calibration, Testing and Component Verification				
102-19.1	Fabrication of Hoses (See Section C.19.j.)				
A	1" Synflex	300	Ln. Ft.	$	$
B	1" Single Braided Stainless Steel	50	Ln. Ft.	$	$
C	1" Double Braided	50	Ln. Ft.	$	$
D	3/4" Synflex	300	Ln. Ft.	$	$
E	3/4" Single Briaded	20	Ln. Ft.	$	$
F	3/4" Double Braided	20	Ln. Ft.	$	$
G	1/2" Synflex	800	Ln. Ft.	$	$
H	1/2" Single Braided	75	Ln. Ft.	$	$
I	1/2" Double Braided	75	Ln. Ft.	$	$
J	3/8" Synflex	1,000	Ln. Ft.	$	$
K	3/8" Single Braided	75	Ln. Ft.	$	$
L	3/8" Double Braided	75	Ln. Ft.	$	$
M	1/4" Synflex	1,000	Ln. Ft.	$	$
N	1/4" Single Braided	75	Ln. Ft.	$	$
O	1/4" Double Braided	75	Ln. Ft.	$	$
P	1/4" Air Hose	1,000	Ln. Ft.	$	$
Q	3/8" Air Hose	100	Ln. Ft.	$	$
R	1/2" Air Hose	100	Ln. Ft.	$	$
	Subtotal - Line Item 102-19				$
102-21	Buildings and Structures Maintenance and Repair				
102-21.1	Flooring Replacement (See Section C.21.h.(1)(a))				
A	Resilient Tiles, 12"X12", 1/8" Thick	25,000	Sq. Ft.	$	$
B	Linoleum Sheet Flooring	10,000	Sq. Ft.	$	$
C	Vinyl Sheet Flooring	15,000	Sq. Ft.	$	$
D	Finished Wood Flooring	5,000	Sq. Ft.	$	$
E	Metal Flooring	3,000	Sq. Ft.	$	$
F	Elevated (Raised Computer) Flooring	6,000	Sq. Ft.	$	$
G	Patching Concrete Floors	4,000	Sq. Ft.	$	$
H	Replacing Vinyl Baseboards	1,500	Ln. Ft.	$	$
I	Ceramic Title	3,000	Sq. Ft.	$	$
102-21.2	Ceiling Tile Replacement (See Section C.21.h.(1)(b))				
A	Acoustical Ceiling Tile, 2'X4' and 2'X2', 5/8" Thick	7,000	Sq. Ft.	$	$

BID SCHEDULE 1: BASE PERIOD - SEPTEMBER 1, 1999 Through AUGUST 31, 2000						
ITEM NO.	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT		UNIT PRICE	TOTAL PRICE
102-21.3	Roofing Replacement (See Section C.21.h.(2)(c))					
A	Asphalt Shingle Roofing	1,000	Sq. Ft.	$		$
B	Modified Bituminous/Single Ply Membrane	1,000	Sq. Ft.	$		$
C	Built-up Roofing, 4-Ply	20,000	Sq. Ft.	$		$
D	Slate Roofing	10	Sq. Ft.	$		$
E	Corrugated Fiberglass	100	Sq. Ft.	$		$
F	Copper Flashing	10,000	Ln. Ft.	$		$
102-21.4	Painting (See Section C.21.i.)					
A	Interior Painting, Gypsum Wallboard, One Coat	250,000	Sq. Ft.	$		$
B	Interior Painting, Concrete/Concrete Block, One Coat	150,000	Sq. Ft.	$		$
C	Interior Painting, Ferrous Surfaces, One Coat	100,000	Sq. Ft.	$		$
D	Interior Painting, Wood Trim, One Coat	50,000	Sq. Ft.	$		$
	Subtotal - Line Item 102-21					$
102-25	Fire Protection and Life Safety System Maintenance and Repair					
102-25.1	Replace Fire Hydrant (See Section C.25.g.(2))	5	Each	$		$
	Subtotal - Line Item 102-25					$
102-27	Roads and Other Surfaced Areas Maintenance and Repair					
102-27.1	Concrete Curb and Gutter (See SectionC.27.f(2)(b))	4000	Ln. Ft.	$		$
102-27.2	Replacement of Wheel Stops in Parking Areas (See Section C.27.f(2)(c))	100	Each	$		$
102-27.3	Sealing Concrete Joints and Cracks (See Section C.27.f(2)(f))	1000	Ln. Ft.	$		$
102-27.4	Pavement Striping and Stenciling (See Section C.27.h.(2))					
A	Roadway Striping - White or Yellow Reflective	9000	Ln. Ft.	$		$
B	Parking Lot Striping - White	50000	Ln. Ft.	$		$
C	Pavement Crosswalks - White Reflective	5000	Ln. Ft.	$		$
D	Pavement Stop Bars - White Reflective	2000	Ln. Ft.	$		$
E	Traffic Letters and Numbers - White	100	Each	$		$
F	Handicap Symbols - Blue Box, White Symbol & Border	100	Each	$		$
G	Parking Stall Letters and Numbers	200	Each	$		$
H	Curb Painting-Yellow, Red or Blue (Or as Directed by CO)	100	Ln. Ft.	$		$
I	Curb Stenciling - White or Black	100	Each	$		$
102-27.5	Snow Plowing/Removal (See Section C.27.i) Roads and Parking Lots					
A	Up to Four (4) inches	250000	Sq. Yd.	$		$
B	Four (4) to & Including Eight (8) inches	250000	Sq. Yd.	$		$
C	Eight (8) to & Including Fourteen (14) inches	250000	Sq. Yd.	$		$
D	Greater than 14 inches	250000	Sq. Yd.	$		$
102-27.6	Ice Treatment (See Section C.27.i)					
A	Sand Applied	100	Ton	$		$
B	Salt Applied	100	Ton	$		$
C	Other Chemicals Applied	25	Ton	$		$
102-27.7	Snow Plowing/Removal - Sidewalks and Entrances					
A	Up to Four (4) inches	50,000	Sq. Yd.	$		$
B	Four (4) to & Including Eight (8) inches	50,000	Sq. Yd.	$		$
C	Eight (8) to & Including Fourteen (14) inches	50,000	Sq. Yd.	$		$
D	Greater than 14 inches	50,000	Sq. Yd.	$		$

BID SCHEDULE 1: BASE PERIOD - SEPTEMBER 1, 1999 Through AUGUST 31, 2000					
ITEM NO.	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
	Subtotal - Line Item 102-27				$
	Total Price for Line Item 102				**$**
103	**INDEFINITE QUANTITY WORK - UNIT PRICED LABOR**				
103-13.1	Davis-Bacon Act (DBA)Trades (These labor rates are subject to the DBA and General Decision (GD) VA980035 Building unless otherwise indicated.)				
	Bricklayer (Mason)	4,000	Hr.	$	$
	Carpenter	13,000	Hr.	$	$
	Cement Mason	1,600	Hr.	$	$
	Electrician	18,000	Hr.	$	$
	Front End Loader Operator	160	Hr.	$	$
	HVAC/R Mechanic	16,000	Hr.	$	$
	Insulator/Coveror	16,000	Hr.	$	$
	Ironworker	2,000	Hr.	$	$
	Laborer	4,000	Hr.	$	$
	Millwright	5,000	Hr.	$	$
	Painter	15,000	Hr.	$	$
	Painter, GD VA980018 - Heavy	5,000	Hr.	$	$
	Plumber/Pipefitter	20,000	Hr.	$	$
	Power Equipment Operator, Crane	160	Hr.	$	$
	Roofer	5,000	Hr.	$	$
	Welder	2,000	Hr.	$	$
	Subtotal - Line Item 103-13.1				$
103-13.2	Service Contract Act (SCA).Trades (These labor rates are subject to the SCA.)				
	Asbestos Worker	6,100	Hr.	$	$
	Asphalt Worker	1,080	Hr.	$	$
	Backhoe Operator	120	Hr.	$	$
	Bricklayer (Mason)	1,200	Hr.	$	$
	Carpenter	4,500	Hr.	$	$
	Concrete Worker	1,000	Hr.	$	$
	Crane Mechanic	2,500	Hr.	$	$
	Drafter 1	200	Hr.	$	$
	Drywall Finisher/Taper	600	Hr.	$	$
	Drywall Installer/Lather	600	Hr.	$	$
	Electrician, Fire Alarm Systems	1,000	Hr.	$	$
	Electrician, High Voltage	2,000	Hr.	$	$
	Electrician	8,000	Hr.	$	$
	Electronics Technician	1,100	Hr.	$	$
	Elevator Mechanic	3,000	Hr.	$	$
	Engineer, Steam Stationary	160	Hr.	$	$
	Fire Sprinkler Technician	1,080	Hr.	$	$
	Front End Loader Operator	40	Hr.	$	$
	HVAC/R Mechanic	10,000	Hr.	$	$
	HVAC/R Technician	180	Hr.	$	$
	Insulator/Coveror	4,500	Hr.	$	$

BID SCHEDULE 1: BASE PERIOD - SEPTEMBER 1, 1999 Through AUGUST 31, 2000						
ITEM NO.	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT		UNIT PRICE	TOTAL PRICE
	Laborer	2,150	Hr.	$		$
	Machinist, Precision	3,620	Hr.	$		$
	Machinist, Repairman	140	Hr.	$		$
	Mechanic, Calibration A	180	Hr.	$		$
	Mechanic, Calibration B	180	Hr.	$		$
	Mechanic, Equipment	360	Hr.	$		$
	Millwright, Maintenance	1,800	Hr.	$		$
	Operator, Boiler	180	Hr.	$		$
	Oxygen Cleaning Technician	3,080	Hr.	$		$
	Painter, Maintenance	4,000	Hr.	$		$
	Person, Utility	160	Hr.	$		$
	Pipefitter, Maintenance	4,000	Hr.	$		$
	Plant Technician	160	Hr.	$		$
	Power Equipment Operator, Crane	2,000	Hr.	$		$
	Rigger, Maintenance	12,000	Hr.	$		$
	Roofer	2,000	Hr.	$		$
	Sheet Metal Worker	700	Hr.	$		$
	Steamfitter	180	Hr.	$		$
	Water Treatment Analysis	180	Hr.	$		$
	Welder	800	Hr.	$		$
	Subtotal - Line Item 103.13.2					$
103-13.3	Overtime (weighted average rate)	14,000	Hr.	$		$
	Total Price for Line Item 103					$
104	**MATERIAL TO SUPPORT UNIT PRICED LABOR:**					
	Material Fully Burdened Rate (Total Price is Fully Burdened Government Estimate)	$1,600,000			%	$
		Gov. Est.			(FBR)	
105	**EQUIPMENT TO SUPPORT UNIT PRICED LABOR:**					
	Equipment Fully Burdened Rate (Total Price is Fully Burdened Government Estimate)	$250,000			%	$
		Gov. Est.			(FBR)	
	Total Price for Indefinite Quantity Work					$
	(Line Items 102, 103, 104 and 105)					
106	**AWARD FEE**					$ 200,000
	TOTAL PRICE FOR BASE PERIOD					$
	(Line Items 100, 101, 102, 103, 104, 105 and 106)					

BID SCHEDULE 2: BASE PER. .D - SEPTEMBER 1, 2000 Through AUGUS. .1, 2001						
ITEM NO.	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT		UNIT PRICE	TOTAL PRICE
201	**FIRM FIXED-PRICE (FFP) WORK:**					
	Preventive Maintenance Work		Yr.	$		
	Other Recurring Work		Yr.	$		
	Trouble Call Work (11,000 estimated per year)		Yr.	$		
	Total Price for Line Item 201					$
202	**INDEFINITE QUANTITY WORK - UNIT PRICED TASKS:**					
202-19	Calibration, Testing and Component Verification					
202-19.1	Fabrication of Hoses (See Section C.19.j.)					
A	1" Synflex	300	Ln. Ft.	$		$
B	1" Single Braided Stainless Steel	50	Ln. Ft.	$		$
C	1" Double Braided	50	Ln. Ft.	$		$
D	3/4" Synflex	300	Ln. Ft.	$		$
E	3/4" Single Briaded	20	Ln. Ft.	$		$
F	3/4" Double Braided	20	Ln. Ft.	$		$
G	1/2" Synflex	800	Ln. Ft.	$		$
H	1/2" Single Braided	75	Ln. Ft.	$		$
I	1/2" Double Braided	75	Ln. Ft.	$		$
J	3/8" Synflex	1,000	Ln. Ft.	$		$
K	3/8" Single Braided	75	Ln. Ft.	$		$
L	3/8" Double Braided	75	Ln. Ft.	$		$
M	1/4" Synflex	1,000	Ln. Ft.	$		$
N	1/4" Single Braided	75	Ln. Ft.	$		$
O	1/4" Double Braided	75	Ln. Ft.	$		$
P	1/4" Air Hose	1,000	Ln. Ft.	$		$
Q	3/8" Air Hose	100	Ln. Ft.	$		$
R	1/2" Air Hose	100	Ln. Ft.	$		$
	Subtotal - Line Item 202-19					$
202-21	Buildings and Structures Maintenance and Repair					
202-21.1	Flooring Replacement (See SectionC.21.h.(1)(a))					
A	Resilient Tiles, 12"X12", 1/8" Thick	25,000	Sq. Ft.	$		$
B	Linoleum Sheet Flooring	10,000	Sq. Ft.	$		$
C	Vinyl Sheet Flooring	15,000	Sq. Ft.	$		$
D	Finished Wood Flooring	5,000	Sq. Ft.	$		$
E	Metal Flooring	3,000	Sq. Ft.	$		$
F	Elevated (Raised Computer) Flooring	6,000	Sq. Ft.	$		$
G	Patching Concrete Floors	4,000	Sq. Ft.	$		$
H	Replacing Vinyl Baseboards	1,500	Ln. Ft.	$		$
I	Ceramic Title	3,000	Sq. Ft.	$		$
202-21.2	Ceiling Tile Replacement (See Section C.21.h.(1)(b))					
A	Acoustical Ceiling Tile, 2'X4' and 2'X2', 5/8" Thick	7,000	Sq. Ft.	$		$
202-21.3	Roofing Replacement (See Section C.21.h.(2)(c))					
A	Asphalt Shingle Roofing	1,000	Sq. Ft.	$		$
B	Modified Bituminous/Single Ply Membrane	1,000	Sq. Ft.	$		$
C	Built-up Roofing, 4-Ply	20,000	Sq. Ft.	$		$
D	Slate Roofing	10	Sq. Ft.	$		$
E	Corrugated Fiberglass	100	Sq. Ft.	$		$
F	Copper Flashing	10,000	Ln. Ft.	$		$
202-21.4	Painting (See Section C.21.i.)					
A	Interior Painting, Gypsum Wallboard, One Coat	250,000	Sq. Ft.	$		$

BID SCHEDULE 2: BASE PERIOD - SEPTEMBER 1, 2000 Through AUGUST 31, 2001						
ITEM NO.	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT		UNIT PRICE	TOTAL PRICE
B	Interior Painting, Concrete/Concrete Block, One Coat	150,000	Sq. Ft.	$		$
C	Interior Painting, Ferrous Surfaces, One Coat	100,000	Sq. Ft.	$		$
D	Interior Painting, Wood Trim, One Coat	50,000	Sq. Ft.	$		$
	Subtotal - Line Item 202-21					$
202-25	Fire Protection and Life Safety System Maintenance and Repair					
202-25.1	Replace Fire Hydrant (See Section C.25.g.(2))	5	Each	$		$
	Subtotal - Line Item 202-25					$
202-27	Roads and Other Surfaced Areas Maintenance and Repair					
202-27.1	Concrete Curb and Gutter (See Section C.27.f(2)(b))	4000	Ln. Ft.	$		$
202-27.2	Replacement of Wheel Stops in Parking Areas (See Section C.27.f(2)(c))	100	Each	$		$
202-27.3	Sealing Concrete Joints and Cracks (See Section C.27.f(2)(f))	1000	Ln. Ft.	$		$
202-27.4	Pavement Striping and Stenciling (See Section C.27.h.(2))					
A	Roadway Striping - White or Yellow Reflective	9000	Ln. Ft.	$		$
B	Parking Lot Striping - White	50000	Ln. Ft.	$		$
C	Pavement Crosswalks - White Reflective	5000	Ln. Ft.	$		$
D	Pavement Stop Bars - White Reflective	2000	Ln. Ft.	$		$
E	Traffic Letters and Numbers - White	100	Each	$		$
F	Handicap Symbols - Blue Box, White Symbol & Border	100	Each	$		$
G	Parking Stall Letters and Numbers	200	Each	$		$
H	Curb Painting -Yellow, Red or Blue(Or as Directed by CO)	100	Ln. Ft.	$		$
I	Curb Stenciling - White or Black	100	Each	$		$
202-27.5	Snow Plowing/Removal (See Section C.27.i) - Roads and Parking Lots					
A	Up to Four (4) inches	250000	Sq. Yd.	$		$
B	Four (4) to & Including Eight (8) inches	250000	Sq. Yd.	$		$
C	Eight (8) to & Including Fourteen (14) inches	250000	Sq. Yd.	$		$
D	Greater than 14 inches	250000	Sq. Yd.	$		$
202-27.6	Ice Treatment (See Section C.27.i)					
A	Sand Applied	100	Ton	$		$
B	Salt Applied	100	Ton	$		$
C	Other Chemicals Applied	25	Ton	$		$
202-27.7	Snow Plowing/Removal - Sidewalks and Entrances					
A	Up to Four (4) inches	50,000	Sq. Yd.	$		$
B	Four (4) to & Including Eight (8) inches	50,000	Sq. Yd.	$		$
C	Eight (8) to & Including Fourteen (14) inches	50,000	Sq. Yd.	$		$
D	Greater than 14 inches	50,000	Sq. Yd.	$		$
	Subtotal - Line Item 202-27					$
	Total Price for Line Item 202					$
203	**INDEFINITE QUANTITY WORK - UNIT PRICED LABOR**					
203-13.1	Davis-Bacon Act (DBA)Trades (These labor rates are subject to the DBA and General Decision VA980035 Building unless otherwise indicated.)					
	Bricklayer (Mason)	4,000	Hr.	$		$
	Carpenter	13,000	Hr.	$		$
	Cement Mason	1,600	Hr.	$		$

BID SCHEDULE 2: BASE PERIOD - SEPTEMBER 1, 2000 Through AUGUST 31, 2001					
ITEM NO.	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
	Electrician	18,000	Hr.	$	$
	Front End Loader Operator	160	Hr.	$	$
	HVAC/R Mechanic	16,000	Hr.	$	$
	Insulator/Coveror	16,000	Hr.	$	$
	Ironworker	2,000	Hr.	$	$
	Laborer	4,000	Hr.	$	$
	Millwright	5,000	Hr.	$	$
	Painter	15,000	Hr.	$	$
	Painter, GD VA980018 - Heavy	5,000	Hr.	$	$
	Plumber/Pipefitter	20,000	Hr.	$	$
	Power Equipment Operator, Crane	160	Hr.	$	$
	Roofer	5,000	Hr.	$	$
	Welder	2,000	Hr.	$	$
	Subtotal - Line Item 203-13.1				$
203-13.2	Service Contract Act (SCA).Trades (These labor rates are subject to the SCA.)				
	Asbestos Worker	6,100	Hr.	$	$
	Asphalt Worker	1,080	Hr.	$	$
	Backhoe Operator	120	Hr.	$	$
	Bricklayer (Mason)	1,200	Hr.	$	$
	Carpenter	4,500	Hr.	$	$
	Concrete Worker	1,000	Hr.	$	$
	Crane Mechanic	2,500	Hr.	$	$
	Drafter 1	200	Hr.	$	$
	Drywall Finisher/Taper	600	Hr.	$	$
	Drywall Installer/Lather	600	Hr.	$	$
	Electrician, Fire Alarm Systems	1,000	Hr.	$	$
	Electrician, High Voltage	2,000	Hr.	$	$
	Electrician	8,000	Hr.	$	$
	Electronics Technician	1,100	Hr.	$	$
	Elevator Mechanic	3,000	Hr.	$	$
	Engineer, Steam Stationary	160	Hr.	$	$
	Fire Sprinkler Technician	1,080	Hr.	$	$
	Front End Loader Operator	40	Hr.	$	$
	HVAC/R Mechanic	10,000	Hr.	$	$
	HVAC/R Technician	180	Hr.	$	$
	Insulator/Coveror	4,500	Hr.	$	$
	Laborer	2,150	Hr.	$	$
	Machinist, Precision	3,620	Hr.	$	$
	Machinist, Repairman	140	Hr.	$	$
	Mechanic, Calibration A	180	Hr.	$	$
	Mechanic, Calibration B	180	Hr.	$	$
	Mechanic, Equipment	360	Hr.	$	$
	Millwright, Maintenance	1,800	Hr.	$	$
	Operator, Boiler	180	Hr.	$	$
	Oxygen Cleaning Technician	3,080	Hr.	$	$
	Painter, Maintenance	4,000	Hr.	$	$
	Person, Utility	160	Hr.	$	$
	Pipefitter, Maintenance	4,000	Hr.	$	$
	Plant Technician	160	Hr.	$	$
	Power Equipment Operator, Crane	2,000	Hr.	$	$
	Rigger, Maintenance	12,000	Hr.	$	$

BID SCHEDULE 2: BASE PERIOD - SEPTEMBER 1, 2000 Through AUGUST 31, 2001					
ITEM NO.	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
	Roofer	2,000	Hr.	$	$
	Sheet Metal Worker	700	Hr.	$	$
	Steamfitter	180	Hr.	$	$
	Water Treatment Analysis	180	Hr.	$	$
	Welder	800	Hr.	$	$
	Subtotal - Line Item 203.13.2				$
203-13.3	Overtime (weighted average rate)	14,000	Hr.	$	$
	Total Price for Line Item 203				$
204	**MATERIAL TO SUPPORT UNIT PRICED LABOR:**				
	Material Fully Burdened Rate (Total Price is Fully Burdened Government Estimate)	$1,600,000 Gov. Est.		% (FBR)	$
205	**EQUIPMENT TO SUPPORT UNIT PRICED LABOR:**				
	Equipment Fully Burdened Rate (Total Price is Fully Burdened Government Estimate)	$250,000 Gov. Est.		% (FBR)	$
	Total Price for Indefinite Quantity Work (Line Items 202, 203, 204 and 205)				$
206	**AWARD FEE**				**$ 200,000**
	TOTAL PRICE FOR BASE PERIOD (Line Items 201, 202, 203, 204, 205 and 206)				$

BID SCHEDULE 3: OPTION . .RIOD 1 - SEPTEMBER 1, 2001 Through . JGUST 31, 2002						
ITEM NO.		DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
301		**FIRM FIXED-PRICE (FFP) WORK:**				
		Preventive Maintenance Work		Yr.	$	
		Other Recurring Work		Yr.	$	
		Trouble Call Work (11,000 estimated per year)		Yr.	$	
		Total Price for Line Items 301	**FFP**			$
302		**INDEFINITE QUANTITY WORK - UNIT PRICED TASKS:**				
302-19		Calibration, Testing and Component Verification				
302-19.1		Fabrication of Hoses (See Section C.19.j.)				
	A	1" Synflex	300	Ln. Ft.	$	$
	B	1" Single Braided Stainless Steel	50	Ln. Ft.	$	$
	C	1" Double Braided	50	Ln. Ft.	$	$
	D	3/4" Synflex	300	Ln. Ft.	$	$
	E	3/4" Single Briaded	20	Ln. Ft.	$	$
	F	3/4" Double Braided	20	Ln. Ft.	$	$
	G	1/2" Synflex	800	Ln. Ft.	$	$
	H	1/2" Single Braided	75	Ln. Ft.	$	$
	I	1/2" Double Braided	75	Ln. Ft.	$	$
	J	3/8" Synflex	1,000	Ln. Ft.	$	$
	K	3/8" Single Braided	75	Ln. Ft.	$	$
	L	3/8" Double Braided	75	Ln. Ft.	$	$
	M	1/4" Synflex	1,000	Ln. Ft.	$	$
	N	1/4" Single Braided	75	Ln. Ft.	$	$
	O	1/4" Double Braided	75	Ln. Ft.	$	$
	P	1/4" Air Hose	1,000	Ln. Ft.	$	$
	Q	3/8" Air Hose	100	Ln. Ft.	$	$
	R	1/2" Air Hose	100	Ln. Ft.	$	$
		Subtotal - Line Item 302-19				$
302-21		Buildings and Structures Maintenance and Repair				
302-21.1		Flooring Replacement (See Section C.21.h.(1)(a))				
	A	Resilient Tiles, 12"X12", 1/8" Thick	25,000	Sq. Ft.	$	$
	B	Linoleum Sheet Flooring	10,000	Sq. Ft.	$	$
	C	Vinyl Sheet Flooring	15,000	Sq. Ft.	$	$
	D	Finished Wood Flooring	5,000	Sq. Ft.	$	$
	E	Metal Flooring	3,000	Sq. Ft.	$	$
	F	Elevated (Raised Computer) Flooring	6,000	Sq. Ft.	$	$
	G	Patching Concrete Floors	4,000	Sq. Ft.	$	$
	H	Replacing Vinyl Baseboards	1,500	Ln. Ft.	$	$
	I	Ceramic Title	3,000	Sq. Ft.	$	$
302-21.2		Ceiling Tile Replacement (See Section C.21.h.(1)(b))				
	A	Acoustical Ceiling Tile, 2'X4' and 2'X2', 5/8" Thick	7,000	Sq. Ft.	$	$
302-21.3		Roofing Replacement (See Section C.21.h.(2)(c))				
	A	Asphalt Shingle Roofing	1,000	Sq. Ft.	$	$
	B	Modified Bituminous/Single Ply Membrane	1,000	Sq. Ft.	$	$
	C	Built-up Roofing, 4-Ply	20,000	Sq. Ft.	$	$
	D	Slate Roofing	10	Sq. Ft.	$	$
	E	Corrugated Fiberglass	100	Sq. Ft.	$	$

BID SCHEDULE 3: OPTION PERIOD 1 - SEPTEMBER 1, 2001 Through AUGUST 31, 2002						
ITEM NO.	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT		UNIT PRICE	TOTAL PRICE
F	Copper Flashing	10,000	Ln. Ft.	$		$
302-21.4	Painting (See Section C.21.i.)					
A	Interior Painting, Gypsum Wallboard, One Coat	250,000	Sq. Ft.	$		$
B	Interior Painting, Concrete/Concrete Block, One Coat	150,000	Sq. Ft.	$		$
C	Interior Painting, Ferrous Surfaces, One Coat	100,000	Sq. Ft.	$		$
D	Interior Painting, Wood Trim, One Coat	50,000	Sq. Ft.	$		$
	Subtotal - Line Item 302-21					$
302-25	Fire Protection and Life Safety System Maintenance and Repair					
302-25.1	Replace Fire Hydrant (See Section C.25.g.(2))	5	Each	$		$
	Subtotal - Line Item 302-25					$
302-27	Roads and Other Surfaced Areas Maintenance and Repair					
302-27.1	Concrete Curb and Gutter (See Section C.27.f(2)(b))	4000	Ln. Ft.	$		$
302-27.2	Replacement of Wheel Stops in Parking Areas (See Section C.27.f(2)(c))	100	Each	$		$
302-27.3	Sealing Concrete Joints and Cracks (See Section C.27.f(2)(f))	1000	Ln. Ft.	$		$
302-27.4	Pavement Striping and Stenciling (See Section C.27.h.(2))					
A	Roadway Striping - White or Yellow Reflective	9000	Ln. Ft.	$		$
B	Parking Lot Striping - White	50000	Ln. Ft.	$		$
C	Pavement Crosswalks - White Reflective	5000	Ln. Ft.	$		$
D	Pavement Stop Bars - White Reflective	2000	Ln. Ft.	$		$
E	Traffic Letters and Numbers - White	100	Each	$		$
F	Handicap Symbols - Blue Box, White Symbol & Border	100	Each	$		$
G	Parking Stall Letters and Numbers	200	Each	$		$
H	Curb Painting-Yellow, Red or Blue (Or as Directed by CO)	100	Ln. Ft.	$		$
I	Curb Stenciling - White or Black	100	Each	$		$
302-27.5	Snow Plowing/Removal (See Section C.27.i) - Roads and Parking Lots					
A	Up to Four (4) inches	250000	Sq. Yd.	$		$
B	Four (4) to & Including Eight (8) inches	250000	Sq. Yd.	$		$
C	Eight (8) to & Including Fourteen (14) inches	250000	Sq. Yd.	$		$
D	Greater than 14 inches	250000	Sq. Yd.	$		$
302-27.6	Ice Treatment (See Section C.27.i)					
A	Sand Applied	100	Ton	$		$
B	Salt Applied	100	Ton	$		$
C	Other Chemicals Applied	25	Ton	$		$
302-27.7	Snow Plowing/Removal - Sidewalks and Entrances					
A	Up to Four (4) inches	50,000	Sq. Yd.	$		$
B	Four (4) to & Including Eight (8) inches	50,000	Sq. Yd.	$		$
C	Eight (8) to & Including Fourteen (14) inches	50,000	Sq. Yd.	$		$
D	Greater than 14 inches	50,000	Sq. Yd.	$		$
	Subtotal - Line Item 302-27					$
	Total Price for Line Item 302					$
303	**INDEFINITE QUANTITY WORK - UNIT PRICED LABOR**					

BID SCHEDULE 3: OPTION PERIOD 1 - SEPTEMBER 1, 2001 Through AUGUST 31, 2002					
ITEM NO.	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
303-13.1	Davis-Bacon Act (DBA)Trades (These labor rates are subject to the DBA and General Decision (GD) VA980035 Building unless otherwise indicated.)				
	Bricklayer (Mason)	4,000	Hr.	$	$
	Carpenter	13,000	Hr.	$	$
	Cement Mason	1,600	Hr.	$	$
	Electrician	18,000	Hr.	$	$
	Front End Loader Operator	160	Hr.	$	$
	HVAC/R Mechanic	16,000	Hr.	$	$
	Insulator/Coveror	16,000	Hr.	$	$
	Ironworker	2,000	Hr.	$	$
	Laborer	4,000	Hr.	$	$
	Millwright	5,000	Hr.	$	$
	Painter	15,000	Hr.	$	$
	Painter, GD VA980018 - Heavy	5,000	Hr.	$	$
	Plumber/Pipefitter	20,000	Hr.	$	$
	Power Equipment Operator, Crane	160	Hr.	$	$
	Roofer	5,000	Hr.	$	$
	Welder	2,000	Hr.	$	$
	Subtotal - Line Item 303-13.1				$
303-13.2	Service Contract Act (SCA).Trades (These labor rates are subject to the SCA.)				
	Asbestos Worker	6,100	Hr.	$	$
	Asphalt Worker	1,080	Hr.	$	$
	Backhoe Operator	120	Hr.	$	$
	Bricklayer (Mason)	1,200	Hr.	$	$
	Carpenter	4,500	Hr.	$	$
	Concrete Worker	1,000	Hr.	$	$
	Crane Mechanic	2,500	Hr.	$	$
	Drafter 1	200	Hr.	$	$
	Drywall Finisher/Taper	600	Hr.	$	$
	Drywall Installer/Lather	600	Hr.	$	$
	Electrician, Fire Alarm Systems	1,000	Hr.	$	$
	Electrician, High Voltage	2,000	Hr.	$	$
	Electrician	8,000	Hr.	$	$
	Electronics Technician	1,100	Hr.	$	$
	Elevator Mechanic	3,000	Hr.	$	$
	Engineer, Steam Stationary	160	Hr.	$	$
	Fire Sprinkler Technician	1,080	Hr.	$	$
	Front End Loader Operator	40	Hr.	$	$
	HVAC/R Mechanic	10,000	Hr.	$	$
	HVAC/R Technician	180	Hr.	$	$
	Insulator/Coveror	4,500	Hr.	$	$
	Laborer	2,150	Hr.	$	$
	Machinist, Precision	3,620	Hr.	$	$
	Machinist, Repairman	140	Hr.	$	$
	Mechanic, Calibration A	180	Hr.	$	$
	Mechanic, Calibration B	180	Hr.	$	$
	Mechanic, Equipment	360	Hr.	$	$

BID SCHEDULE 3: OPTION PERIOD 1 - SEPTEMBER 1, 2001 Through AUGUST 31, 2002						
ITEM NO.	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT		UNIT PRICE	TOTAL PRICE
	Millwright, Maintenance	1,800	Hr.	$		$
	Operator, Boiler	180	Hr.	$		$
	Oxygen Cleaning Technician	3,080	Hr.	$		$
	Painter, Maintenance	4,000	Hr.	$		$
	Person, Utility	160	Hr.	$		$
	Pipefitter, Maintenance	4,000	Hr.	$		$
	Plant Technician	160	Hr.	$		$
	Power Equipment Operator, Crane	2,000	Hr.	$		$
	Rigger, Maintenance	12,000	Hr.	$		$
	Roofer	2,000	Hr.	$		$
	Sheet Metal Worker	700	Hr.	$		$
	Steamfitter	180	Hr.	$		$
	Water Treatment Analysis	180	Hr.	$		$
	Welder	800	Hr.	$		$
	Subtotal - Line Item 303.13.2					$
303-13.3	Overtime (weighted average rate)	14,000	Hr.	$		$
	Total Price for Line Item 303					$
304	**MATERIAL TO SUPPORT UNIT PRICED LABOR:**					
	Material Fully Burdened Rate (Total Price is Fully Burdened Government Estimate)	$1,600,000			%	$
		Gov. Est.			(FBR)	
305	**EQUIPMENT TO SUPPORT UNIT PRICED LABOR:**					
	Equipment Fully Burdened Rate (Total Price is Fully Burdened Government Estimate)	$250,000			%	$
		Gov. Est.			(FBR)	
	Total Price for Indefinite Quantity Work					$
	(Line Items 302, 303, 304 and 305)					
306	**AWARD FEE**					$ 200,000
	TOTAL PRICE FOR OPTION PERIOD 1					$
	(Line Items 301, 302, 303, 304, 305 and 306)					

BID SCHEDULE 4: OPTION PERIOD 2 - SEPTEMBER 1, 2002 Through AUGUST 31, 2003

ITEM NO.	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
401	**FIRM FIXED-PRICE (FFP) WORK:**				
	Preventive Maintenance Work		Yr.	$	
	Other Recurring Work		Yr.	$	
	Trouble Call Work (11,000 estimated per year)		Yr.	$	
	Total Price for Line Item 401				$
402	**INDEFINITE QUANTITY WORK - UNIT PRICED TASKS:**				
402-19	Calibration, Testing and Component Verification				
402-19.1	Fabrication of Hoses (See Section C.19.j.)				
A	1" Synflex	300	Ln. Ft.	$	$
B	1" Single Braided Stainless Steel	50	Ln. Ft.	$	$
C	1" Double Braided	50	Ln. Ft.	$	$
D	3/4" Synflex	300	Ln. Ft.	$	$
E	3/4" Single Briaded	20	Ln. Ft.	$	$
F	3/4" Double Braided	20	Ln. Ft.	$	$
G	1/2" Synflex	800	Ln. Ft.	$	$
H	1/2" Single Braided	75	Ln. Ft.	$	$
I	1/2" Double Braided	75	Ln. Ft.	$	$
J	3/8" Synflex	1,000	Ln. Ft.	$	$
K	3/8" Single Braided	75	Ln. Ft.	$	$
L	3/8" Double Braided	75	Ln. Ft.	$	$
M	1/4" Synflex	1,000	Ln. Ft.	$	$
N	1/4" Single Braided	75	Ln. Ft.	$	$
O	1/4" Double Braided	75	Ln. Ft.	$	$
P	1/4" Air Hose	1,000	Ln. Ft.	$	$
Q	3/8" Air Hose	100	Ln. Ft.	$	$
R	1/2" Air Hose	100	Ln. Ft.	$	$
	Subtotal - Line Item 402-19				$
402-21	Buildings and Structures Maintenance and Repair				
402-21.1	Flooring Replacement (See Section C.21.h.(1)(a))				
A	Resilient Tiles, 12"X12", 1/8" Thick	25,000	Sq. Ft.	$	$
B	Linoleum Sheet Flooring	10,000	Sq. Ft.	$	$
C	Vinyl Sheet Flooring	15,000	Sq. Ft.	$	$
D	Finished Wood Flooring	5,000	Sq. Ft.	$	$
E	Metal Flooring	3,000	Sq. Ft.	$	$
F	Elevated (Raised Computer) Flooring	6,000	Sq. Ft.	$	$
G	Patching Concrete Floors	4,000	Sq. Ft.	$	$
H	Replacing Vinyl Baseboards	1,500	Ln. Ft.	$	$
I	Ceramic Title	3,000	Sq. Ft.	$	$
402-21.2	Ceiling Tile Replacement (See Section C.21.h.(1)(b))				
A	Acoustical Ceiling Tile, 2'X4' and 2'X2', 5/8" Thick	7,000	Sq. Ft.	$	$
402-21.3	Roofing Replacement (See Section C.21.h.(2)(c))				
A	Asphalt Shingle Roofing	1,000	Sq. Ft.	$	$
B	Modified Bituminous/Single Ply Membrane	1,000	Sq. Ft.	$	$
C	Built-up Roofing, 4-Ply	20,000	Sq. Ft.	$	$
D	Slate Roofing	10	Sq. Ft.	$	$
E	Corrugated Fiberglass	100	Sq. Ft.	$	$

BID SCHEDULE 4: OPTION PERIOD 2 - SEPTEMBER 1, 2002 Through AUGUST 31, 2003						
ITEM NO.	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT		UNIT PRICE	TOTAL PRICE
F	Copper Flashing	10,000	Ln. Ft.	$	$	
402-21.4	Painting (See Section C.21.i.)					
A	Interior Painting, Gypsum Wallboard, One Coat	250,000	Sq. Ft.	$	$	
B	Interior Painting, Concrete/Concrete Block, One Coat	150,000	Sq. Ft.	$	$	
C	Interior Painting, Ferrous Surfaces, One Coat	100,000	Sq. Ft.	$	$	
D	Interior Painting, Wood Trim, One Coat	50,000	Sq. Ft.	$	$	
	Subtotal - Line Item 402-21				$	
402-25	Fire Protection and Life Safety System Maintenance and Repair					
402-25.1	Replace Fire Hydrant (See Section C.25.g.(2))	5	Each	$	$	
	Subtotal - Line Item 402-25				$	
402-27	Roads and Other Surfaced Areas Maintenance and Repair					
402-27.1	Concrete Curb and Gutter (See Section C.27.f(2)(b))	4000	Ln. Ft.	$	$	
402-27.2	Replacement of Wheel Stops in Parking Areas (See Section C.27.f(2)(c))	100	Each	$	$	
402-27.3	Sealing Concrete Joints and Cracks (See Section C.27.f(2)(f))	1000	Ln. Ft.	$	$	
402-27.4	Pavement Striping and Stenciling (See Section C.27.h.(2))					
A	Roadway Striping - White or Yellow Reflective	9000	Ln. Ft.	$	$	
B	Parking Lot Striping - White	50000	Ln. Ft.	$	$	
C	Pavement Crosswalks - White Reflective	5000	Ln. Ft.	$	$	
D	Pavement Stop Bars - White Reflective	2000	Ln. Ft.	$	$	
E	Traffic Letters and Numbers - White	100	Each	$	$	
F	Handicap Symbols - Blue Box, White Symbol & Border	100	Each	$	$	
G	Parking Stall Letters and Numbers	200	Each	$	$	
H	Curb Painting-Yellow, Red or Blue (Or as Directed by CO)	100	Ln. Ft.	$	$	
I	Curb Stenciling - White or Black	100	Each	$	$	
402-27.5	Snow Plowing/Removal (See Section C.27.i) - Roads and Parking Lots					
A	Up to Four (4) inches	250000	Sq. Yd.	$	$	
B	Four (4) to & Including Eight (8) inches	250000	Sq. Yd.	$	$	
C	Eight (8) to & Including Fourteen (14) inches	250000	Sq. Yd.	$	$	
D	Greater than 14 inches	250000	Sq. Yd.	$	$	
402-27.6	Ice Treatment (See Section C.27.i)					
A	Sand Applied	100	Ton	$	$	
B	Salt Applied	100	Ton	$	$	
C	Other Chemicals Applied	25	Ton	$	$	
402-27.7	Snow Plowing/Removal - Sidewalks and Entrances					
A	Up to Four (4) inches	50,000	Sq. Yd.	$	$	
B	Four (4) to & Including Eight (8) inches	50,000	Sq. Yd.	$	$	
C	Eight (8) to & Including Fourteen (14) inches	50,000	Sq. Yd.	$	$	
D	Greater than 14 inches	50,000	Sq. Yd.	$	$	
	Subtotal - Line Item 402-27				$	
	Total Price for Line Item 402				$	
403	**INDEFINITE QUANTITY WORK - UNIT PRICED LABOR**					

BID SCHEDULE 4: OPTION PERIOD 2 - SEPTEMBER 1, 2002 Through AUGUST 31, 2003					
ITEM NO.	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
403-13.1	Davis-Bacon Act (DBA)Trades (These labor rates are subject to the DBA and General Decision VA980035 Building unless otherwise indicated.)				
	Bricklayer (Mason)	4,000	Hr.	$	$
	Carpenter	13,000	Hr.	$	$
	Cement Mason	1,600	Hr.	$	$
	Electrician	18,000	Hr.	$	$
	Front End Loader Operator	160	Hr.	$	$
	HVAC/R Mechanic	16,000	Hr.	$	$
	Insulator/Coveror	16,000	Hr.	$	$
	Ironworker	2,000	Hr.	$	$
	Laborer	4,000	Hr.	$	$
	Millwright	5,000	Hr.	$	$
	Painter	15,000	Hr.	$	$
	Painter, GD VA980018 - Heavy	5,000	Hr.	$	$
	Plumber/Pipefitter	20,000	Hr.	$	$
	Power Equipment Operator, Crane	160	Hr.	$	$
	Roofer	5,000	Hr.	$	$
	Welder	2,000	Hr.	$	$
	Subtotal - Contract Line Item 403-13.1				$
403-13.2	Service Contract Act (SCA).Trades (These labor rates are subject to the SCA.)				
	Asbestos Worker	6,100	Hr.	$	$
	Asphalt Worker	1,080	Hr.	$	$
	Backhoe Operator	120	Hr.	$	$
	Bricklayer (Mason)	1,200	Hr.	$	$
	Carpenter	4,500	Hr.	$	$
	Concrete Worker	1,000	Hr.	$	$
	Crane Mechanic	2,500	Hr.	$	$
	Drafter 1	200	Hr.	$	$
	Drywall Finisher/Taper	600	Hr.	$	$
	Drywall Installer/Lather	600	Hr.	$	$
	Electrician, Fire Alarm Systems	1,000	Hr.	$	$
	Electrician, High Voltage	2,000	Hr.	$	$
	Electrician	8,000	Hr.	$	$
	Electronics Technician	1,100	Hr.	$	$
	Elevator Mechanic	3,000	Hr.	$	$
	Engineer, Steam Stationary	160	Hr.	$	$
	Fire Sprinkler Technician	1,080	Hr.	$	$
	Front End Loader Operator	40	Hr.	$	$
	HVAC/R Mechanic	10,000	Hr.	$	$
	HVAC/R Technician	180	Hr.	$	$
	Insulator/Coveror	4,500	Hr.	$	$
	Laborer	2,150	Hr.	$	$
	Machinist, Precision	3,620	Hr.	$	$
	Machinist, Repairman	140	Hr.	$	$
	Mechanic, Calibration A	180	Hr.	$	$
	Mechanic, Calibration B	180	Hr.	$	$
	Mechanic, Equipment	360	Hr.	$	$

BID SCHEDULE 4: OPTION PERIOD 2 - SEPTEMBER 1, 2002 Through AUGUST 31, 2003						
ITEM NO.	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT		UNIT PRICE	TOTAL PRICE
	Millwright, Maintenance	1,800	Hr.	$		$
	Operator, Boiler	180	Hr.	$		$
	Oxygen Cleaning Technician	3,080	Hr.	$		$
	Painter, Maintenance	4,000	Hr.	$		$
	Person, Utility	160	Hr.	$		$
	Pipefitter, Maintenance	4,000	Hr.	$		$
	Plant Technician	160	Hr.	$		$
	Power Equipment Operator, Crane	2,000	Hr.	$		$
	Rigger, Maintenance	12,000	Hr.	$		$
	Roofer	2,000	Hr.	$		$
	Sheet Metal Worker	700	Hr.	$		$
	Steamfitter	180	Hr.	$		$
	Water Treatment Analysis	180	Hr.	$		$
	Welder	800	Hr.	$		$
	Subtotal - Line Item 403.13.2					$
403-13.3	Overtime (Weighted Average Rate)	14,000	Hr.	$		$
	Total Price for Line Item 403					$
404	**MATERIAL TO SUPPORT UNIT PRICED LABOR:**					
	Material Fully Burdened Rate (Total Price is Fully Burdened Government Estimate)	$1,600,000			%	$
		Gov. Est.			(FBR)	
405	**EQUIPMENT TO SUPPORT UNIT PRICED LABOR:**					
	Equipment Fully Burdened Rate (Total Price is Fully Burdened Government Estimate)	$250,000			%	$
		Gov. Est.			(FBR)	
	Total Price for Indefinite Quantity Work					$
	(Line Items 402, 403, 404 and 405)					
406	**AWARD FEE**					**$ 200,000**
	TOTAL PRICE FOR OPTION PERIOD 2					$
	(Line Items 401, 402, 403, 404, 405 and 406)					

BID SCHEDULE 5: OPTION PERIOD 3 - SEPTEMBER 1, 2003 Through AUGUST 31, 2004

ITEM NO.	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
501	**FIRM FIXED-PRICE (FFP) WORK:**				
	Preventive Maintenance Work		Yr.	$	
	Other Recurring Work		Yr.	$	
	Trouble Call Work (11,000 estimated per year)		Yr.	$	
	Total Price for Line Items 501	**FFP**			$
502	**INDEFINITE QUANTITY WORK - UNIT PRICED TASKS:**				
502-19	Calibration, Testing and Component Verification				
502-19.1	Fabrication of Hoses (See Section C.19.j.)				
A	1" Synflex	300	Ln. Ft.	$	$
B	1" Single Braided Stainless Steel	50	Ln. Ft.	$	$
C	1" Double Braided	50	Ln. Ft.	$	$
D	3/4" Synflex	300	Ln. Ft.	$	$
E	3/4" Single Briaded	20	Ln. Ft.	$	$
F	3/4" Double Braided	20	Ln. Ft.	$	$
G	1/2" Synflex	800	Ln. Ft.	$	$
H	1/2" Single Braided	75	Ln. Ft.	$	$
I	1/2" Double Braided	75	Ln. Ft.	$	$
J	3/8" Synflex	1,000	Ln. Ft.	$	$
K	3/8" Single Braided	75	Ln. Ft.	$	$
L	3/8" Double Braided	75	Ln. Ft.	$	$
M	1/4" Synflex	1,000	Ln. Ft.	$	$
N	1/4" Single Braided	75	Ln. Ft.	$	$
O	1/4" Double Braided	75	Ln. Ft.	$	$
P	1/4" Air Hose	1,000	Ln. Ft.	$	$
Q	3/8" Air Hose	100	Ln. Ft.	$	$
R	1/2" Air Hose	100	Ln. Ft.	$	$
	Subtotal - Line Item 502-19				$
502-21	Buildings and Structures Maintenance and Repair				
502-21.1	Flooring Replacement (See Section C.21.h.(1)(a))				
A	Resilient Tiles, 12"X12", 1/8" Thick	25,000	Sq. Ft.	$	$
B	Linoleum Sheet Flooring	10,000	Sq. Ft.	$	$
C	Vinyl Sheet Flooring	15,000	Sq. Ft.	$	$
D	Finished Wood Flooring	5,000	Sq. Ft.	$	$
E	Metal Flooring	3,000	Sq. Ft.	$	$
F	Elevated (Raised Computer) Flooring	6,000	Sq. Ft.	$	$
G	Patching Concrete Floors	4,000	Sq. Ft.	$	$
H	Replacing Vinyl Baseboards	1,500	Ln. Ft.	$	$
I	Ceramic Title	3,000	Sq. Ft.	$	$
502-21.2	Ceiling Tile Replacement (See Section C.21.h.(1)(b))				
A	Acoustical Ceiling Tile, 2'X4' and 2'X2', 5/8" Thick	7,000	Sq. Ft.	$	$
502-21.3	Roofing Replacement (See Section C.21.h.(2)(c))				
A	Asphalt Shingle Roofing	1,000	Sq. Ft.	$	$
B	Modified Bituminous/Single Ply Membrane	1,000	Sq. Ft.	$	$
C	Built-up Roofing, 4-Ply	20,000	Sq. Ft.	$	$
D	Slate Roofing	10	Sq. Ft.	$	$
E	Corrugated Fiberglass	100	Sq. Ft.	$	$

BID SCHEDULE 5: OPTION PERIOD 3 - SEPTEMBER 1, 2003 Through AUGUST 31, 2004						
ITEM NO.	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT		UNIT PRICE	TOTAL PRICE
F	Copper Flashing	10,000	Ln. Ft.	$		$
502-21.4	Painting (See Section C.21.i.)					
A	Interior Painting, Gypsum Wallboard, One Coat	250,000	Sq. Ft.	$		$
B	Interior Painting, Concrete/Concrete Block, One Coat	150,000	Sq. Ft.	$		$
C	Interior Painting, Ferrous Surfaces, One Coat	100,000	Sq. Ft.	$		$
D	Interior Painting, Wood Trim, One Coat	50,000	Sq. Ft.	$		$
	Subtotal - Line Item 502-21					$
502-25	Fire Protection and Life Safety System Maintenance and Repair					
502-25.1	Replace Fire Hydrant (See Section C.25.g.(2))	5	Each	$		$
	Subtotal - Line Item 502-25					$
502-27	Roads and Other Surfaced Areas Maintenance and Repair					
502-27.1	Concrete Curb and Gutter (See Section C.27.f(2)(b))	4000	Ln. Ft.	$		$
502-27.2	Replacement of Wheel Stops in Parking Areas (See Section C.27.f(2)(c))	100	Each	$		$
502-27.3	Sealing Concrete Joints and Cracks (See Section C.27.f(2)(f))	1000	Ln. Ft.	$		$
502-27.4	Pavement Striping and Stenciling (See Section C.27.h.(2))					
A	Roadway Striping - White or Yellow Reflective	9000	Ln. Ft.	$		$
B	Parking Lot Striping - White	50000	Ln. Ft.	$		$
C	Pavement Crosswalks - White Reflective	5000	Ln. Ft.	$		$
D	Pavement Stop Bars - White Reflective	2000	Ln. Ft.	$		$
E	Traffic Letters and Numbers - White	100	Each	$		$
F	Handicap Symbols - Blue Box, White Symbol & Border	100	Each	$		$
G	Parking Stall Letters and Numbers	200	Each	$		$
H	Curb Painting-Yellow, Red or Blue (Or as Directed by CO)	100	Ln. Ft.	$		$
I	Curb Stenciling - White or Black	100	Each	$		$
502-27.5	Snow Plowing/Removal (See Section C.27.i) Roads and Parking Lots					
A	Up to Four (4) inches	50,000	Sq. Yd.	$		$
B	Four (4) to & Including Eight (8) inches	50,000	Sq. Yd.	$		$
C	Eight (8) to & Including Fourteen (14) inches	50,000	Sq. Yd.	$		$
D	Greater than 14 inches	50,000	Sq. Yd.	$		$
502-27.6	Ice Treatment (See Section C.27.i)					
A	Sand Applied	100	Ton	$		$
B	Salt Applied	100	Ton	$		$
C	Other Chemicals Applied	25	Ton	$		$
502-27.7	Snow Plowing/Removal - Sidewalks and Entrances					
A	Up to Four (4) inches	50,000	Sq. Yd.	$		$
B	Four (4) to & Including Eight (8) inches	50,000	Sq. Yd.	$		$
C	Eight (8) to & Including Fourteen (14) inches	50,000	Sq. Yd.	$		$
D	Greater than 14 inches	50,000	Sq. Yd.	$		$
	Subtotal - Line Item 502-27					$
	Total Price for Line Item 502					$

BID SCHEDULE 5: OPTION PERIOD 3 - SEPTEMBER 1, 2003 Through AUGUST 31, 2004

ITEM NO.	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
503	**INDEFINITE QUANTITY WORK - UNIT PRICED LABOR**				
503-13.1	Davis-Bacon Act (DBA)Trades (These labor rates are subject to the DBA and General Decision VA980035 Building unless otherwise indicated.)				
	Bricklayer (Mason)	4,000	Hr.	$	$
	Carpenter	13,000	Hr.	$	$
	Cement Mason	1,600	Hr.	$	$
	Electrician	18,000	Hr.	$	$
	Front End Loader Operator	160	Hr.	$	$
	HVAC/R Mechanic	16,000	Hr.	$	$
	Insulator/Coveror	16,000	Hr.	$	$
	Ironworker	2,000	Hr.	$	$
	Laborer	4,000	Hr.	$	$
	Millwright	5,000	Hr.	$	$
	Painter	15,000	Hr.	$	$
	Painter, GD VA980018 - Heavy	5,000	Hr.	$	$
	Plumber/Pipefitter	20,000	Hr.	$	$
	Power Equipment Operator, Crane	160	Hr.	$	$
	Roofer	5,000	Hr.	$	$
	Welder	2,000	Hr.	$	$
	Subtotal - Line Item 503-13.1				$
503-13.2	Service Contract Act (SCA).Trades (These labor rates are subject to the SCA.)				
	Asbestos Worker	6,100	Hr.	$	$
	Asphalt Worker	1,080	Hr.	$	$
	Backhoe Operator	120	Hr.	$	$
	Bricklayer (Mason)	1,200	Hr.	$	$
	Carpenter	4,500	Hr.	$	$
	Concrete Worker	1,000	Hr.	$	$
	Crane Mechanic	2,500	Hr.	$	$
	Drafter 1	200	Hr.	$	$
	Drywall Finisher/Taper	600	Hr.	$	$
	Drywall Installer/Lather	600	Hr.	$	$
	Electrician, Fire Alarm Systems	1,000	Hr.	$	$
	Electrician, High Voltage	2,000	Hr.	$	$
	Electrician	8,000	Hr.	$	$
	Electronics Technician	1,100	Hr.	$	$
	Elevator Mechanic	3,000	Hr.	$	$
	Engineer, Steam Stationary	160	Hr.	$	$
	Fire Sprinkler Technician	1,080	Hr.	$	$
	Front End Loader Operator	40	Hr.	$	$
	HVAC/R Mechanic	10,000	Hr.	$	$
	HVAC/R Technician	180	Hr.	$	$
	Insulator/Coveror	4,500	Hr.	$	$
	Laborer	2,150	Hr.	$	$
	Machinist, Precision	3,620	Hr.	$	$
	Machinist, Repairman	140	Hr.	$	$
	Mechanic, Calibration A	180	Hr.	$	$

BID SCHEDULE 5: OPTION PERIOD 3 - SEPTEMBER 1, 2003 Through AUGUST 31, 2004						
ITEM NO.	DESCRIPTION OF SERVICES/SUPPLIES	ANNUAL QUANTITY	UNIT		UNIT PRICE	TOTAL PRICE
	Mechanic, Calibration B	180	Hr.	$		$
	Mechanic, Equipment	360	Hr.	$		$
	Millwright, Maintenance	1,800	Hr.	$		$
	Operator, Boiler	180	Hr.	$		$
	Oxygen Cleaning Technician	3,080	Hr.	$		$
	Painter, Maintenance	4,000	Hr.	$		$
	Person, Utility	160	Hr.	$		$
	Pipefitter, Maintenance	4,000	Hr.	$		$
	Plant Technician	160	Hr.	$		$
	Power Equipment Operator, Crane	2,000	Hr.	$		$
	Rigger, Maintenance	12,000	Hr.	$		$
	Roofer	2,000	Hr.	$		$
	Sheet Metal Worker	700	Hr.	$		$
	Steamfitter	180	Hr.	$		$
	Water Treatment Analysis	180	Hr.	$		$
	Welder	800	Hr.	$		$
	Subtotal - Line Item 503.13.2					$
503-13.3	Overtime (Weighted Average Rate)	14,000	Hr.	$		$
	Total Price for Line Item 503					$
504	**MATERIAL TO SUPPORT UNIT PRICED LABOR:**					
	Material Fully Burdened Rate (Total Price is Fully Burdened Government Estimate)	$1,600,000			%	$
		Gov. Est.			(FBR)	
505	**EQUIPMENT TO SUPPORT UNIT PRICED LABOR:**					
	Equipment Fully Burdened Rate (Total Price is Fully Burdened Government Estimate)	$250,000			%	$
		Gov. Est.			(FBR)	
	Total Price for Indefinite Quantity Work					$
	(Line Items 502, 503, 504 and 505)					
506	**AWARD FEE**					$ 200,000
	TOTAL PRICE FOR OPTION PERIOD 3					$
	(Line Items 501, 502, 503, 504, 505 and 506)					

ATTACHMENT 3

PERFORMANCE EVALUATION PLAN

FOR

FACILITIES AND EQUIPMENT SUPPORT SERVICES
NASA Contract NAS1- 99000

NOTE: The names, titles and organization of the FPO and PEB Membership will be completed at award.

PERFORMANCE EVALUATION PLAN

FOR

NASA Contract NAS1-99000

Contents

I. Introduction

1. This plan covers the administration of the award fee provisions of NASA Contract NAS1-99000. The contract was awarded in accordance with the provisions of RFP No. 1-135-GI.2166.

2. The following matters, among others, are covered in the contract:

a. The contractor is required to provide facilities and equipment support services to the Langley Research Center.

b. The contract term, price, and award fee is specified in the Contract Schedule.

c. Only the price, not the award fee, is subject to equitable adjustments arising from changes or other contract modifications.

d. The award fee payable will be determined by the Fee Determination Official (FDO) in accordance with this plan.

e. Award fee determinations are not subject to the Disputes clause of the contract.

f. The FDO may unilaterally change the matters in this plan, as covered in Part V and not otherwise requiring mutual agreement under the contract, provided the contractor receives notice of the changes prior to the beginning of the evaluation period to which the changes apply.

II. Organizational Structure for Award Fee Administration

The following organizational structure is established for administering the award fee provisions of the contract.

1. Fee Determination Official (FDO)

a. The FDO is the _____.

b. Primary FDO responsibilities are:

(1) Determining the award fee earned and payable for each evaluation period as addressed in Part IV.

(2) Changing the matters covered in this plan as addressed in Part V.

2. Performance Evaluation Board (PEB)

a. The Chair of the PEB is _____. Voting members consist of:

b. The Chair may recommend the appointment of non-voting members to assist the Board in performing its functions. The following are non-voting members:

, Technical Coordinator

, Business Coordinator

, Secretary

c. Primary responsibilities of the PEB are:

(1) Conducting periodic evaluations of contractor performance and the submission of a Performance Evaluation Board Report (PEBR) to the FDO covering the PEB's findings and recommendations for each evaluation period, as addressed in Part IV.

(2) Considering changes in this plan and recommending those changes it determines appropriate for adoption by the FDO, as addressed in Part V.

3. Performance Monitors

a. Performance monitors will be assigned to each performance area to be evaluated. The assignment will be made by the PEB Chair, as addressed in Part IV.

b. Each performance monitor will be responsible for complying with the General Instructions for Performance Monitors, Attachment IV-B, and any specific instructions of the PEB Chair, as addressed in Part IV. Primary performance monitor responsibilities are:

(1) Monitoring, evaluating and assessing contractor performance in assigned areas.

(2) Periodically preparing a Performance Monitor Report (PMR) for the PEB , or others as appropriate;

(3) Recommending appropriate changes in this plan for consideration, as addressed in Part V.

III. Evaluation Requirements

The applicable evaluation requirements are attached as indicated below.

Requirement	Attachment
Evaluation Periods	III-A
Award Fee Evaluation Factors and Weighted Values	III-B
Evaluation Criteria for Award Fee Evaluation Factors	III-B.1
Grading Table	III-C

IV. Method For Determining Award Fee

A determination of the award fee earned for each evaluation period will be made by the FDO within 45 days after the end of the period. The method to be followed in monitoring, evaluating and assessing contractor performance during the period, as well as for determining the award fee earned or paid, is described below. Attachment IV-A summarizes the principal actions and schedules involved.

A. The PEB Chair will ensure a monitor is assigned for each performance evaluation factor or subfactor to be evaluated under the contract. Monitors will be selected on the basis of their expertise relative to prescribed performance area emphasis. Performance monitors may in turn request and obtain performance information from other units or personnel normally involved in observing contractor performance. The PEB Chair may change monitor assignments at any time without advance notice to the contractor. The PEB Chair will notify the contractor promptly of all such monitor assignments and changes.

B. Performance monitors will evaluate and assess contractor performance and discuss the results with the contractor as appropriate, in accordance with Attachment IV-B, entitled General Instructions for Performance Monitors, and any specific instructions and guidance furnished by the PEB Chair. Regularly scheduled monthly meetings will be conducted between appropriate Government oversight personnel and contractor management personnel in order to discuss all significant aspects of contract performance. These discussions will address strong and weak points, significant issues, problems and concerns, and any other matters deemed pertinent to effective contract performance.

C. Performance monitors will prepare and submit semi-annual Performance Monitor Reports (PMRs) to the Technical Coordinator in accordance with Attachment IV-B. These reports will address and fully substantiate strong/weak points, and all significant issues, problems and concerns that should be brought to the attention of the PEB.

D. The Technical Coordinator will consider the input reflected in the PMRs and compile a single PMR that addresses technical performance, and technical management to be presented to the PEB. This report will also reflect the Technical Coordinator's personal perspective based on contractor input, personal observations, and dialogue with appropriate Government and contractor personnel.

E. The Business Coordinator will simultaneously prepare a report for the PEB that addresses all aspects of business management, subcontracting performance and other pertinent matters.

F. The contractor shall also prepare and submit a written self-evaluation that addresses perceived strengths/weaknesses, significant issues, problems and concerns applicable to the period being evaluated.

G. After the end of each evaluation period, the PEB will meet to consider all the performance information it has obtained. The Technical Coordinator and Business Coordinator will discuss their reports as appropriate. Performance monitors and other Government personnel, as appropriate, will attend the meeting and participate in discussions. At the meeting, the PEB will summarize its preliminary findings and recommendations for coverage in the Performance Evaluation Board Report (PEBR).

H. The PEB may then meet with the contractor to discuss the board's preliminary findings and recommendations. As requested by the PEB Chair, the coordinators, performance

monitors and other personnel involved in the performance evaluation will attend the meeting and participate in discussions. At this meeting, the contractor will be given an opportunity to represent itself and dialog on its behalf. After meeting with the contractor, the PEB will consider the contractor's input and finalize its findings and recommendations for the PEBR.

I. The PEB Chair will prepare the PEBR for the period and submit it to the FDO for use in determining the award fee earned. The report will include an adjectival rating and a recommended performance score with supporting documentation. The contractor will be notified of the PEB evaluation and recommended rating and score. The contractor may provide additional information for consideration by the FDO. When submitting the PEBR, the PEB Chair will inform the FDO as to whether the contractor desires to present any matters to the FDO prior to award fee determination.

J. The FDO will consider the PEBR and discuss it with the PEB Chair and other personnel, as appropriate.

K. The FDO will consider the recommendations of the PEB, any information provided by the contractor, and other pertinent information in determining the amount of award fee earned for the period. The FDO's determination of the amount of award fee earned and the basis for this determination will be stated in the Award Fee Determination Report (AFDR).

L. The Contractor will be notified by the Contracting Officer (CO) of the FDO's determination.

V. Changes in Plan Coverage

A. Right to Make Unilateral Changes

Any matters covered in this plan not otherwise requiring mutual agreement under the contract, may be changed unilaterally by the FDO prior to the beginning of an evaluation period by timely notice to the contractor in writing. The changes will be made without formal modification of the contract.

B. Steps to Change Plan Coverage

The following is a summary of the principal actions involved in changing plan coverage.

Actions	(Schedule)
PEB drafts proposed change	Ongoing
PEB submits recommended changes through the CO to the FDO	15 workdays prior to end of current period
FDO notifies contractor through the CO of changes	Prior to the start of the applicable period

C. Method for Changing Plan Coverage

The method to be followed for changing the plan coverage is described below:

1. Personnel involved in the administration of the award fee provisions of the contract are encouraged to recommend plan changes with a view toward changing management emphasis, motivating higher performance levels or improving the award fee determination process. Recommended changes should be sent to the PEB for consideration and drafting.

2. Prior to the end of each evaluation period, the PEB will submit its recommended changes, if any, applicable to the next evaluation period for approval by the FDO with appropriate comments and justification.

3. Prior to the beginning of each evaluation period, the CO will notify the contractor in writing of any changes to be applied during the next period. If the contractor is not provided with this notification, or if the notification is not provided before the beginning of the next period, then the existing plan will continue in effect for the next evaluation period.

ATTACHMENT III-A
NASA Contract NAS1-99000

EVALUATION PERIODS

Period Number	Start Date	End Date
1	9-1-99	2-28-00
2	3-1-00	7-31-00
3	9-1-00	2-28-01
4	3-1-01	7-31-01
5	9-1-01	2-28-02
6	3-1-02	7-31-02
7	9-1-02	2-28-03
8	3-1-03	7-31-03
9	9-1-03	2-28-04
10	3-1-04	7-31-04

Maximum Available Award Fee for each period is shown in the Contract Schedule.

ATTACHMENT III-B
NASA Contract NAS1-99000

PERFORMANCE EVALUATION FACTORS AND WEIGHTED VALUES

The performance factors to be evaluated are identified below. The evaluation criteria for each factor are shown in Attachment III-B.1.

Factor No.	Brief Factor Identification	1st 6 Months of Each Contract Year	2nd 6 Months of First Contract Year	2nd 6 Months of Remaining Contract Years
1	Contract Management	65%	40%	40%
2	Safety Performance	35%	20%	20%
3	Subcontracting Plan and SDB Participation Performance	0%	20%	40%
4	ISO Compliance	0%	20%	0%

ATTACHMENT III-B.1
NASA Contract NAS1-99000

EVALUATION CRITERIA FOR PERFORMANCE

Factor No. 1 Contract Management

Factor Weight:	**1st 6 Months of Each Contract Year**	**65%**
	2nd 6 Months of First Contract Year	**40%**
	2nd 6 Months of Remaining Contract Years	**40%**

Description of Factor: The Management factor is used to reflect the degree to which the Contractor has exceeded the overall performance in support of the Technical and Business areas of the contract.

Basis or Standard for Measuring Performance:

1. Technical - Recognition and resolution of technical problems covering the total scope of the SOW including: effectiveness minimizing research facility down-time; responsiveness during fluctuating workload requirements in one or more areas of performance; ability to adjust to changes in priorities; ability of the Contractors Quality Control Program to identify and correct problems; and effectiveness of communication and cooperation with the Government.

2. Business - Recognition and resolution of business problems; effectiveness of integration and management of subcontract effort in all areas of the SOW; accountability and control of on-site Government Property; the extent quality, and timeliness of corporate level support and assistance provided to the local staff; and effectiveness of communication and cooperation with the Government.

Both coordinators will consider any other actions/issues which significantly contribute to or detract from effective management.

ATTACHMENT III-B.1
NASA Contract NAS1-99000

EVALUATION CRITERIA FOR PERFORMANCE

Factor No. 2 Safety

Factor Weight:	**1st 6 Months of Each Contract Year**	**35%**
	2nd 6 Months of First Contract Year	**20%**
	2nd 6 Months of Remaining Contract Years	**20%**

Description of Factor: The Safety Factor is used to reflect the Contractor's success in implementing and maintaining an effective safety program.

Basis or Standard for Measuring Performance: The effectiveness of the contractor's overall safety program will be evaluated. Areas to be considered are the company's emphasis on safety, the effectiveness of the safety organization, safety training, action taken to prevent accidents or safety violations, recognition of safety hazards/violations and remedial actions, and the timeliness and adequacy of required safety documentation. An analysis will be made of lost-time and other accidents, the number, types, duration of lost time, and the reasons for the accidents. An assessment will be made as to whether accidents represent isolated instances or are symptomatic of a contractor safety program deficiency. The accident trend and actions to prevent accidents will also be evaluated.

ATTACHMENT III-B.1
NASA Contract NAS1-99000

EVALUATION CRITERIA FOR AWARD FEE EVALUATION FACTORS

Factor No. 3 Subcontracting Plan and Small Disadvantaged Business (SDB) Participation

Factor Weight:	**1st 6 Months of Each Contract Year**	**0%**
	2nd 6 Months of First Contract Year	**20%**
	2nd 6 Months of Remaining Contract Years	**40%**

Description of Factor: This factor will be used to evaluate the Contractor's record in achieving the SDB Participation Target and the Small Business and Women-Owned Small Business Goals set forth in the contract.

Basis or Standard for Measuring Performance: The contractor has committed itself to try to award a certain percentage of the total price of this contract to SDB concerns in the Standard Industrial Classification (SIC) Major Groups as determined by the Department of Commerce (See H.17 of the contract). The Contractor has also committed itself to goals for subcontracting to Small Business concerns. (See Small, Small Business Subcontract Plan, Exhibit C of the contract).

The Contractor's record in achieving the SDB target and the Small Business Subcontracting goals will be evaluated annually. Any significant difference in the amount of actual Indefinite Quantity work vs. the amount assumed in developing the contract target and goal will be considered in this evaluation.

ATTACHMENT III-B.1
NASA Contract NAS1-99000

EVALUATION CRITERIA FOR AWARD FEE EVALUATION FACTORS

Factor No. 4 ISO Compliance

Factor Weight:	**1st 6 Months of Each Contract Year**	**0%**
	2nd 6 Months of First Contract Year	**20%**
	2nd 6 Months of Remaining Contract Years	**0%**

Description of Factor: This factor will be used to evaluate the Contractor's success in becoming ISO 9002 compliant within 9 months from the effective date of the contract.

Basis or Standard for Measuring Performance: The Contractor's compliance with the requirement of ANSI/ISO/ASQC Q9002-1994, within 9 months from the effective date of the contract will be evaluated in the second award fee evaluation during the first contract year only. The Quality System Manual and Quality System Procedures to be submitted by the Contractor will be considered in this evaluation.

ATTACHMENT III-C
NASA Contract NAS1-99000

GRADING TABLE

Adjectival Rating	Range of Performance Points	Description
Excellent	(100-91)	Of exceptional merit; exemplary performance in a timely, efficient and economical manner; very minor (if any) deficiencies with no adverse effect on overall performance.
Very Good	(90-81)	Very effective performance, fully responsive to contract; contract requirements accomplished in a timely, efficient and economical manner for the most part; only minor deficiencies.
Good	(80-71)	Effective performance; fully responsive to contract requirements; reportable deficiencies, but with little identifiable effect on overall performance.
Satisfactory	(70-61)	Meets or slightly exceeds minimum acceptable standards; adequate results; reportable deficiencies with identifiable, but not substantial, effects on overall performance.
Poor/Unsatisfactory	(60 and below)	Does not meet minimum acceptable standards in one or more areas; remedial action required in one or more areas; deficiencies in one or more areas which adversely affect overall performance.

Any factor/subfactors receiving a grade of poor/unsatisfactory (60 and below) will be assigned zero performance points for purposes of calculating the recommended award fee amount. The contractor will not be paid any award fee when the total award fee rating and score is "Poor/Unsatisfactory" (60 and below).

ATTACHMENT IV-A
NASA Contract NAS1-99000

ACTIONS AND SCHEDULES FOR AWARD FEE DETERMINATIONS

	Action	Schedule (Calendar Days)
1.	PEB Chair and members appointed.	Prior to contract start.
2.	PEB Chair appoints coordinators and monitors and informs Contractor.	Prior to contract start.
3.	Coordinators and monitors receive orientation and guidance.	Prior to contract start.
4.	Coordinators and monitors assess performance and discuss results with Contractor.	Ongoing
5.	Contractor submits self-assessment report to both Technical and Business Coordinators	NLT 15 days after end of each AF period
6.	Monitors submit individual Performance Monitor Reports (PMRs) to Technical Coordinator.	NLT 15 days after end of each AF period.
7.	Technical and Business Coordinators submit consolidated PMRs to PEB	NLT 25 days after end of each AF period.
8.	PEB meets and summarizes preliminary findings and position of PEBR.	NLT 30 days after end of each AF period.
9.	PEB may meet with contractor to discuss preliminary findings and positions.	NLT 32 days after end of each AF period.
10.	PEB establishes findings and recommendations for PEBR.	NLT 35 days after end of each AF period.
11.	PEB Chair submits PEBR to FDO.	NLT 40 days after end of each AF period.
12.	FDO considers PEBR and discusses it with PEB, as appropriate.	NLT 43 days after end of each AF period.
13.	FDO sends PEBR through CO to contractor.	NLT 45 days after end of each AF period.
14.	Payment made to contractor based on contract modification.	NLT 60 days after end of each AF period.

The PEB will establish lists of subsidiary actions and schedules as necessary to meet the above schedule.

ATTACHMENT IV-B
NASA Contract NAS1-99000

GENERAL INSTRUCTIONS FOR PERFORMANCE MONITORS

1. Monitoring and Assessing Performance

a. Performance monitors will prepare outlines of their assessment plans, discuss them with appropriate contractor personnel to assure complete understanding of the evaluation and assessment process.

b. Performance monitors will plan and carry out on-site assessment visits, as necessary.

c. Performance monitors will conduct all assessment in an open, objective and cooperative spirit so that a fair and accurate evaluation is obtained. This will ensure that the contractor receives accurate and complete information from which to plan improvements in performance. Positive performance accomplishments should be emphasized just a readily as negative ones.

d. Performance monitors will discuss assessments with contractor personnel, as appropriate, noting any observed accomplishments and/or deficiencies. This affords the contractor an opportunity to clarify possible misunderstandings regarding areas of poor performance and to correct or resolve deficiencies.

e. Performance monitors must remember that contacts and visits with contractor personnel are to be accomplished within the context of official contractual relationships. Monitors will avoid any activity or association which might cause, or give the appearance of, a conflict of interest.

f. Performance monitor discussions with contractor personnel are not to be used as an attempt to instruct, to direct, to supervise or to control these personnel in the performance of the contract. The role of each task area monitor is to monitor, assess and evaluate - <u>not manage the contractor's effort.</u>

2. Documenting Evaluation/Assessment

Evaluations and assessments conducted and discussions with contractor personnel will be documented as follows:

a. Performance monitors should maintain accurate records reflecting the substance of their significant interactions with contractor personnel. This will be extremely important in the event of any possible misunderstandings.

b. Detailed minutes of regularly scheduled monthly meetings will be prepared by the PEB secretary and maintained as part of the official file. Distribution will be made to appropriate Government and contractor personnel.

3. Evaluating/Assessment Reports

Monitors will prepare a formal Performance Monitor Report in accordance with the following instructions and submit it to the PEB.

a. Performance monitors must remain fully cognizant of the minimum requirements for acceptable performance as addressed in the contract SOW. Furthermore, performance monitors must maintain a working familiarity with the grading table as reflected in Attachment III-C for it is critical that the adjective ratings and grades be assigned in strict accordance with corresponding descriptions.

b. Performance monitors will prepare semi-annual Performance Monitor Reports (PMRs) and submit them to the technical coordinator for review and consolidation into a single PMR for the PEB. PMRs shall include an evaluation/assessment for each function contained within each respective functional area. Applicable strong/weak points, significant issues, problems, and concerns, and any other appropriate matters will be addressed. This will in turn be summarized and presented at the functional area level along with a recommended overall adjective rating and grade.

ATTACHMENT 4

BIDDERS LIST

The following Companies have notified the Government as having an interest in the FESS Solicitation. Companies that attended the Pre-Solicitation Conference are identified under Amendment No. 2 to the Draft RFP.

OMNI Corporation
2725 Broadbent NE, Suite B
Albuquerque, NM 87107
(505)341-1400

Johnson Controls
7315 North Atlantic Avenue
Cape Canaveral, FL 32920-3792
(407)784-7100

Fred W. Hanks Co.
25018 Lakeland Boulevard
Cleveland, Ohio 44132
(216)731-1774

Jones Technologies Enterprises, Inc.
P.O. Box 22128
Cleveland, Ohio 44122
(216)561-2772

EP&C Engineering Services
7441 Marvin D. Love Freeway, Suite 200
Dallas, Texas 75237
(972)780-8953

Capitol Technology, Inc.
5350 Shawnee Road, Suite 300
Alexandria, VA 22312-2317
(703)642-4600

Ronald Davis Trucking Service, Inc.
342 West Second Street
LaPlace, LA 70068
(504)652-6535

Analytical Services & Materials, Inc.
107 Research Drive
Hampton, VA 23666
(757)865-7093

Attn: Tom Dake
3380 W. 137th Street
Cleveland, Ohio 44111
DAKETHEMAN@aol.com

TECOM Incorporated
P.O. Box 26492
Austin, TX 78755-0492
(512)454-7966

Standard Calibrations, Inc.
1244B Executive Blvd, Suite 104
Chesapeake, VA 23320
(757)549-6534

Brown & Root Services Corporation
4100 Clinton Drive
Houston, Texas 77020-6299
(713)676-4822

LB&B Associates Inc.
9891 Broken Land Parkway, Suite 400
Columbia, MD 21046
(301)596-2440

CSI/AVS
412 Moody's Run
Williamsburg, VA 23185
(804)559-4274

Raytheon System Company
2555 Ellsmere Ave.
Norfolk, VA 23513
(757)852-2000

EG&G Langley, Inc.
P.O. Box 65612
Hampton, VA 23665
(757)864-2626

Diversified Technology & Services of Virginia Inc. (DTSV)
P.O. Box 12989
Newport News, VA 23612-2988
(757)873-0725

Sierra Lobo, Inc.
20525 Homestead Park Drive
Strongsville, Ohio 44136
(216)891-9128

DynCorp
2000 Edmund Halley Drive
Reston, VA 20191-3436
(703)264-9230

DynCorp
2361 Jefferson Davis Hwy.
Suite ML 111
Arlington, VA 22202
(703)413-8921

Holmes and Narver
P.O. Box 6240
Organge, CA 92613-6240
(714)567-2602

Space Mark, Inc.
5520 Tech Center Drive
Colorado Springs, CO 80919-2308
POC: Mile Wilson
(719) 264-4301

JWK International Corporation
7617 Little River Turnpike, Suite 800
Annandale, VA 22003-2689
(703) 750-0500

Mainthia Technologies, Inc.
17535 Rosebough Drive, Suite 200
Cleveland, OH
(440) 816-0202

Ameriko, Inc.
170 N. Fair Oaks Avenue
Pasadena, CA 91103-3639

Atlantic Ordnance & Gyro, Inc.
808 W. 44th Street
Norfolk, VA 23508
(757) 423-5595

bdSystems, Inc.
Control Dynamics Division
1980 N. Atlantic Avenue, Suite 315
Cocoa, FL 32931
(407) 784-9430

Call Henry, Inc.
306 Brevard Avenue
Cocoa, FL 32922
(407) 631-7320

Kay and Associates, Inc.
3820 N. Ventura Drive
Arlington Heights, IL 60004-78951
(800) 323-4181

Mainthia Technologies, Inc. (MTI)
17535 Rosbough Drive, Suite 200
Corporate Center of Middleburg Hts.
Cleveland, OH 44130
(440) 816-0202

Metrotec Associates, Inc.
1421 Air Rail Avenue
Virginia Beach, VA 23455
(757) 460-8800

Navarro Research and Engineering, Inc. (NRE)
Oak Ridge, TN
(423) 220-9650

PM Services Company
6830 Central Avenue, Suite D
St. Petersburg, FL 33707-1208
(813) 345-8300

Precision Resource Group
505 Canaveral Groves Boulevard
Cocoa, FL 32926
(407) 635-2000-2021

East, Inc.
14310 Sullyfield Circle
Suite 600
Chantilly, VA 20151-1629
(703) 263-0477

Griffin Services, Inc.
5755 Dupree Drive, NW Suite 220
Atlanta, GA 30327-4352
(770) 952-1479, ext. 225

ITT Federal Services Corporation
One Gateway Plaza
1330 Inverness Drive
P. O. Box 15012
Colorado Springs, CO 80910
(719) 574-5850, ext. 240

J. A. Jones Management Services, Inc.
6135 Park South Drive, Suite 250
Charlotte, NC 28210
(704) 553-6600

K & M Maintenance Services, Inc.
P. O. Box 488
Sumter, SC 29151-0488
(803) 775-2455

Global Crane Institute, Inc.
P. O. Box 593228
Orlando, FL 32859-3228
(407) 851-2300

This Section J attachments was released with the final RFP on February 10, 1999. This includes only revisions made to the Section J attachments that were released with the Draft RFP.

SECTION J: LIST OF ATTACHMENTS

Note: The numbering system used in these attachments is designed so that the number of the Attachment refers back to the Section it supports (i.e., J-C for Section C; J-H for Section H, etc.) and a category (i.e., J-C1 for category 1 - Inventory of Buildings, Structures, Equipment, and/or Systems; J-C2 for category 2 - Government Furnished Facilities; etc.). Each category (1, 2, etc.) consists of one or more attachments, numbered for that category and a specific subsection. (J-C6-25, for example, is the List of Required Reports for Fire Protection and Life Safety Systems supporting Subsection C.25 of Section C; and J-C17-22 represents the Cooling Tower Systems Chemical Treatment Requirements supporting Subsection C.22 of Section C).

The references at the beginning of an Attachment refer the user to the most applicable subsection or clause in Section C where the subject matter is discussed. Other clauses may be pertinent, but are not individually referenced. Attachments which have been revised for the final RFP release have been designated accordingly. For example: J-C1-28Arev has replaced J-C1-28A

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ATTACHMENT
NUMBER TITLE

ATTACHMENT NUMBER	TITLE
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J-C12	Computerized Maintenance Management System (CMMS) Maximo®
J-C13	Reference/Location Maps and Drawings
-23A	List of High and Low Voltage Electrical Distribution System Drawings - One Line Switching Diagrams/Main Substations
-23B	List of High and Low Voltage Electrical System Drawings – Unit Substations
-23C	List of High and Low Voltage Electrical Distribution System Drawings - Subsurface Utilities and Manhole Development Drawings
-24A	List of Drawings for Steam Distribution Systems
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J-C14-21	Roofing Inspection Schedule
J-C15-17	Corrosion Control Projects History
J-C16-22	HVAC Filter Sizes by Facility
J-C17-22rev	Cooling Tower Systems Chemical Treatment Requirements
J-C18	Water Treatment
-22Arev	Water Treatment - Closed Loop Chemical Requirements
-22B	Water Treatment - Closed Loop Chemical Consumption
-24	Water Treatment – Chemical Consumption for LaRC Boilers
J-C19-17rev	Corrosion Control and Coating Services Paint Schedule
J-C21	Requirements for Removing Snow and Ice
-27A	Requirements for Removing Snow and Ice – Inventory of Roads and Parking Lots
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ATTACHMENT NUMBER	TITLE
J-C30rev	SPECSINTACT Table of Contents
J-C33	Equipment Procurement Clauses and In-Service and Acceptance Criteria
J-H1rev	Directives/ Reference Manuals/Publications
J-TOCrev	Table of Contents, Section J

ATTACHMENT J-2

ACRONYMS

A	Annual
ADA	Americans with Disabilities Act
ANSI	American National Standards Institute
ASME	American Society of Mechanical Engineers
ASTM	American Society of Testing and Materials
AZMM	Assistant Zone Maintenance Managers
BHMA	Building Hardware Mfg'ers Assn.
CM	Configuration Management
CMMS	Computerized Maintenance Management System
CMTS	Chemical Materials Tracking System
CNS	Change Notification Sheet
CO	Contracting Officer
COB	Close Of Business
CoF	Construction of Facilities
COTR	Contracting Officer's Technical Representative
D5	Daily (5 Days Per Week)
D7	Daily (7 Days Per Week)
DDC	Direct Digital Controls
ECC	Emergency Communication Center
EMCS	Energy Monitoring and Control System
EPA	Environmental Protection Agency
FBR	Fixed Burden Rate
FCA	Facility Condition Assessment
FIFRA	Federal Insecticide, Fungicide And Rodenticide Act
FMS	Functional Management System
FPT&M	Fixed Price Time and Materials
FY	Fiscal Year
GFF	Government Furnished Facilities
GFM	Government Furnished Material
IAGP	Installation Accountable Government Property
IDIQ	Indefinite Delivery Indefinite Quantity
IQ	Indefinite Quantity
LAPG	Langley Procedures and Guidelines (New title for handbooks which will be implemented in FY 1999.
LaRC	Langley Research Center
LHB	Langley Handbook (Present title for LaRC procedures and guidelines.)
M	Monthly
M&R	Maintenance And Repair
MWS	Monthly Work Schedule
NACE	National Association of Corrosion Engineers
NASA	National Aeronautics and Space Administration

NEC	National Electric Code
NFPA	National Fire Protection Association
NRCA	National Roofing Contractors Association
OEM	Original Equipment Manufacturer
OSPS	Office Of Security And Public Safety
PCB	Polychlorinated Biphenyl
PGM	Programmed Maintenance
PM	Preventive Maintenance
PSDI	Project Software Development Inc.
PT&I	Predictive Testing & Inspection
PWS	Performance Work Statement
Q	Quarterly
QA	Quality Assurance
QAE	Quality Assurance Evaluator
QC	Quality Control
RCM	Reliability Centered Maintenance
RCRA	Resource Conservation and Recovery Act
RIQAL	Receipt Inspection Quality Assurance Laboratory
ROI	Replacement of Obsolete Items
RTF	Run To Failure
Sa	Semiannual
SA	Subcontract Administration
SM	Semimonthly
SSPC	Steel Structures Painting Council
TC	Trouble Calls
TRL	Technical Reference Library
UCS	Utilities Control System
UPS	Uninteruptable Power Supply
VAV	Variable Air Volume
W	Weekly
WSR	Work Service Request
2W	Twice Weekly
3W	Three Times Weekly
ZMM	Zone Maintenance Manager

ATTACHMENT J-C1-23C

Portable Generator Inventory

ID No.	Rating	Output Voltage / Current	Fuel	Manufacturer	Comments
NA-1586	80KW / 100KVA	208/120 Volts / 278 Amps, 480/277 Volts / 120 Amps	Diesel	Kohler	Portable
NA-1853	5KW	115 Volts / 43.3 Amps, 230 Volts / 21.7 Amps	Gas	Sears	Portable
NA-1854	105KW / 131KVA	208/120 Volts / 364 Amps, 416 Volts / 182 Amps	Diesel	Caterpillar	Portable
NA-1855	105KW / 131KVA	208/120 Volts / 364 Amps, 416 Volts / 182 Amps	Diesel	Caterpillar	Portable
NA-1856	8KW / 8KVA	120 Volts / 66 Amps, 240 Volts / 33 Amps	Diesel	Groban	Portable
ECN 059541	2KVA	120 Volts / 16.7 Amps, 12 Volts DC / 8.3 Amps	Gas	Honda	Portable
ECN 1258503	6KVA	120 Volts 50 Amps, 240 Volts / 25 Amps	Gas	Honda	Portable

Attachment J-C1-28A Master File for Nylon and Steel Slings		
Facility	**Nylon**	**Steel**
582A	4	
583	13	
648	41	13
720B	5	11
1146	19	5
1148	17	9
1152	1	
1160	5	6
1166		1
1202	4	
1205	4	
1206	2	
1208	23	9
1212C	18	7
1215		2
1218A	2	3
1220	7	
1221	8	15
1221A	14	
1221B	14	2
1221C	35	4
1225	34	3
1229A	2	
1232A	29	2
1236	22	9
1237	7	
1238B	23	
1244	2	
1245	3	
1247B	10	2
1247D	11	12
1247E	8	1
1247 Scramjet	9	9
1250	64	11
1251	26	6

Facility	**Nylon**	**Steel**
1251A	12	2

Facility	Nylon	Steel
Attachment J-C1-28A		
Master File for Nylon and Steel Slings		
1261	4	4
1262	13	16
1265	20	18
1267	8	4
1267A	19	
1268A	10	
1275	20	13
1284B	2	
1288	7	12
1292	4	
1293B	5	9
1295		35
1297	20	11
FEC	12	
TOTAL	**642**	**266**

ATTACHMENT J-C1-30A

GENERAL DESCRIPTION OF WASTEWATER SYSTEM

The sanitary sewer system at LARC is composed of 4", 6", 8", 10", 12", 18", and 24", diameter cast iron , PVC and terra-cotta main lines. The piping system consist of approx. 36,000 linear feet of sewer mains which convey sewage through gravity lines and/or force mains utilizing thirty automatically operated sewerage pumping stations. High water alarms are installed in the pits and are monitored 24 hours a day by the duty officers in building #1215. All sewage is collected at building #1223 and pumped off the center through an 8"pvc forced main and insertion valve (which records total sewage flow and is read out in building #1215) to Hampton Roads District Commission line located at North Armistead Avenue, Route 172, Hampton, Virginia.

The main pumping station is in building #1223 and has 2 pumps that have the lead alternated weekly and one chopper. A primary and secondary power source have been installed to reduce the impact from a localized power failure. Provisions have been made to connect a portable pump directly into the forced main to evacuate the sump if all power was lost. A constant pressure of 60 PSI is maintained from building #1223 to the Hampton Road Sanitary System. A vent in the forced main, located in the field across from building #1233, must be bled at least monthly. The wastewater distribution system is shown on drawing LD 44,000 (See Attachment J-C13-30 for drawings). The following facility shall be operated maintained under this contract. Building 1223 sewage pumping station, and all sewage pumps in pits and facilities. The contractor is responsible for the entire system upto the HRSD shutoff valve located just outside of the perimeter fence, just north of Bldg. 1212-C. along side Route 172.

WASTEWATER DISTRIBUTION SYSTEM PIPING INVENTORY:

ITEM NO.	LIN FT	DIAMETER	MATERIAL - DESCRIPTION
1	1,975	4IN	PVC and Cast Iron Pipe
2	5,310	6 IN	Cast Iron and PVC Force Main
3	18,222	8IN	Cast Iron and PVC Terria Cotta Gravity Pipe and Force Main
4	6,700	10IN	Cast Iron Gravity Feed
5	1,625	12IN	Cast Iron Gravity Feed
6	150	15IN	Cast Iron Force Main
7	1,888	18IN	Cast Iron Pipe
8	450	24IN	Cast Iron Pipe

WASTEWATER DISTRIBUTION SYSTEM COMPONENTS INVENTORY:

ITEM NO.	QUANTITY	BUILDING NO.	DEVICE DESCRIPTION
1	1	1234	Zoeller Pump Submersible
2	1	1146	Zoeller Pump Submersible
3	2	1212C	Zoeller Pump Submersible
4	1	1250T#1	Zoeller Pump Submersible
5	1	1250T#2	Zoeller Pump Submersible
6	1	1101	Zoeller Pump Submersible
7	1	1181	Zoeller Pump Submersible
8	1	1209T	Zoeller Pump Submersible
9	1	1122	Zoeller Pump Submersible
10	2	1187	Zoeller Pump Submersible

ITEM NO.	QUANTITY	BUILDING NO.	DEVICE DESCRIPTION
11	1	1231	Zoeller Pump Submersible
12	1	1224T#1	Zoeller Pump Submersible
13	1	1237T	Zoeller Pump Submersible
14	1	1232T	Zoeller Pump Submersible
15	1	1244D	Zoeller Pump Submersible
16	2	1244	Jenning Sewage Ejector Air Evacuation Type System
17	2	1251	Submersible-Well pump co. Motors: Sterling Power system Inc. 5 HP.
18	2	1154	Weil Pump Co. Motor 3HP. 3PH.
19	2	1273	Paco Pump Co. Motor Reliance 1.5HP.
20	2	1199	Armstrong Pump Co. Motor Lincoln A.C. 3HP.
21	1	1189	Weil Pump Co. submersible
22	2	1214	Aurora/hydromatic Pumps Inc. Motor .60 HP.
23	2	1200	Weil Pump Co.
24	1	1224T#2	Aurora/Hydromatic Pumps Inc. Motor 1HP. 3PH.
25	2	1296	Aurora/Hydromatic Pumps Inc.
26	4	1293A	Weil Pumps Co. Motors Century Elec. Motor 1HP.
27	2	1293A	Weil Pumps Co. Motors General Electric Motor 1HP.
28	1	1244T	Aurora/Hydromatic Pumps Inc. Motor 3HP.
29	2	1291	Centrifugal-Yeoman Bros. Co. Motor General Electric 3HP.
30	2	1223	Chicago Pumps Motors Reliance 30 HP.
31	1	1223	Chopper Motor Baldor Industrial 1 HP.
32	1	720A	Air Evacuation Type System
33	1	645A	Zoeller Pump Submersible
34	150		Manholes
35	2	1215	Grease Trap-Cafeteria

Emergency Procedures

Rupture, bockage, or HRSD system problems that impact forced feed main.

1. Notify HRSD to get system isolation valve closed that is located outside of the perimeter fence near bldg. 1212-C
2. Contact CO
3. Notify Envrionmental Office, contain spill and apply lime to areas contiminated by sewage
4. Pump sewage in wet well in bldg. 1223 into abandoned chromate tanks using portable pump.
5. If more than a couple of hours is required to repair, make arrangements to transport sewage by tanker to Air Force se station until repairs are complete.
6. Pump sewage back into wet well after repairs are complete.
7. Clean tank and contaminated area as required by Envrionmental Office.

Loss of power or pumping capability

1. Hook-up portable generator or,
2. Connect emergency pump to pipe connection at rear of the bldg. 1223 and pump from the wet well directly into force

ATTACHMENT J-C3-5C
INSTALLATION ACCOUNTABLE GOVERNMENT PROPERTY
TRACKED BY NASA EQUIPMENT MANAGEMENT SYSTEM (NEMS)

The following tools and items of equipment will be made available for use by the Contractor as specified in Section C5. "GOVERNMENT FURNISHED PROPERTY AND SERVICES."

ECN	Item	Mfg.	Model	Yr. Mfg.
137443	Air Unit	Carrier	40RS024-010	86
803485	Alarm, Gas	MSA Res.	9210L-A-P	94
803486	Alarm, Gas	MSA Res.	9210L-A-P	94
803487	Alarm, Gas	MSA Res.	9210L-A-P	94
1426450	Alignment System	Comp. Systems	Ultraspec	95
463946	Ammeter	Esterline	S21019-2	81
428033	Analyzer, Oxygen	Gastech	OX80	82
428034	Analyzer, Oxygen	Gastech	OX80	83
428038	Analyzer, Oxygen	Gastech	OX80	82
429006	Analyzer, Oxygen	Gastech	OX80	83
59552	Bender, Pipe	Greenlee	915	89
847620	Bender, Pipe	Greenlee	555SB	89
847654	Bender, Pipe	Greenlee	88ICT	89
849431	Blower	Carling	20A	89
849432	Blower	Carling	20A	89
61809	Box, Resistance	Shalltronix	6860	89
470755	Brake, Hand	Dreis	50816	81
427727	Building, Portable	Porta-Fab	88	75
138060	Cabinet, Stor.	Clean Room Inc.	DGS3283	87
424652	Cabinet, Stor.	-	SS124	83
280095	Calculator	Cannon	CP1218D	85
428110	Calibrator, Trans.	Sci. Col.	1369C	76
471983	Camera, Still	Polaroid	SX70	77
258889	Camera, TV	Sony	AVC01	86
1740339	Cart, Filter Oil	Como	122	96
1742662	Cart, Filter Oil	Sharp	L085-1032AK-KN	97
1742663	Cart, Filter Oil	Sharp	L085-1032AK-KN	97
1742664	Cart, Filter Oil	Sharp	L085-1032AK-KN	97
1742665	Cart, Filter Oil	Sharp	L085-1032AK-KN	97
1742666	Cart, Filter Oil	Sharp	L085-1032AK-KN	97
1875638	Cart, Filter Oil	Sharp	L320AWKNZ	97
1875639	Cart, Filter Oil	Sharp	L320AWKNZ	97
1256854	Chamber, Temp.	Wyle	C106-3600	76
139918	Cleaner, Sewer	Elec. Eel	-	87
138473	Cleaner, Shoe	Ultra-Clean	2000VA1400	87
403470	Cleaner, Steam	Sioux	300Chief	83
533378	Cleaner, Tube	Goodway	Ram3	84

ECN	Item	Mfg.	Model	Yr. Mfg.
139359	Cleaner, Vacuum	Nilfisk	017916	87
549699	Cleaner, Vacuum	Nilfisk	GS82	84
1877489	Cleaner, Vacuum	Nilfisk	VT60	98
1424860	Cleaner, Wet Vac	Hepa Corp.	C81455-05	95
528712	Climber, Stair	New Design	E100	75
282250	Clinometer	Rank Prec.	TB121	85
1093121	Collector, Dust	Enviro. Cont.	ECSP18	92
1093122	Collector, Dust	Enviro. Cont.	ECSP18	92
1093123	Collector, Dust	Enviro. Cont.	ECSP18	92
1262846	Compactor, Drum	Strainrite	CCYC	94
56449	Compressor, Air	Bullard	EDP2	88
56450	Compressor, Air	Bullard	EDP2	88
1089019	Compressor, Air	Sullivan	375	91
1089035	Compressor, Air	Sullair	1300	91
1089920	Compressor, Air	Sullivan	375	91
1090338	Compressor, Air	Sullair	1300H150	91
1256061	Compressor, Air	Sullair	H1300-150DTC	93
1263359	Compressor, Air	Davey	12M125RPDD	94
1424610	Compressor, Air	Sullair	H1300-150DTC	93
268471	Compressor, Rotary	Ing. - Rand	RDL200	86
528722	Cond. Air, Trailer	Therm-Air	TME-10	63
1742755	Conditioner, Air	Topp	TRLR10	97
1742756	Conditioner, Air	Topp	TRLR10	97
1742757	Conditioner, Air	Topp	TRLR20	97
1742779	Conditioner, Air	Eng. Air	A/M 32C-5	96
53118	Container, Storage	Trailmobile	D36036	86
61202	Container, Storage	Trailmobile	-	89
139561	Container, Storage	Mil. Spec.	TN7012	87
144087	Container, Storage	Mid Atl.	-	87
144219	Container, Storage	-	-	87
259514	Container, Storage	-	-	86
847890	Container, Storage	Kawasaki	-	89
847891	Container, Storage	Kawasaki	KA150-2	89
1255517	Container, Storage	Adamson	-	93
1264202	Container, Storage	-	-	94
1739821	Container, Storage	-	-	96
1739822	Container, Storage	-	-	96
1873029	Container, Storage	-	-	97
1873030	Container, Storage	-	-	97
1089739	Controller, Mini	Doble	FZ010	91
1262271	Controller, Remote	Sci. Atl.	RTC1032B	94
284245	Controller, Temp.	Fenwal	80001-0	85
59565	Crane, Floor	Ruger	1P18A	89
1263737	Degreaser	Better Eng.	N200P	94

ECN	Item	Mfg.	Model	Yr. Mfg.
1262618	Detector, Gas	Gastech	SAFETNET 400	94
260239	Detector, Leak	UE Sys.	2000	86
1423501	Detector, Leak	Neovision	101	95
1431634	Detector, Leak	UE Sys.	UP2000	96
846683	Disk Drive Unit	HP	9153C	89
1085190	Disk Drive Unit	HP	C2213A	91
1085806	Disk Drive Unit	HP	C2213A	91
1086756	Disk Drive Unit	Imprimis	F300	91
1877409	Disk Drive Unit	Iomega	158298	98
1877412	Disk Drive Unit	Iomega	158298	98
1156450	Distillation Unit	Baron	MRR30LE	92
61606	Drill, Magnetic	Hougen	10915	89
1260542	Eliminator, Air	Brooks Ins.	SC20-4	94
1085195	Expander, In/Output	HP	98568A	91
1085196	Expander, In/Output	HP	98568A	91
57537	Fan Unit, Neg. Press.	Aero Amer.	AIR2000	88
141528	Fan Unit, Neg. Press.	Hepa Co.	AIR2000	87
1262866	Filter Unit	Negative Air	H1000V	94
1425786	Filter Unit	Velcon	T030A	95
1742393	Filter Unit	Sharp	L085-10916	97
1875754	Filter, Unit	Tri-Tool	206B	97
59541	Generator, Portable	Hunda	EX2200	89
284725	Generator, Portable	Datton	340143	81
1258503	Generator, Portable	Hunda	ES6500	93
428035	Guage, Thickness	Sonic Inst.	502	79
428036	Guage, Thickness	EG&G	5222	79
1088969	Ice Maker Machine	Manitowoc	600	91
527681	Indicator, Press.	Dresser	711	81
527682	Indicator, Press.	Dresser	711A	81
532064	Indicator, Press.	Dresser	711	81
1089737	Inst. Test Slave	Doble	F2410	91
1089738	Inst. Test, Conv.	Doble	F2500	91
1428239	Inst. Test, Conv.	Doble	F2250	96
139966	Lathe	Barber-Colman	12In	69
427601	Lathe, Engine	Springfield	S	64
138934	Lens, Motorized	Vicon Ind.	V16-160AC	87
1158414	Lift, Palet	Crown	20MT	92
849354	Lift, Personnel	Genie Ind.	PLC24	89
470789	Lockformer	Lockformer	20	81
1093124	Machine, Abrasive	Clemco	AVS50E	92
1743393	Machine, Beveling	Tri-Tool	206B	97
1878628	Machine, Clean	Graymills	TEMPEST	98
1156059	Machine, Cleaning	Graymill	800A	92
1258371	Machine, Cleaning	A-BEC Ind.	PBM16R	93

ECN	Item	Mfg.	Model	Yr. Mfg.
1878435	Machine, Milling	W.H. Brady	LC100K	98
55350	Machine, Milling	Harding	UM	63
427597	Machine, Milling	Kerney Trecker	122	79
1877485	Machine, Recovery	Flouro-Tech	3700	98
1877486	Machine, Recovery	Flouro-Tech	3700	98
1256414	Machine, Wash	Labconco	44204FS	93
61624	Megger	Biddle	BM11	89
1260559	Meter, Fuel	Brooks, Inst.	B080ACAAAACDAAA	94
470740	Meter, Vibration	SPM Inst.	43A	79
61510	Monitor, Gas	Dynamation	1541	89
61511	Monitor, Gas	Dynamation	1541	89
61512	Monitor, Gas	Dynamation	1541	89
61513	Monitor, Gas	Dynamation	1541	89
1741765	Monitor, Gas	Ind. Sci.	LTX310	97
144510	Monitor, Tras.	Sci.-Atl.	1003B	88
258204	Monitor, TV	Matsushita	WV5470	86
G074764	Monitor, TV	Panasonics	CT2010Y	90
1084060	Monitor, TV	Sharp	XM2001	91
61640	Motor, Drive	Rigid	300	89
847808	Motor, Drive	Rigid	300	89
847611	Motor, Drive Pipe Thd	Rigid	300	89
20280	Multimeter	Fluke	77	89
21183	Multimeter	Fluke	23DNN	91
139706	Multimeter	Fluke	8060A	87
281152	Multimeter	Fluke	77	85
801852	Multimeter	Fluke	77	93
1610650	Multimeter	Yokogawa	C6611	98
1610651	Multimeter	Yokogawa	C6611	98
1877179	Multimeter	Simpson	26017	88
G076939	Multimeter	Fluke	8050A	91
1429584	Ohmmeter Digital	Biddle	247001	96
1877178	Oscilloscope	RCA	W033B	88
426357	Planer, Wood	Oliver	8In	46
1085792	Ploter, Graphics	HP	7550B	91
140385	Plotter, Graphics	HP	7550A	87
1741715	Plotter, Graphics	Calcomp Co.	24163-001	97
528688	Plow, Snow	Valk	SP75	82
144514	Power Supply	Star Micro.	AD8340	88
846276	Power Supply	Best Power	FC5KVA	89
1083976	Press, Drill	Wilton Co.	5816	91
1431859	Press, Drill	Milwaukee	4130-4D79	96
398784	Press, Hydraulic	Jet. Equip.	HP35	86
429812	Puller, Gear	Sealed Power	IPS5317	77
1425959	Puller, Power Cable	Greenlee	640	86

ECN	Item	Mfg.	Model	Yr. Mfg.
1086230	Pump, Air	Wilden	M2KT - TF	91
1089967	Pump, Air	Wilden	M4KT - TF	91
1876546	Pump, Centrifugal	Rupp	14C2F140	96
1876547	Pump, Centrifugal	Rupp	14C2F140	96
G075912	Pump, Diaphragm	Wilden	M15ST - TF	90
1159950	Pump, Gas	Teel Ind.	3P653	93
53801	Pump, Hydraulic	Greenlee	9060M3	88
61418	Pump, Liquid Transfer	Graco	218-320	89
61419	Pump, Liquid Transfer	Graco	218-320	89
61420	Pump, Liquid Transfer	Graco	218-320	89
144432	Pump, Liquid Transfer	Graco	6H733	88
1424861	Pump, Oil Filter	Schroeder	MFB2KW2K3-1-5	95
1424904	Pump, Oil Filter	Schroeder	MFB2KW2K3-1-5	95
1262847	Pump, Sewage	Eason	120EWB40	94
1260194	Pump, Spray	Graco	217-234	94
398696	Pump, Vacuum	Welch	1396	86
427508	Pump, Vacuum	Welch	1398	83
427735	Pump, Vacuum	Welch	1402B	83
1089033	Reclaimer, Refrigerant	Katy Ind.	RecoveryII	90
1423503	Reclaimer, Refrigerant	Katy Ind.	VR11	95
G076849	Reclaimer, Refrigerant	Katy Ind.	RecoveryII	91
1877487	Recorder, Signal	AM Probe	7PDM2AP	98
418640	Recorder, Strip Chart	Esterline	A601C	79
428116	Recorder, Strip Chart	Esterline	A601C	82
527680	Recorder, Strip Chart	Honeywell	153019	68
1257626	Recorder, Strip Chart	Yokogawa	375022-02	93
141917	Recorder, Video	Panasonic	AG-2200	87
1093120	Removal System	Sullair	1350	92
1093125	Removal System	Sullair	1350	92
1741658	Rescue System	WGM Safety	7A25243	97
429928	Room, Portable	Ind. Acou.	1050	75
55416	Sandblast Machine	Bowen Tools	FPRB600LB	88
55417	Sandblast Machine	Bowen Tools	FPRB600LB	88
1088962	Sandblast Machine	Schmidt Mfg.	101-0205	91
1088963	Sandblast Machine	Schmidt Mfg.	101-0205	91
1088964	Sandblast Machine	Schmidt Mfg.	101-0205	91
1088965	Sandblast Machine	Schmidt Mfg.	101-0205	91
1423493	Sandblast Machine	Univ. Equip.	365DC51	95
1090337	Sandblast System	-	MS4-25-1	91
426355	Sander, Disc	Oliver Mach.	34DSD	44
426360	Saw, Arbor	B&D	3558	75
424675	Saw, Band	Armstrong	Marvel8	73
424775	Saw, Band	JA Fay	940	69
426358	Saw, Band	Doall	1612-0	69

ECN	Item	Mfg.	Model	Yr. Mfg.
428094	Saw, Band	Grob	24In	74
463954	Saw, Band	Doall	ML	49
470758	Saw, Band	Armstrong	Marvel8	73
142885	Saw, Band	Continental	TF1-421	87
847812	Saw, Bench	Delta	34-44	89
61514	Saw, Masonry	Federal-Mogul	PS1421	89
426361	Saw, Miter	Oliver Mach.	88D	41
1262132	Saw, Table	Delta	34-790A	94
802346	Scanner	PSC Inc.	5317-3002	93
1158410	Scanner	HP	C1790A	92
1741716	Scanner	HP	HPC5117A	97
1255433	Scopemeter, Digital	Fluke	97	93
1877383	Server, Print	HP	J2591A	98
1877416	Server, Print	HP	J2591A	98
G075585	Set, Test	Siemens	PTS4	90
219651	Set, Test Relay	AVO	SR76A	85
847053	Set, Test Relay	AVO	35200	89
59134	Shower, Portable	Air Systems	S10	88
141529	Shower, Portable	Eroclean	-	87
528689	Snow Removal Unit	Western	PS75FTS	81
549570	Sprayer, Chemical	Rototec	800	84
55413	Sprayer, Paint	Speeflo	731-316	88
55415	Sprayer, Paint	Binks	98-405	88
527679	Stand, Hyd. Test	Ogden Tech.	7997KS	69
1423474	Stripper, Traffic Line	Graco	231132	94
472999	Surface Plate	Collins	48X96X12	66
258421	Swaging Machine	Eaton Co.	4350-00553	86
284716	Swaging Machine	Crane	R21935	67
527686	Swaging Machine	Enerpac	PEM2021	76
1091934	Tank Unit, Decon.	Fisher	-	92
1091935	Tank Unit, Decon.	Fisher	-	92
1091937	Tank Unit, Decon.	Fisher	-	91
1091938	Tank Unit, Decon.	Northland	-	91
1091939	Tank Unit, Decon.	Northland	-	91
1091940	Tank Unit, Decon.	Northland	-	91
1158284	Tank Unit, Decon.	Northland	-	92
1158285	Tank Unit, Decon.	Northland	-	92
1158286	Tank Unit, Decon.	Northland	-	92
1158287	Tank Unit, Decon.	Northland	-	92
1158288	Tank Unit, Decon.	Northland	-	92
1158350	Tank Unit, Decon.	Northland	-	92
143663	Terminal, DAS	Wyse Tech.	WY85	87
G074137	Terminal, DAS	Intecolor	8815	90
G074138	Terminal, DAS	Intecolor	8815	90

ECN	Item	Mfg.	Model	Yr. Mfg.
1877397	Tester, Ampere	Westinghouse	-	95
1877399	Tester, Ampere	Westinghouse	-	95
60176	Tester, Cir. Bkr.	GE	TVRMS	89
428086	Tester, Cir. Bkr.	Allis-Ch.	18-468-400-501	77
428088	Tester, Cir. Bkr.	GE	TAK-T52	80
1422519	Tester, Cir. Bkr.	AVO	CBB160	94
1877393	Tester, Cir. Bkr.	Westinghouse	-	95
1877394	Tester, Cir. Bkr.	GE	TTS1	95
1877395	Tester, Cir. Bkr.	GE	TVTS1	95
1877396	Tester, Cir. Bkr.	Cutler-Hammer	DS	95
1877398	Tester, Cir. Bkr.	Cutler-Hammer	DS	95
1877400	Tester, Cir. Bkr.	GE	TVRMS2	95
1877420	Tester, Cir. Bkr.	GE	TVRMS	95
527495	Tester, Dead Wt.	Mansfield	T130	74
527692	Tester, Dead Wt.	Amtech	R100	82
527693	Tester, Dead Wt.	Mansfield	T130	74
429884	Tester, Dielectric	Hipotronics	OC60A	78
1873821	Tester, Portable	Microcom	716607t701	97
429837	Tester, Voltage	Biddle	222060	72
G077895	Trailer, Clean Room	Scotsman	WNE00831	91
548148	Transfer Unit, Oil	Schroeder	716607T701	84
548149	Transfer Unit, Oil	Schroeder	-	84
35357	Transport, Tape	Colorado Mem.	250MB	95
38121	Transport, Tape	Andataco	X80CH31	96
140854	Transport, Tape	HP	7946A	87
140855	Transport, Tape	HP	7946A	87
58267	Typewriter	Panasonic	KX-E400	88
410182	Typewriter	Remmington	SR1018CP	78
420202	Typewriter	IBM	895	73
429036	Typewriter	IBM	895	73
429669	Typewriter	IBM	895	76
462565	Typewriter	IBM	895	77
470956	Typewriter	IBM	895	74
114014	Washer, Pressure	Graco	800087	87
1090336	Welding Machine	Miller Elec.	Bobcat2256	91
849554	Wrench, Hyd.	Unex	SST10	90
1084785	Wrench, Hyd.	Unex	HY1XL	90
G074948	Wrench, Hyd.	Unex	HY5XL	90
1423497	Wrench, Hyd. Pwr. Unit	Unex	SST10	91
849565	Wrench, Hyd. Torque	Unex	-	90
1425506	Wrench, Hyd. Torque	Unex	7	95
848552	Wrench, Torque	X-4 Tool	TD2000	89

NEMS GOVERNMENT FURNISHED MICRO COMPUTERS

ECN	Item	Mfg.	Model	Yr. Mfg.
ECN	Item	Mfg.	Model	Yr. Mfg.
1880042	COMPUTER	HP	MDLB180L	98
1880041	COMPUTER	HP	MDLB180L	98
1880040	COMPUTER	HP	SEDDS2DAT	98
1877473	COMPUTER	DTK CO	-	98
1877472	COMPUTER	DTK CO	-	98
1877471	COMPUTER	DTK CO	-	98
1877470	COMPUTER	DTK CO	-	98
1877469	COMPUTER	DTK CO	-	98
1877468	COMPUTER	DTK CO	-	98
1877413	COMPUTER	DTK CO	Quinn 57	98
1877410	COMPUTER	DTK CO	Quinn 57	98
1877407	COMPUTER	DTK CO	Quinn 57	98
1875749	COMPUTER	DTK CO	512K	98
1875611	COMPUTER	Star Gate	123868	97
1743207	COMPUTER	DTK CO	200	97
1743096	COMPUTER	DTK CO	P166	97
1743095	COMPUTER	DTK CO	P166	97
1741705	COMPUTER	DTK CO	P166	97
1741704	COMPUTER	DTK CO	P166	97
1741703	COMPUTER	DTK CO	P166	97
1741702	COMPUTER	DTK CO	P166	97
1741701	COMPUTER	DTK CO	P166	97
1741700	COMPUTER	DTK CO	P166	97
1741699	COMPUTER	DTK CO	P166	97
1741698	COMPUTER	DTK CO	P166	97
1741697	COMPUTER	DTK CO	P166	97
1741696	COMPUTER	DTK CO	P166	97
1741695	COMPUTER	DTK CO	P166	97
1431861	COMPUTER	IQ Sys.	P100MHZ	96
1431860	COMPUTER	IQ Sys.	P100MHZ	96
1431571	COMPUTER	GMR	MMT-REM2000	96
1431570	COMPUTER	GMR	MMT-REM2000	96
1431554	COMPUTER	GMR	MMT-REM2000	96
1431553	COMPUTER	GMR	MMT-REM2000	96
1431552	COMPUTER	GMR	MMT-REM2000	96
1431551	COMPUTER	GMR	MMT-REM2000	96
1431550	COMPUTER	GMR	MMT-REM2000	96
1431548	COMPUTER	GMR	MMT-REM2000	96
1431547	COMPUTER	GMR	MMT-REM2000	96
1431545	COMPUTER	GMR	MMT-REM2000	96

ECN	Item	Mfg.	Model	Yr. Mfg.
1426104	COMPUTER	GEM	486DX4-100	96
1426051	COMPUTER	DTK CO	486DX/100	96
1424865	COMPUTER	Everex	386/SX	95
1423029	COMPUTER	Kehtron	DVCB01	94
1423026	COMPUTER	Kehtron	DVCB01	94
1422684	COMPUTER	NCR Corp.	9035	94
1263703	COMPUTER	COMPAQ	486/SX	94
1263702	COMPUTER	COMPAQ	486/SX	94
1263235	COMPUTER	Gateway 2000	CB486SX25	94
1263234	COMPUTER	Gateway 2000	4DX33	94
1263231	COMPUTER	Gateway 2000	4DX33	94
1262899	COMPUTER	COMPAQ	486SX	94
1258950	COMPUTER	Midwest	ELITE486	93
1257919	COMPUTER	Gateway 2000	MINI	93
1256062	COMPUTER	COMPAQ	PRO SIGNIA	93
1158411	COMPUTER	Gateway 2000	486/33	92
1157673	COMPUTER	DELL	53255SX	92
1092501	COMPUTER	Govt. Micro	ADS333	92
1088791	COMPUTER	Gateway 2000	386SX16	91
1877330	COMPUTER	DTK CO	EGG1	98
1877326	COMPUTER	CTK	EGG1	98
1877324	COMPUTER	CTK	EGG1	98
1086807	COMPUTER	HP	98574Y375	91
1085812	COMPUTER	HP	985744	91
1090091	COMPUTER	APPLE	M5780	91
1875761	COMPUTER	DTK CO	166	98
1875765	COMPUTER	CTK	EGG1	98
1875766	COMPUTER	CTK	EGG1	98
1878434	COMPUTER	DTK	Pentium	98

NEMS GOVERNMENT FURNISHED DISPLAY UNITS

ECN	Item	Mfg.	Model	Yr. Mfg.
1877479	DISPLAY UNIT	CTX Int.	EX900	98
1877478	DISPLAY UNIT	CTX Int.	VL700	98
1877477	DISPLAY UNIT	CTX Int.	VL700	98
1877476	DISPLAY UNIT	CTX Int.	VL700	98
1877475	DISPLAY UNIT	CTX Int.	VL700	98
1877474	DISPLAY UNIT	CTX Int.	VL700	98
1877414	DISPLAY UNIT	CTX Int.	DL700	98
1877411	DISPLAY UNIT	CTX Int.	DL700	98
1877408	DISPLAY UNIT	CTX Int.	DL700	98
1875612	DISPLAY UNIT	AOC	CM335MG	97

ECN	Item	Mfg.	Model	Yr. Mfg.
1743098	DISPLAY UNIT	ADC Int.	21HLR	97
1743097	DISPLAY UNIT	ADC Int.	21HLR	97
1743045	DISPLAY UNIT	Apple	Apple Vision 1710	97
1741712	DISPLAY UNIT	ADC Int.	21HLR	97
1741711	DISPLAY UNIT	ADC Int.	21HLR	97
1741710	DISPLAY UNIT	ADC Int.	21HLR	97
1741709	DISPLAY UNIT	ADC Int.	21HLR	97
1741708	DISPLAY UNIT	ADC Int.	21HLR	97
1741707	DISPLAY UNIT	ADC Int.	21HLR	97
1741706	DISPLAY UNIT	ADC Int.	21HLR	97
1741657	DISPLAY UNIT	CTX Int.	2085GM	97
1741656	DISPLAY UNIT	Apple	M2935	97
1740454	DISPLAY UNIT	Mag Tech.	DX1795	96
1430409	DISPLAY UNIT	Micron	15FGX	96
1264097	DISPLAY UNIT	Gateway 2000	C51776LE	94
1431863	DISPLAY UNIT	IQ Sys.	SVGA	96
1431862	DISPLAY UNIT	IQ Sys.	SVGA	96
1431582	DISPLAY UNIT	MAG Tech.	DX1795	96
1431581	DISPLAY UNIT	MAG Tech.	DX1795	96
1431580	DISPLAY UNIT	MAG Tech.	DX1795	96
1431579	DISPLAY UNIT	MAG Tech.	DX1795	96
1431578	DISPLAY UNIT	MAG Tech.	DX1795	96
1431576	DISPLAY UNIT	MAG Tech.	DX1795	96
1431575	DISPLAY UNIT	MAG Tech.	DX1795	96
1431574	DISPLAY UNIT	MAG Tech.	DX1795	96
1431573	DISPLAY UNIT	MAG Tech.	DX1795	96
1431572	DISPLAY UNIT	MAG Tech.	DX1795	96
1426049	DISPLAY UNIT	CTX Int.	CTX1562CLR	96
1423030	DISPLAY UNIT	NEC Sys.	5FGE	94
1423027	DISPLAY UNIT	NEC Sys.	5FGE	94
1422685	DISPLAY UNIT	NEC Sys.	JC17311VMA3	94
1263708	DISPLAY UNIT	CTX Int.	CTX1451	94
1263704	DISPLAY UNIT	CTX Int.	CTX1451	94
1263239	DISPLAY UNIT	HP	C1064A	94
1263233	DISPLAY UNIT	Gateway 2000	CS1776LE	94
1263232	DISPLAY UNIT	Gateway 2000	CS1776LE	94
1258951	DISPLAY UNIT	Imfotel	P766D	93
1257920	DISPLAY UNIT	Gateway 2000	CS1024NI2	93
1256063	DISPLAY UNIT	Tatung Co.	CM14SBS	93
1159291	DISPLAY UNIT	Viewsonics	RE1422	93
1158412	DISPLAY UNIT	Aamazing Tech.	CM8486TX	92
1157579	DISPLAY UNIT	Dell	VC10A	92
1157681	DISPLAY UNIT	Dell	VC10A	92

ECN	Item	Mfg.	Model	Yr. Mfg.
1155586	DISPLAY UNIT	Gateway 2000	PMV14VC	92
1091388	DISPLAY UNIT	Intel		92
1089973	DISPLAY UNIT	NEC	MULTISYNC4D	91
1088790	DISPLAY UNIT	Gateway 2000	PMV14VC	91
1087904	DISPLAY UNIT	NEC	JC2002VMA1	91
1877323	DISPLAY UNIT	CXT	VL700	98
1877325	DISPLAY UNIT	CXT	VL700	98
1877327	DISPLAY UNIT	CXT	VL700	98
1877331	DISPLAY UNIT	CXT	VL700	98
1086808	DISPLAY UNIT	HP	98785A	91
848064	DISPLAY UNIT	SONY	GDM1950	89
1085813	DISPLAY UNIT	HP	98785A	91
1875762	DISPLAY UNIT	CXT	VL500	98
1876577	DISPLAY UNIT	ADC Int.	21HLR	97
1875763	DISPLAY UNIT	CXT	VL700	98
1875764	DISPLAY UNIT	CXT	VL700	98
1875767	DISPLAY UNIT	CXT	VL500	98
1877384	DISPLAY UNIT	HP	AR3-1AV	98

NEMS GOVERNMENT FURNISHED PRINTERS

ECN	Item	Mfg.	Model	Yr. Mfg.
57028	PRINTER	EPSON	P82PA	88
57911	PRINTER	HP	2932A	88
59149	PRINTER	EPSON	FX80	87
61587	PRINTER	OKIDATA	GE8253A	89
61589	PRINTER	OKIDATA	GE8253A	89
61590	PRINTER	OKIDATA	GE8253A	89
61658	PRINTER	HP	2934A	89
140693	PRINTER	HP	2932A	87
140694	PRINTER	HP	2932A	87
144513	PRINTER	STAR MICRONICS	DP8340	88
280038	PRINTER	EPSON	FX80	85
533266	PRINTER	HP	2225C	85
802959	PRINTER	KROY	K2000	93
847681	PRINTER	OKIDATA	GE8253A	89
848997	PRINTER	BROTHER	HL8E	90
1085739	PRINTER	HP	33449A	91
1087204	PRINTER	MATSUSHITA	KX-P1124I	91
1088420	PRINTER	HP	CP33449A	91
1088970	PRINTER	OKIDATA	321	91
1155901	PRINTER	SEIKO	CH5500S	92

ECN	Item	Mfg.	Model	Yr. Mfg.
1158413	PRINTER	HP	33449A	92
1160410	PRINTER	EPSON	LX810P805A	93
1258248	PRINTER	Matsushita	KXP1624	93
1261155	PRINTER	HP	560C	94
1423028	PRINTER	EPSON	LQ870	94
1423031	PRINTER	EPSON	LQ870	94
1424905	PRINTER	OKIDATA	MICROLINE321	95
1741713	PRINTER	HP	HPTL6P	97
1743394	PRINTER	OKIDATA	321	97
1743395	PRINTER	OKIDATA	320	97
1875748	PRINTER	K-SUN	6G2001M	98
1875750	PRINTER	HP	890C	98
1877180	PRINTER	Brother	PT12B	94
1877382	PRINTER	HP	6P	98
1877415	PRINTER	HP	1P-C4213A	98
1878413	PRINTER	HP	6P	98
1878414	PRINTER	HP	6P	98
G074273	PRINTER	MATSUSHITA	KX-P1124	90
G076425	PRINTER	HP	33449A	90
G077504	PRINTER	NEC	CZ805A	90
G078439	PRINTER	CPT Corp.	LP8LPR130	90
G75570	PRINTER	EPSON	FX1050	90

ATTACHMENT J-C3-6

INCUMBENT CONTRACTOR OWNED VEHICLES AVAILABLE FOR PURCHASE

The following vehicles will be made available for Contractor purchase as specified in Section C5. "GOVERNMENT FURNISHED PROPERTY AND SERVICES."

ID No.	Description	Mfg.	Year - Model	Miles - 11/1/98	Depreciated Value- 5/31/99
101	Sedan	Ford	1989 Escort	38,570	$111.73
102	Sedan	Ford	1989 Escort	30,107	$111.73
103	Sedan	Ford	1989 Escort	18,923	$111.73
104	Sedan	Ford	1989 Escort	41,069	$111.73
105	Sedan	Ford	1989 Escort	27,723	$111.73
106	Sedan	Ford	1989 Escort	27,007	$111.73
107	Sedan	Ford	1989 Escort	32,626	$111.73
108	Sedan	Ford	1989 Escort	22,733	$111.73
109	Sedan	Ford	1989 Escort	27,670	$111.73
110	Sedan	Ford	1989 Escort	51,745	$111.73
111	Sedan	Ford	1989 Escort	27,789	$111.73
112	Sedan	Ford	1989 Escort	26,416	$111.73
197	Sedan	Ford	1991 Tempo	58,512	$158.68
198	Sedan	Ford	1991 Tempo	54,636	$158.68
113	Pickup	Ford	1989 Ranger	57,808	$119.43
114	Pickup	Ford	1989 Ranger	18,060	$119.43
115	Pickup	Ford	1989 Ranger	29,480	$119.43
116	Pickup	Ford	1989 Ranger	37,749	$119.43
117	Pickup	Ford	1989 Ranger	26,730	$119.43
118	Pickup	Ford	1989 Ranger	42,448	$119.43
119	Pickup	Ford	1989 Ranger	27,841	$119.43
120	Pickup	Ford	1989 Ranger	41,071	$119.43
121	Pickup	Ford	1989 Ranger	30,967	$119.43
122	Pickup	Ford	1989 Ranger	40,755	$119.43
123	Pickup	Ford	1989 Ranger	45,296	$119.43
124	Pickup	Ford	1989 Ranger	40,853	$119.43
125	Pickup	Ford	1989 Ranger	38,493	$119.43
126	Pickup	Ford	1989 Ranger	36,524	$119.43
127	Pickup	Ford	1989 Ranger	28,003	$119.43
128	Pickup	Ford	1989 Ranger	40,896	$119.43
176	Pickup	Ford	1989 F-350	41,101	$202.64
129	Pickup	Ford	1989 Ranger	29,882	$119.43
130	Pickup	Ford	1989 Ranger	48,556	$119.43
131	Pickup	Ford	1989 Ranger	36,641	$119.43

ID No.	Description	Mfg.	Year - Model	Miles - 11/1/98	Depreciated Value-5/31/99
132	Pickup	Ford	1989 Ranger	37,330	$119.43
133	Pickup	Ford	1989 Ranger	42,828	$119.43
134	Pickup	Ford	1989 Ranger	44,620	$119.43
135	Pickup	Ford	1989 Ranger	40,933	$119.43
136	Pickup	Ford	1989 F-250	17,076	$180.03
137	Pickup	Ford	1989 F-250	18,049	$180.03
138	Pickup	Ford	1989 F-250	20,597	$180.03
139	Pickup	Ford	1989 F-250	53,018	$180.03
140	Pickup	Ford	1989 F-250	33,885	$180.03
141	Pickup	Ford	1989 Econoline	44,813	$174.84
184	Pickup	Ford	1989 Ranger	40,183	$121.64
185	Pickup	Ford	1989 F-250	58,469	$183.64
186	Pickup	Ford	1989 Ranger	38,241	$121.64
142	Van, Utility	Ford	1989 Econoline	42,799	$174.69
143	Van, Utility	Ford	1989 Econoline	33,177	$174.69
144	Van, Utility	Ford	1989 Econoline	50,760	$174.69
145	Van, Utility	Ford	1989 Econoline	45,356	$174.69
146	Van, Utility	Ford	1989 Econoline	41,213	$174.69
147	Van, Utility	Ford	1989 Econoline	70,708	$174.69
148	Van, Utility	Ford	1989 Econoline	91,555	$174.69
149	Van, Utility	Ford	1989 Econoline	73,096	$174.69
150	Van, Utility	Ford	1989 Econoline	63,749	$174.69
151	Van, Utility	Ford	1989 Econoline	53,108	$174.69
152	Van, Utility	Ford	1989 Econoline	29,116	$174.69
153	Van, Utility	Ford	1989 Econoline	47,518	$174.69
154	Van, Utility	Ford	1989 Econoline	33,231	$174.69
155	Van, Utility	Ford	1989 Econoline	64,089	$174.69
156	Van, Utility	Ford	1989 Econoline	47,380	$174.69
157	Van, Utility	Ford	1989 Econoline	66,205	$174.69
158	Van, Utility	Ford	1989 Econoline	48,893	$174.69
159	Van, Utility	Ford	1989 Econoline	50,801	$174.69
160	Van, Utility	Ford	1989 Econoline	51,260	$174.69
161	Van, Utility	Ford	1989 Econoline	67,555	$174.69
162	Van, Utility	Ford	1989 Econoline	52,428	$174.69
163	Van, Utility	Ford	1989 Econoline	54,635	$174.69
164	Van, Utility	Ford	1989 Econoline	62,121	$174.69
165	Van, Utility	Ford	1989 Econoline	36,757	$174.69
166	Van, Utility	Ford	1989 Econoline	55,994	$174.69
188	Van, Utility	Ford	1989 Econoline	54,749	$177.94
189	Van, Utility	Ford	1989 Econoline	34,035	$173.99
193	Van, Utility	Ford	1976 Chassis	78,980	0.00
167	Van, Utility	Chevrolet	1988 Kurbmaster	43,095	$279.62

ID No.	Description	Mfg.	Year - Model	Miles - 11/1/98	Depreciated Value- 5/31/99
168	Van, Utility	Chevrolet	1988 Kurbmaster	90,061	$279.62
169	Van, Utility	Chevrolet	1988 Kurbmaster	61,564	$279.62
170	Van, Utility	Chevrolet	1988 Kurbmaster	30,285	$279.62
171	Van, Utility	Chevrolet	1988 Kurbmaster	33,952	$279.62
172	Van, Utility	Chevrolet	1988 Kurbmaster	41,667	$279.62
173	Van, Utility	Chevrolet	1988 Kurbmaster	33,139	$279.62
174	Van, Utility	Chevrolet	1988 Kurbmaster	34,012	$279.62
175	Van, Utility	Chevrolet	1988 Kurbmaster	32,663	$279.62
187	Van, Utility	Chevrolet	1988 Kurbmaster	33,032	$270.58
177	Flatbed	Ford	1989 F-700	17,890	$319.49
183	Flatbed	Ford	1989 F-Super Duty	20,158	$299.79
178	Flatbed	Ford	1989 F-700	30,198	$332.78
181	Crane	Link-Belt	1994	1,704	$52,911.46
182	Bucket Truck	GMC	1994 Top Kick	3,659	$15,705.10
180	Forklift	CAT	1989	2,058	$442.04
200	Pickup, Snow Removal	Chevrolet	1997 Silverado	8,624	$6,983.66
201	Pickup, Snow Removal	Chevrolet	1997 Silverado	9,955	$6,983.66
190	Dump, Stake	Ford	1989 F-450	29,688	$317.23
				TOTAL	**$97,911.11**

ATTACHMENT J-C3-6A

INCUMBENT CONTRACTOR VEHICLES NOT AVAILABLE FOR PURCHASE

The following list of vehicles is provided for information only. These are contractor owned vehicles which are not included in Section C.6.e.

Description	Mfg.	Yr./Model
Van, Cargo	Ford	82
Van	Dodge	86
Van	Chevrolet	87

ATTACHMENT J-C3-6B

RADIOS AND BEEPERS USED ON PREVIOUS CONTRACT

The following list of radios and receivers (beepers) are provided for information purposes only.

Quantity	Item	Mfg.	Model
1	BASE STATION	Motorola	L1475A
22	RADIO-HAND HELD	Motorola	H437
2	RADIO-HAND HELD	Motorola	P200
3	RADIO-HAND HELD	Motorola	H43RFU7120
1	RADIO-HAND HELD	Motorola	D43KXA7JA5BK
2	RADIO-HAND HELD	Motorola	P93YQT20A2A
1	RADIO-HAND HELD	Motorola	C73RXB3126B (Base)
2	RADIO-HAND HELD	Motorola	H995A
2	RADIO-HAND HELD	Motorola	H43SVU7120BN
3	RADIO-HAND HELD	Motorola	H43SVU7120AN
2	RADIO-HAND HELD	Motorola	H43AALL1110BN
2	RADIO-HAND HELD	Motorola	TS3JJA1900CK
2	RADIO-HAND HELD	Motorola	H43AAU11101BN
2	RADIO-HAND HELD	Motorola	H43AAU1110N
3	RADIO-HAND HELD	Motorola	P93YPC20A2AA
3	RADIO-HAND HELD	Motorola	H43SV67120AN
2	RADIO-HAND HELD	Motorola	H43SV67120BN
6	RADIO-HAND HELD	Motorola	H43AAU1110BN
1	RADIO-HAND HELD	Motorola	P93YPC20A2A
2	RADIO-HAND HELD	Motorola	H435VU7160N

RECEIVERS, RADIOS (BEEPERS) USED ON PREVIOUS CONTRACT

Quantity	Item	Mfg.	Model
4	RADIO RECEIVERS	Motorola	A0T3NC2468AC
3	RADIO RECEIVERS	Motorola	A0T3NC2468BC
6	RADIO RECEIVERS	Motorola	A0T3NC2468C
8	RADIO RECEIVERS	Motorola	PR 3000
1	RADIO RECEIVERS	Motorola	A03JC2468AA
3	RADIO RECEIVERS	Motorola	A03EBB2468AA
1	RADIO RECEIVERS	Motorola	348BXC23HP
1	RADIO RECEIVERS	Motorola	A03CJ2468AA
1	RADIO RECEIVERS	Motorola	A03GVC5961AA

Note: The Government will provide the existing radios and beepers for up to 120 days after contract start date.

ATTACHMENT J-C4-5

GOVERNMENT FURNISHED MATERIAL

Critical reserve items will be furnished initially as documented below and confirmed by an inventory in accordance with Section C paragraph C.5c. Disparities between the Quantity "On Hand" column and the "Minimum" column will be rectified (by the Gov.) before contract award or during above mentioned inventory

CRITICAL RESERVE ITEMS

Bldg. No.	Description	Manufacturer	Part/Model No.	Quantity	
				On Hand	Minimum
	Brushes				
648	Comp. Mtr. Exciter Gen, 19-239A	Helwig	LR-1	12	12
648	Comp. Mtr. Exciter Gen, 19-239B	Helwig	LR-1		
1212B	Exciter Generator For AT, 43-62D	Helwig	LR-1		
		Helwig	LR-3	6	0
1218	Exciter Generator #57 Set A	Helwig	LR-9	60	24
1235	Exciter Generator Set A, 58-4A	Helwig	LR-9		
1235	Generator Set B, 58-3A	Helwig	LR-9		
646	Elevator Hoist Drive Power, 13-33	Helwig	LR-12		
646	Tun V/F Gen. Model Pwr, 13-36	Helwig	LR-12	60	24
647	Elev Hoist Drive Motor, 12-164	Helwig	LR-12		
648	Emer Lube Drive Mtr, 19-455	Helwig	LR-12		
1258	51-24	Helwig	LR-12		
1247B	64-206	Helwig	LR-13	86	8
1212	C/S Set Gen. Model Pwr, 43-46B	Helwig	LR-14	307	320
1235	Drive Mtr. for Converter F, 58-7A	Helwig	LR-14		
1235	Set A Converter, 58-2A	Helwig	LR-14		
1235	Set A Converter, 58-5B	Helwig	LR-14		
1235	Set A Drive Mtr for Conv C, 58-5A	Helwig	LR-14		
1235	Set B Converter, 58-1A	Helwig	LR-14		
1235	Set B Drive Mtr for Conv G, 58-8A	Helwig	LR-14		
1235	Set B Generator, 48-1A	Helwig	LR-14		
1235	Set Drive Mtr. for Conv D, 58-6A	Helwig	LR-14		
12135	Set B Converter, 58-1B	Helwig	LR-14		
1212A	C/S Gen Set Mdl. Power, 43-49B	Helwig	LR-14		
1212A	V/S Dr Mtr. Mdl. Power, 43-50A	Helwig	LR-14		
1212B	V/F Drive Motor Mdl. Pwr, 43-45A	Helwig	LR-14		
1212	43-46B	Helwig	LR-14A		
1235	Drive Mtr. for Converter F, 58-7A	Helwig	LR-14A		
1235	Set A Converter, 58-2A	Helwig	LR-14A		
1235	Set A Converter, 58-5B	Helwig	LR-14A		
1235	Set A Drive Mtr Conv D, 58-6A	Helwig	LR-14A		

Bldg. No.	Description	Manufacturer	Part/Model No.	Quantity On Hand	Quantity Minimum	
1235	Set A Drive Mtr for Conv C, 58-5A	Helwig	LR-14A			
1235	Set B Converter, 58-1B	Helwig	LR-14A			
1235	Set B Drive Mtr for Conv G, 58-8A	Helwig	LR-14A			
1235	Set B Generator, 58-1A	Helwig	LR-14A	55	55	
1212A	C/S Gen. Set Mdl. Power, 43-49B	Helwig	LR-14A			
1212B	VIF Drive Motor Mdl. Power, 43-45A	Helwig	LR-14A			
1235	58-5	Helwig	LR-17			
1235	58-6	Helwig	LR-17			
1235	Set A Frequency Converter C, 58-5	Helwig	LR-17	147	150	
1235	Set B Frequency Converter F, 58-7	Helwig	LR-17			
1235	Set B Frequency Converter G, 58-8	Helwig	LR-17			
1212A	V/S Freq. Conv. Mdl Power, 43-50	Helwig	LR-17			
1212B	V/F Converter, 43-45	Helwig	LR-17			
644	Main Fan Dr. Mtr., 15-14	Helwig	LR-18	83	24	
1247D	Master Booster Gen., 66-262C	Helwig	LR-19			
		Helwig	LR-19	21	0	
1241	MG Set Generator, 61-18	Helwig	LR-20	16	8	
1241	A * B DII & DIII, 61-18B	Helwig	LR-20A			
1241	EA II	Helwig	LR-20A			
1241	EA II, 61-18A	Helwig	LR-20A	150	150	
		Helwig	LR-21	1011	0	
		Helwig	LR-21A	362	0	
		Helwig	LR-22	11	0	
648	Starting Mtr for Sync. Cond, 19-472A	Helwig	LR-31	85	42	
1146	Crane Lift Mtr. Test Section, 22-20	Helwig	LR-31			
1212A	Frequency Changer Gen, 43-78	Helwig	LR-31			
1247	Elevator Generator, 65-10B	Helwig	LR-32			
1247	Elevator Hoist Drive Motor, 65-10	Helwig	LR-32	92	32	
1251	63.333 HP Emer. Lube Oil Pp, 50-41A	Helwig	LR-32			
646	300 KW Gen. Drive Mtr, 13-4	Helwig	LR-34	72	30	
1251	MUA Comp. Drive Mtr., 50-49	Helwig	LR-34			
1251	Sync. Con. Pwr. Fact Cor 50-44	Helwig	LR-34			
1212A	C/S AC Gen. Set Drive, 43-63B	Helwig	LR-34			
1212B	Constant Speed Gen. Sync. 43-77A	Helwig	LR-34			
1212B	Buss & 1750 KW Gen. Exc,43-62C	Helwig	LR-37	93	16	
1212B	Exc. Gen. for 2250HP Mtr, 43-62B	Helwig	LR-40	61	40	
646	350 HP Synchronous Mtr, 13-4C	Helwig	LR-42			
646	Free Flight Generator, 13-4B	Helwig	LR-42	26	16	
		Helwig	LR-45	185	0	
647	Elevator Generator, 12-165B	Helwig	LR-46	65	32	
1146	DC Generator, 22-20A	Helwig	LR-46			
1241	LDIIB Current Limit Gen, 61-123	Helwig	LR-46			
1241	LDuC Generator Exciter, 61-122	Helwig	LR-46			

Bldg. No.	Description	Manufacturer	Part/Model No.	Quantity On Hand	Quantity Minimum
1241	LOIIIB Generator Exciter, 61-120	Helwig	LR-46		
1244	LD1A Current Limit Gen, 61-125	Helwig	LR-46		
1251	Emergency Lube Pump, 50-37A	Helwig	LR-46		
1251	Emergency Main Lube Pump, 50-38A	Helwig	LR-46		
1212	C/C Set Drive Motor, 43-46	Helwig	LR-49	19	32
1212	V/F Alternator Mdl. Power, 43-46A	Helwig	LR-49		
1212A	C/S AC Gen Mdl. Power, 43-49A	Helwig	LR-49		
1212A	C/S Set Dr. Mtr. Model Power, 43-49	Helwig	LR-49		
646	Variable Freq. Set Exciter, 13-36B	Helwig	LR-54	25	25
1212A	DC Generator Mdl Power, 43-48C	Helwig	LR-54		
1212	43-47B	Helwig	LR-55	70	70
1235	Set A Amplidye	Helwig	LR-55		
1235	Set A Amplidyne	Helwig	LR-55		
1235	Set A Amplidyne, 58-4E	Helwig	LR-55		
1235	Set B Amplidyne, 58-3B	Helwig	LR-55		
1235	Set B Amplidyne, 58-3C	Helwig	LR-55		
1235	Set B Converter H	Helwig	LR-55		
1244	400 Cycle Generator, 60-30B	Helwig	LR-55		
648	Bat Chgr MG Set Gen, 19-463	Helwig	LR-57	37	10
646	Va Freq. Gen. for Model, 13-35A	Helwig	LR-76	49	8
646	Generator 280HP Prop Mtr, 13-4A	Helwig	LR-121	25	25
646	Main Motor 13-25A	Helwig	LR-125	15	16
		Helwig	LR-126	48	0
		Helwig	LR-128	22	0
1241	61-19C	Helwig	LR-156	240	32
		Helwig	LR-161	20	0
1247	6600 PSL Compressor, 64-209A	Helwig	LR-177	5	10
1244	Drife Mtr Generator, 60-30C	Helwig	LR-193	21	10
1241	C/S A&B Sets, 61-19D	Helwig	LR-223	43	48
1241	C/S C & D Sets, 61-19A	Helwig	LR-223		
1241	C/S A&B Sets, 61-19D	Helwig	LR-224	39	48
1241	C/S C & D Sets, 61-19A	Helwig	LR-224		
1241	Synchronous Motor, 61-19	Helwig	LR-226	52	16
1244	400 Cycle Generator, 60-30A	Helwig	LR-226		
1241	#242 CPE Generator, 61-19B	Helwig	LR-227	27	8
1146	Tunnel Hoist Drive Mtr, 22-24	Helwig	LR-228	37	24
1251	Syn Con Starting Mtr 50-44C	Helwig	LR-228		
1212A	Generator Exciter, 43-63A	Helwig	LR-230	37	24
1212A	AC Generator Exciter, 43-63C	Helwig	LR-231	69	8
646	Amplidyne 300 KW Gen. 13-46	Helwig	LR-237	163	50
1212	#2 Amp Model Power, 43-47A	Helwig	LR-237		
1212	43-48A	Helwig	LR-237		
1241	AM/AI, 61-51	Helwig	LR-237		

Bldg. No.	Description	Manufacturer	Part/Model No.	Quantity On Hand	Quantity Minimum	
1241	AM/AII, 61-53	Helwig	LR-237			
1241	AM/AII, 61-54	Helwig	LR-237			
1241	AM/DII/DIII, 61-49	Helwig	LR-237			
1241	Buss Amplidyne, 61-52	Helwig	LR-237			
1241	Spare Amplidyne, 61-50	Helwig	LR-237			
646	Amplidyne 300 KW Gen. 13-40	Helwig	LR-238	36	50	
1212	#2 Amp Model Power, 43-47A	Helwig	LR-238			
1241	AM/AI, 61-51	Helwig	LR-238			
1241	AM/AII, 61-53	Helwig	LR-238			
1241	AM/AIII, 61-54	Helwig	LR-238			
1241	AM/DII/DIII, 61-49	Helwig	LR-238			
1241	Buss Amlidyne, 61-52	Helwig	LR-238			
1241	Spare Amplidyne, 61-50	Helwig	LR-238			
1218	Prop Main Drive Motor, 36-2S	Helwig	LR-239	16	16	
1218	Prop Main Drive Gen. Exc, 36-2B	Helwig	LR-240	0	8	
1218	Prop Main Drive Motor, 36-16	Helwig	LR-248	15	16	
1247E	#4 Compressor Drive Mtr., 67-91	Helwig	LR-257	10	20	
1247E	#5 Worth Compressor, 67-281	Helwig	LR-257			
1241	D III, 61-16A	Helwig	LR-281A	630	300	
1241	D III, 61-16B	Helwig	LR-281A			
1241	D-II, 61-15A	Helwig	LR-281A			
1241	D-II, 61-15B	Helwig	LR-281A			
1241	D I D Drive Motor, 61-17A	Helwig	LR-281B	428	300	
1241	D1A Drive Motor, 61-17D	Helwig	LR-281B			
1241	D1B Drive Motor, 61-17C	Helwig	LR-281B			
1241	D1C Drive Motor, 61-17B	Helwig	LR-281B			
1218	Generator Drive Motor, 40-35	Helwig	LR-286	26	70	
1235	Set A Generator Drive Motor, 58-2	Helwig	LR-286			
1235	Set B Converter F&G, 58-01	Helwig	LR-286			
1241	A I, 61-17	Helwig	LR-286			
1241	A III, 61-16	Helwig	LR-286			
1241	A-II, 61-15	Helwig	LR-286			
1247E	#1 Compressor Drive Mtr., 67-10	Helwig	LR-286			
1247E	#2 Compressor Drive Mtr., 67-19	Helwig	LR-286			
1247E	#3 Compressor Drive Mtr., 67-88	Helwig	LR-286			
648		Helwig	LR-303	130	130	
648	Main Prop. Drive Motor, 19-521	Helwig	LR-303			
646	Portable Variable Freq. Set, 13-29	Helwig	LR-305	0	8	
1146	#1 Main Drive Mtr., 22-144	Helwig	LR-306	160	130	
1146	#2 Main Drive Mtr., 22-136	Helwig	LR-306			
		Helwig	LR-308	4	0	
646	420 Cycle AC Generator, 13-39	Helwig	LR-313	0	8	
644	Main Fan Mtr. Tach., 15-14A	Helwig	LR-325	77	40	

Bldg. No.	Description	Manufacturer	Part/Model No.	Quantity On Hand	Quantity Minimum	
646	Cycle Con. Gen. Tach, 13-35B	Helwig	LR-325			
1212	Tach. Gen Model Power, 43-45D	Helwig	LR-325			
1235	Converter C Tach Gen, 58-5B	Helwig	LR-325			
1235	Converter D, 58-2I	Helwig	LR-325			
1235	Reference Volt Tach. Gen. 58-8B	Helwig	LR-325			
1235	Reference Voltage, 58-7B	Helwig	LR-325			
1235	Set A Converter C	Helwig	LR-325			
1235	Set B Conv G Gen. Tach. 58-1I	Helwig	LR-325			
1235	Set B Gen Tachometer, 58-1E	Helwig	LR-325			
1235	Tachometer Generator, 58-6B	Helwig	LR-325			
1241	A III, 61-16D	Helwig	LR-325			
1241	AII & AII, 61-47	Helwig	LR-325			
1241	AII Set 16/15A Shaft Tach Gen	Helwig	LR-325			
1241	D III, B Shaft	Helwig	LR-325			
1241	Generator Tach, 16-15B Shaft 61-15D	Helwig	LR-325			
1244	Generator Tachometer, 60-85A	Helwig	LR-325			
1244	Generator Tachomter, 60-85E	Helwig	LR-325			
1244	Landing Simulator, 60-109A	Helwig	LR-325			
1244	Landing Simulator, 60-109B	Helwig	LR-325			
1244	Landing Simulator, 60-164A	Helwig	LR-325			
1244	Landing Simulator, 60-164B	Helwig	LR-325			
1251	Falk Gear, 50-35C	Helwig	LR-325			
1251	Main Drive Shaft, 50-35B	Helwig	LR-325			
1221	40-96A	Helwig	LR-329	8	8	
1221	40-97A	Helwig	LR-330	8	8	
1235	Set A Reo Master C&D, 58-2G	Helwig	LR-332	28	24	
1235	Set A Speed Red Rheos, 58-2F	Helwig	LR-332			
1235	Set A. Rheostat Converter D, 58-2J	Helwig	LR-332			
1235	Set B Spd Reducing Rheos Conv G	Helwig	LR-332			
1235	Set B Spd Red Rheos Mtr 58-1G	Helwig	LR-332			
1235	Set B Speed Red Rhoes, 58-1E	Helwig	LR-332			
1241	70S/AII	Helwig	LR-332			
1241	70S/AII-AIII, 61-28	Helwig	LR-332			
1241	70SP/AI	Helwig	LR-332			
1241	70SV/AII, 61-29	Helwig	LR-332			
1241	Control Room, 61-45	Helwig	LR-332			
1235	Set A #1 MG Set	Helwig	LR-333	103	20	
1235	Set B #2 Amplidyne	Helwig	LR-333			
1230	420 Cycle MG Set, 47-365	Helwig	LR-334	29	30	
1230	47-363	Helwig	LR-334			
1230	Rm. 21 420 Cycle MG Set 47-364	Helwig	LR-334			
1230	Room 301, 47-366	Helwig	LR-334			
646	Portable Variable Freq. Set, 13-29A	Helwig	LR-339	25	10	

Bldg. No.	Description	Manufacturer	Part/Model No.	Quantity On Hand	Quantity Minimum
646	Generator Model Power, 15-10A	Helwig	LR-341	18	4
646	Generator Model Power, 15-13A	Helwig	LR-342	3	4
645	Spin Tunnel, 14-5	Helwig	LR-343	24	24
645	Prop Mtr. Tach. Generator,14-5A	Helwig	LR-344	50	16
		Helwig	LR-351	8	0
		Helwig	LR-352	25	0
646	400 Cycle Generator, 13-35	Helwig	LR-357	17	20
646	Elevator Generator, 13-34A	Helwig	LR-357		
647	Elevator Generator, 12-164A	Helwig	LR-357		
		Helwig	LR-359	48	0
1212	Elevator Hoist Drive Motor, 43-46	Helwig	LR-362	8	8
1212	Elevator Generator, 43-36	Helwig	LR-363	25	16
		Helwig	LR-366	34	0
1212		Helwig	LR-372	16	20
1232	35-36	Helwig	LR-372		
1232	Elevator, 35-37	Helwig	LR-372		
1268	Elevator Hoist Dr., Mtr, 70-90	Helwig	LR-373		
		Helwig	LR-374	24	0
1251	Main Drive Motor, 50-27	Helwig	LR-376	29	24
1146C	Boundry Layer, 22-180	Helwig	LR-377	144	150
1251	Main Drive Motor, 50-28	Helwig	LR-377A	0	80
		Helwig	LR-379	55	0
		Helwig	LR-380	44	0
1251	50-55A	Helwig	LR-382	31	16
1251	Emerg. Lube Pump, 50-98A	Helwig	LR-383	63	50
1251	Emerg. Oil Pump, 50-85A	Helwig	LR-383		
1251	#125 Battery Charger, 50-127A	Helwig	LR-384	100	16
1247E	#6 Compressor Drive Mtr, 67-294	Helwig	LR-424	9	18
648	8500 CFM Com. Drive Mtr, 12-235	Helwig	LR-428	6	6
648	Freon Comp. Drive Mtr., 19-217	Helwig	LR-429	0	24
648	Freon Comp. Drive Mtr., 19-223	Helwig	LR-429		
648	19-220	Helwig	LR-429		
1215A	110 PSI Air Comp Dr. Mtr, 41-11	Helwig	LR-437	22	8
1215A	41-11B	Helwig	LR-438	15	8
1244	2 MG Set Generator, 60-121A	Helwig	LR-448	15	20
1244	Underslung Carriage, 60-119A	Helwig	LR-448		
		Helwig	LR-450	22	0
1212C	DC Generator, 43-230	Helwig	LR-452	108	50
1212C	Main Prop Drive Motor, 43-238A	Helwig	LR-453	100	50
1212C	Main Prop Drive Motor, 43-238	Helwig	LR-454	98	100
1283		Helwig	LR-456	10	8
1236	Emer Gen. Exciter, 059-0009B	Helwig	LR-463	6	6
1236	Emergency Generator	Helwig	LR-464	0	4

Bldg. No.	Description	Manufacturer	Part/Model No.	Quantity On Hand	Quantity Minimum	
Misc.	Synchronous Motor	Helwig	LR-465	19	19	
1244	Dolly Drive Mtr, 60-164	Helwig	LR-468	0	60	
1244	Dolly Generator, 60-120A	Helwig	LR-468			
1244	Generator, 60-136A	Helwig	LR-468			
1244	NE Corner Simulator	Helwig	LR-468			
1244	NW Corner Simulator, 60-85B	Helwig	LR-468			
1244	SE Corner Simulator, 60-85C	Helwig	LR-468			
1244	SW Corner Simulator, 60-85D	Helwig	LR-468			
1244	Underslung Carriage, 60-109	Helwig	LR-468			
1244	2 MG Set, 60-121B	Helwig	LR-469	0	6	
648	Test Section Turn Table, 10-72A	Helwig	LR-470	0	8	
1283	MG Set Generator, 69-463	Helwig	LR-474	0	8	
646	Elevator Generator, 13-34B	Helwig	LR-475	0	0	
1236	100 GPM Scavenge Pump Dr. Mtr	Helwig	LR-476	0	6	
1236	Mn Dr Lube Pump Mtr, 059-109B	Helwig	LR-476			
647	Dynamic Bal. MG Set Gen, 12-189B	Helwig	TBD			
648	EE Building, 19-472B	Helwig	TBD			
648	EE Building, 19-477	Helwig	TBD			
648	Liquid Rheostat Pilot Mtr., 19-431	Helwig	TBD			
648	Rotorol Generator, 19-464A	Helwig	TBD			
648	Stand By Lube Oil Pump Mtr, 19-520	Helwig	TBD			
1212	AC Generator Portable, 43-73B	Helwig	TBD			
1212	Port. Var. Freq. Set Elect. C, 43-61A	Helwig	TBD			
1218	Prop Drive Motor, 36-2C	Helwig	TBD			
1236	Computer MG Set Gen. 059-0502	Helwig	TBD			
1236	Fan Brg. Oil Pump Dr. Mtr,059-108B	Helwig	TBD			
1236	Main Drive Mtr(Synchornous)059-107	Helwig	TBD			
1241	89M16I Cubical 261 Bsmt Mtr. Dr	Helwig	TBD			
1241	89M16II Cubical 265 Bsmt Mtr Dr	Helwig	TBD			
1241	89M4I Cubical 263 Bsmt AT Dr Con	Helwig	TBD			
1241	89M4II Cubical 267 Bsmt, 61-69	Helwig	TBD			
1244	400 Cycle Generator, 60-30A	Helwig	TBD			
1244	50KVA 400 Cycle Set, 60-30	Helwig	TBD			
1244	5KVA-400 CY, 60-159A	Helwig	TBD			
1247	Room 115	Helwig	TBD			
1251	Rheostat Drive Motor, 50-47	Helwig	TBD			
1251	Rheostat Drive Motor, 50-48	Helwig	TBD			
1283	MG Set Generator, 69-305A	Helwig	TBD			
1146C	#4&10" Valve Ctrl. Slope Tac, 22-198	Helwig	TBD			
1146C	2 Stdby. Oil Lift Pump Dr. Mtr 22-206	Helwig	TBD			
1146C	Drive Speed Regulator Tach., 22-198	Helwig	TBD			
1146C	Electrolite Pump Drive Mtr 22-187	Helwig	TBD			
1146C	Frt. Bearing Std. Lube Pump, 22-18 3	Helwig	TBD			

Bldg. No.	Description	Manufacturer	Part/Model No.	Quantity On Hand	Quantity Minimum	
1146C	Liquid Rheostate Drive Mtr, 22-187C	Helwig	TBD			
1146C	Rear Bearing Lube Pump Mtr 22-186	Helwig	TBD			
1146C	Rotortrol Generator, 22-192B	Helwig	TBD			
1212A	Amplifier Pilot Generator, 43-57A	Helwig	TBD			
1212A	Bull Rheostat Drive Motor, 43-61	Helwig	TBD			
1212A	C/S Generator Drive Motor, 43-63	Helwig	TBD			
1212A	DC Motor, 43-54	Helwig	TBD			
1212A	Freq. Changer Pilot Generator, 43-78B	Helwig	TBD			
1212A	V/S Supply to V/S Set Gen., 43-78A	Helwig	TBD			
1212B	AC Generator (portable) 43-73A	Helwig	TBD			
1212B	Bull Rhoestat Drive Mtr 43-111	Helwig	TBD			
1212B	C/S Set Rheostat Drive Mtr. 43-58	Helwig	TBD			
1212B	Freq. Changer Pilot Gen., 43-75B	Helwig	TBD			
1212B	Main Drive Motor, 43-510	Helwig	TBD			
1212B	Main Prop Drive Motor, 43-51	Helwig	TBD			
1212B	Pilot Generator, 43-60A	Helwig	TBD			
1212B	Pur. Facton Rheostat Dr., Mtr 43-110	Helwig	TBD			
1212B	Speed Cont. 1400HP Dr. Mtr., 43-71	Helwig	TBD			
1212C	400 Cycle Set Drive Mtr, 43-435C	Helwig	TBD			
1212C	400 Cycle Var. Freq Gen., 43-435B	Helwig	TBD			
1212C	Liquid Rheostat Probes Dr. Mtr 43-234	Helwig	TBD			
1212C	Scavenger Pump Drive Mtr, 43-240	Helwig	TBD			
1212D	Boundary Layer Drive, 43-415	Helwig	TBD			
1212D	Boundary Layer Drive, 43-416	Helwig	TBD			
1212D	Emergency Power AC Gen., 41-2	Helwig	TBD			
1251A	M-2 Synchronous Drive Mtr., 50-512	Helwig	TBD			
1251A	M-2 Synchronous Mtr., 50-504	Helwig	TBD			
1293B	400 Cycle, 62-87B	Helwig	TBD			
	Lead Cable Splice Kits					
LaRC	Three conductor, 8KV, ungrounded neutral, 1/0 AWG, concentric round, paper insulated,	G&W	308U01PLH	1	1	
LaRC	Single conductor, 8KV, ungrounded neutral, 4/0 AWG, concentric round, varnish cambric insulated, lead covered, shielded	G&W	108U04VCLH	6	6	
LaRC	Three conductor, 7.5KV ungrounded neutral or 15KV grounded neutral, 4/0 AWG, varnish cambric or paper insulated, lead covered, shielded	MAC	PLS3-240	2	2	

Bldg. No.	Description	Manufacturer	Part/Model No.	Quantity On Hand	Quantity Minimum	
LaRC	Three conductor, 35KV grounded neutral, 4/0 AWG, low pressure gas filled, lead cable	MAC	Type LS-GF	2	2	
LaRC	Three conductor, 8KV, ungrounded neutral, 250 kcmil, concentric round, paper insulated, lead covered, shielded	G&W	308U250PLH	4	4	
LaRC	Three conductor, 7.5KV ungrounded neutral or 15KV grounded neutral, 350 kcmil, shielded, varnish cambric or paper insulated, lead covered	MAC	PLS3-2350	1	1	
LaRC	Three conductor, 8KV, ungrounded neutral, 350 kcmil, concentric round, paper insulated, lead covered, shielded	G&W	308U350PLH	1	1	
LaRC	Three conductor, 15KV, grounded neutral, 350 kcmil, concentric round, paper insulated, lead covered, shielded	G&W	315G350PLH	1	1	
LaRC	Three conductor, 35KV grounded neutral, 350 kcmil, shielded, compound filled, lead cable	MAC	PLS3-5350	2	2	
LaRC	Three conductor, 35KV grounded neutral, 350 kcmil, low pressure gas filled, lead cable	MAC	Type LS-GF	2	2	
LaRC	Three conductor, 8KV, ungrounded neutral, 500 kcmil, concentric round, paper insulated, lead covered, shielded	G&W	308U500PLH	4	4	
LaRC	Three conductor, 7.5KV ungrounded neutral or 15KV grounded neutral, 500 kcmil, shielded, varnish cambric or paper insulated, lead cable	MAC	PLS3-2500	2	2	
LaRC	Three conductor, 600V - 5KV, 500 kcmil, unshielded, polymeric insulated, interlocking armored CLX or CCW, jacketed over armor, aluminum sleeve	MAC	SJRU-251	2	2	
LaRC	Single conductor, 8KV, ungrounded neutral, 750 kcmil, concentric round, varnish cambric insulated, lead covered, shielded	G&W	108U750VCLH	6	6	
LaRC	Three conductor, 7.5 KV ungrounded neutral or 15KV grounded neutral, 750 kcmil, varnish cambric or paper insulated, lead covered, shielded	MAC	PLS3-2750	2	2	
LaRC	Single conductor, 8KV, ungrounded neutral, 1000 kcmil, concentric round, varnish cambric insulated, lead covered, shielded	G&W	108U1000VCLH	4	4	

Bldg. No.	Description	Manufacturer	Part/Model No.	Quantity On Hand	Quantity Minimum	
LaRC	Single conductor, 8KV, ungrounded neutral, 1500 kcmil, concentric round, paper insulated, lead covered, shielded	G&W	108U1500PLH	2	2	
LaRC	Single conductor, 7.5 KV ungrounded neutral or 15KV grounded neutral, 1500 kcmil, shielded, varnish cambric or paper insulated, lead covered	MAC	PLS1-21500	2	2	
LaRC	Single conductor, 15KV, grounded neutral, 2000 kcmil, concentric round, varnish cambric insulated, lead covered, shielded	G&W	115G2000VCLH	1	1	
	Single conductor, 15KV, grounded neutral, 2000 kcmil, center insulated splicing sleeve, compact sector, paper insulated,	G&W	115G2000SPS4	2	2	
	Lead Sleeves for Cable Splices					
LaRC	3" X 14"			1	1	
LaRC	3" X 20"			1	1	
LaRC	3 1/2" X 16"			3	3	
LaRC	4" X 18"			1	1	
LaRC	4" X 36"			4	4	
LaRC	6' X 36"			2	2	
	25. After Cooler Rupture Disk	350 Ingersoll Rand		2	2	
	26. 1st Stage Suction Valve Gasket	350 Ingersoll Rand		32	16	
	27. 1st Stage Suction Valve Cover Gasket	350 Ingersoll Rand		32	16	
	28. 1st Stage Discharge Valve Gasket	350 Ingersoll Rand		32	16	
	29. 1st Stage Discharge Valve Cover Gask	350 Ingersoll Rand		32	16	
	30. 2nd Stage Suction Valve Gasket	350 Ingersoll Rand		16	8	
	31. 2nd Stage Suction Valve Cover Gaske	350 Ingersoll Rand		16	8	
	32. 2nd Stage Discharge Valve Gasket	350 Ingersoll Rand		16	8	
	33. 2nd Stage Discharge Valve Cover Gas	350 Ingersoll Rand		16	8	
	34. 3rd Stage Suction Valve Gasket	350 Ingersoll Rand		12	6	
	35. 3rd Stage Suction Valve Cover Gasket	350 Ingersoll Rand		12	6	
	36. 3rd Stage Discharge Valve Gasket	350 Ingersoll Rand		12	6	
	37. 3rd Stage Discharge Valve Cover Gas	350 Ingersoll Rand		12	6	
	38. Water Flow Switch	350 Ingersoll Rand		1	1	
	39. Vibration Switch	350 Ingersoll Rand		1	1	
	40. 1st Stage Suction Valve Plate	350 Ingersoll Rand		8	4	
	41. 1st Stage Suction Valve Seat	350 Ingersoll Rand		8	4	
	42. 1st Stage Discharge Valve Plate	350 Ingersoll Rand		8	4	
	43. 1st Stage Discharge Valve Seat	350 Ingersoll Rand		8	4	
	44. 2nd Stage Suction Valve Plate	350 Ingersoll Rand		4	2	
	45. 2nd Stage Suction Valve Seat	350 Ingersoll Rand		4	2	
	46. 2nd Stage Discharge Valve Plate	350 Ingersoll Rand		4	2	

Bldg. No.	Description	Manufacturer	Part/Model No.	Quantity On Hand	Quantity Minimum	
	47. 2nd Stage Discharge Valve Seat	350 Ingersoll Rand		4	2	
	48. 3rd Stage Suction Valve Plate	350 Ingersoll Rand		2	2	
	49. 3rd Stage Suction Valve Seat	350 Ingersoll Rand		2	2	
	50. 3rd Stage Discharge Valve Plate	350 Ingersoll Rand		2	2	
	51. 3rd Stage Discharge Valve Seat	350 Ingersoll Rand		2	2	
	52. 1st Stage Suction Valve Channel and Spring Set	350 Ingersoll Rand		8	4	
	53. 1st Stage Discharge Valve Channel and Spring Set	350 Ingersoll Rand		8	4	
	54. 2nd Stage Suction Valve Channel and Spring Set	350 Ingersoll Rand		4	4	
	55. 2nd Stage Discharge Valve Channel and Spring Set	350 Ingersoll Rand		4	4	
	56. 3rd Stage Suction Valve Channel and Spring Set	350 Ingersoll Rand		2	2	
	57. 3rd Stage Discharge Valve Channel and Spring Set	350 Ingersoll Rand		2	2	
	1. #1 Boiler Feedwater Control Valve Diaphram	Fisher 3X2"	Model # 667 E	1	1	
	2. #1 Boiler Feedwater Control Valve Packing Set	Fisher 3X2"	Model # 667 E	1	1	
	3. #1 Boiler Feedwater Control Valve Stem & Plug Assembly	Fisher 3X2"	Model # 667 E	1	1	
	4. #1 Boiler Feedwater Control Valve Cage	Fisher 3X2"	Model # 667 E	1	1	
	5. #1 Boiler Feedwater Control Valve Seat Ring	Fisher 3X2"	Model # 667 E	1	1	
	6. #1 Boiler Feedwater Control Valve Bonnet Gasket	Fisher 3X2"	Model # 667 E	1	1	
	7. #1 Boiler Feedwater Control Valve Top Trim Gasket	Fisher 3X2"	Model # 667 E	1	1	
	8. #1 Boiler Feedwater Control Valve Bottom Trim Gasket	Fisher 3X2"	Model # 667 E	1	1	
				1		
	1. #2 Boiler Feedwater Control Valve Diaphram	Fisher 21/2"	Model # 667 E	1	1	
	2. #2 Boiler Feedwater Control Valve Packing Set	Fisher 21/2"	Model # 667 E	1	1	
	3.#2 Boiler Feedwater Control Valve Stem & Plug Assembly	Fisher 21/2"	Model # 667 E	1	1	
	4. #2 Boiler Feedwater Control Valve Cage	Fisher 21/2"	Model # 667 E	1	1	

Bldg. No.	Description	Manufacturer	Part/Model No.	Quantity On Hand	Quantity Minimum	
	5.#2 Boiler Feedwater Control Valve Seat Ring	Fisher 21/2"	Model # 667 E	1	1	
	6. #2 Boiler Feedwater Control Valve Bonnet Gasket	Fisher 21/2"	Model # 667 E	1	1	
	7. #2 Boiler Feedwater Control Valve Top Trim Gasket	Fisher 21/2"	Model # 667 E	1	1	
	8. #2 Boiler Feedwater Control Valve Bottom Trim Gasket	Fisher 21/2"	Model # 667 E	1	1	
				1		
	1. #3 Boiler Feedwater Control Valve Diaphram	Honeywell 11/4" - 859104 2E20-1A1-19-PEN1-123	Model # 87001	1	1	
	2. #3 Boiler Feedwater Control Valve Packing Set	Honeywell 11/4" - 859104 2E20-1A1-19-PEN1-123	Model # 87001	1	1	
	3. #3 Boiler Feedwater Control Valve Stem & Plug Assembly	Honeywell 11/4" - 859104 2E20-1A1-19-PEN1-123	Model # 87001	1	1	
	4. #3 Boiler Feedwater Control Valve Cage	Honeywell 11/4" - 859104 2E20-1A1-19-PEN1-123	Model # 87001	1	1	
	5.#3 Boiler Feedwater Control Valve Seat Ring	Honeywell 11/4" - 859104 2E20-1A1-19-PEN1-123	Model # 87001	1	1	

Bldg. No.	Description	Manufacturer	Part/Model No.	Quantity On Hand	Quantity Minimum	
	6. #3 Boiler Feedwater Control Valve Bonnet Gasket	Honeywell 11/4" - 859104 2E20-1A1-19-PEN1-123	Model # 87001	1	1	
	7. #3 Boiler Feedwater Control Valve Top Trim Gasket	Honeywell 11/4" - 859104 2E20-1A1-19-PEN1-123	Model # 87001	1	1	
	8. #3 Boiler Feedwater Control Valve Bottom Trim Gasket	Honeywell 11/4" - 859104 2E20-1A1-19-PEN1-123	Model # 87001	1	1	
				1		
	1. #5 Boiler Feedwater Control ValveDiaphram	Copes-Vulcan 4"	9210-86355-1-1	1	1	
	2. #5 Boiler Feedwater Control ValvePacking Set	Copes-Vulcan 4"	9210-86355-1-1	1	1	
	3. #5 Boiler Feedwater Control ValveStem & Plug Assembly	Copes-Vulcan 4"	9210-86355-1-1	1	1	
	4. #5 Boiler Feedwater Control ValveCage	Copes-Vulcan 4"	9210-86355-1-1	1	1	
	5. #5 Boiler Feedwater Control ValveSeat Ring	Copes-Vulcan 4"	9210-86355-1-1	1	1	
	6. #5 Boiler Feedwater Control ValveBonnet Gasket	Copes-Vulcan 4"	9210-86355-1-1	1	1	
	7. #5 Boiler Feedwater Control ValveTop Trim Gasket	Copes-Vulcan 4"	9210-86355-1-1	1	1	
	8. #5 Boiler Feedwater Control Valve Bottom Trim Gasket	Copes-Vulcan 4"	9210-86355-1-1	1	1	
				1		
	1. Feed Pump Recirc Valve Diaphram	Fisher	Model #667 E	1	1	
	2. Feed Pump Recirc Valve Packing Set	Fisher	Model #667 ET	1	1	
	3. Feed Pump Recirc Valve Stem & Plug Assembly	Fisher	Model #667 ET	1	1	
	4. Feed Pump Recirc Valve Cage	Fisher	Model #667 ET	1	1	

Bldg. No.	Description	Manufacturer	Part/Model No.	Quantity On Hand	Quantity Minimum	
	5. Feed Pump Recirc Valve Seat Ring	Fisher	Model #667 ET	1	1	
	6. Feed Pump Recirc Valve Bonnet Gasket	Fisher	Model #667 ET	1	1	
	7. Feed Pump Recirc Valve Top Trim Gasket	Fisher	Model #667 ET	1	1	
	8. Feed Pump Recirc Valve Bottom Trim Gasket	Fisher	Model #667 ET	1	1	
				1		
	1. Steam Drum Vent #1 Boiler Diaphram	Fisher	657 EZ Size 11	1	1	
	2.Steam Drum Vent #1 Boiler Packing Set	Fisher	657 EZ Size 11	1	1	
	3. Steam Drum Vent #1 Boiler Stem & Plug Assembly	Fisher	657 EZ Size 11	1	1	
	4. Steam Drum Vent #1 Boiler Cage	Fisher	657 EZ Size 11	1	1	
	5. Steam Drum Vent #1 Boiler Seat Ring	Fisher	657 EZ Size 11	1	1	
	6. Steam Drum Vent #1 Boiler Bonnet Gasket	Fisher	657 EZ Size 11	1	1	
	7. Steam Drum Vent #1 Boiler Top Trim Gasket	Fisher	657 EZ Size 11	1	1	
	8. Steam Drum Vent #1 Boiler Bottom Trim Gasket	Fisher	657 EZ Size 11	1	1	
				1		
	1. Condensate to D.A. Tank Valve Diaphram	Fisher	657 EZ Size #4	1	1	
	2. Condensate to D.A. Tank ValvePacking Set	Fisher	657 EZ Size #5	1	1	
	3. Condensate to D.A. Tank Valve Stem & Plug Assembly	Fisher	657 EZ Size #6	1	1	
	4. Condensate to D.A. Tank Valve Cage	Fisher	657 EZ Size #7	1	1	
	5. Condensate to D.A. Tank Valve Seat Ring	Fisher	657 EZ Size #8	1	1	
	6. Condensate to D.A. Tank Valve Bonnet Gasket	Fisher	657 EZ Size #9	1	1	
	7. Condensate to D.A. Tank Valve Top Trim Gasket	Fisher	657 EZ Size #1	1	1	
	8. Condensate to D.A. Tank Valve Bottom Trim Gasket	Fisher	657 EZ Size #1	1	1	
				1		
	1. #1 & #2 Condensate Pump Discharge Valves Diaphram	Fisher	667 ET Size 3"	1	1	

Bldg. No.	Description	Manufacturer	Part/Model No.	Quantity On Hand	Quantity Minimum	
	4. #1 & #2 Coffin Pump Steam Control Valves Control Valve Seat	Leslie	CTHZN-2 Size	1	1	
	5. #1 & #2 Coffin Pump Steam Control Valves Control Valve Spring	Leslie	CTHZN-2 Size	1	1	
	6. #1 & #2 Coffin Pump Steam Control Valves Main Valve	Leslie	CTHZN-2 Size	1	1	
	7. #1 & #2 Coffin Pump Steam Control Valves Main Valve Spring	Leslie	CTHZN-2 Size	1	1	
	8. #1 & #2 Coffin Pump Steam Control Valves Main Valve Guide	Leslie	CTHZN-2 Size	1	1	
	9. #1 & #2 Coffin Pump Steam Control Valves Bottom Cap Gasket	Leslie	CTHZN-2 Size	1	1	
	10. #1 & #2 Coffin Pump Steam Control Valves Packing Set Bottom Cap	Leslie	CTHZN-2 Size	1	1	
	11. #1 & #2 Coffin Pump Steam Control Valves Top Spring Seat	Leslie	CTHZN-2 Size	1	1	
	12. #1 & #2 Coffin Pump Steam Control Valves Adjusting Spring	Leslie	CTHZN-2 Size	1	1	
	13. #1 & #2 Coffin Pump Steam Control Valves Bottom Spring Seat	Leslie	CTHZN-2 Size	1	1	
	14. #1 & #2 Coffin Pump Steam Control Valves Needle Valve	Leslie	CTHZN-2 Size	1	1	
	15.#1 & #2 Coffin Pump Steam Control Valves Body Gasket	Leslie	CTHZN-2 Size	1	1	
	16.#1 & #2 Coffin Pump Steam Control Valves Needle Valve Packing	Leslie	CTHZN-2 Size	1	1	
	17. #1 & #2 Coffin Pump Steam Control Valves Needle Valve (Side)	Leslie	CTHZN-2 Size	1	1	
	18.#1 & #2 Coffin Pump Steam Control Valves Connector Union Packing	Leslie	CTHZN-2 Size	1	1	
	19. #1 & #2 Coffin Pump Steam Control Valves Connector Union and Gasket	Leslie	CTHZN-2 Size	1	1	
	20. #1 & #2 Coffin Pump Steam Control Valves Diaphragm (Lower)	Leslie	CTHZN-2 Size	1	1	
	21. #1 & #2 Coffin Pump Steam Control Valves Top Cap Gasket	Leslie	CTHZN-2 Size	1	1	
	22. #1 & #2 Coffin Pump Steam Control Valves Port Hole Gasket	Leslie	CTHZN-2 Size	1	1	

Bldg. No.	Description	Manufacturer	Part/Model No.	Quantity On Hand	Quantity Minimum	
	23. #1 & #2 Coffin Pump Steam Control Valves Cylinder Liner	Leslie	CTHZN-2 Size	1	1	
	24. #1 & #2 Coffin Pump Steam Control Valves Piston Ring	Leslie	CTHZN-2 Size	1	1	
	25. #1 & #2 Coffin Pump Steam Control Valves Piston	Leslie	CTHZN-2 Size	1	1	
	26. #1 & #2 Coffin Pump Steam Control Valves Connector Nut	Leslie	CTHZN-2 Size	1	1	
				1		
	1. #1, 2 & 5 Boiler Gas Control Valves Diaphram	Fisher	Size 4"	1	1	
	2. #1, 2 & 5 Boiler Gas Control Valves Packing Set	Fisher	Size 4"	1	1	
	3. #1, 2 & 5 Boiler Gas Control Valves Stem & Plug Assembly	Fisher	Size 4"	1	1	
	4. #1, 2 & 5 Boiler Gas Control Valves Cage	Fisher	Size 4"	1	1	
	5. #1, 2 & 5 Boiler Gas Control Valves Seat Ring	Fisher	Size 4"	1	1	
	6. #1, 2 & 5 Boiler Gas Control Valves Bonnet Gasket	Fisher	Size 4"	1	1	
	7. #1, 2 & 5 Boiler Gas Control Valves Top Trim Gasket	Fisher	Size 4"	1	1	
	8. #1, 2 & 5 Boiler Gas Control Valves Bottom Trim Gasket	Fisher	Size 4"	1	1	
				1		
	1. #1 & #5 350/125 Reducing Stations Diaphram	Fisher	EWD Size 8" X	1	1	
	2. #1 & #5 350/125 Reducing Stations Packing Set	Fisher	EWD Size 8" X	1	1	
	3. #1 & #5 350/125 Reducing Stations Stem & Plug Assembly	Fisher	EWD Size 8" X	1	1	
	4. #1 & #5 350/125 Reducing Stations Cage	Fisher	EWD Size 8" X	1	1	
	5. #1 & #5 350/125 Reducing Stations Seat Ring	Fisher	EWD Size 8" X	1	1	
	6. #1 & #5 350/125 Reducing Stations Bonnet Gasket	Fisher	EWD Size 8" X	1	1	
	7. #1 & #5 350/125 Reducing Stations Top Trim Gasket	Fisher	EWD Size 8" X	1	1	
	8. #1 & #5 350/125 Reducing StationsBottom Trim Gasket	Fisher	EWD Size 8" X	1	1	
				1		

Bldg. No.	Description	Manufacturer	Part/Model No.	Quantity On Hand	Quantity Minimum	
	1. Cooling Water Pump Gasket Casing (2)		P/N 2584A	1	1	
	2. Cooling Water Pump Weat Ring (2)		P/N 1675B	1	1	
	3. Cooling Water Pump Impeller (2)		P/N 1129	1	1	
	4. Cooling Water Pump Impeller Key (2)		P/N 11A9B	1	1	
	5. Cooling Water PumpBolt-Impeller to Shaft (2)		P/N 119A2	1	1	
	6. Cooling Water Pump Washer (2)		P/N 3214	1	1	
	7. Cooling Water Pump Wear Ring (2)		P/N 1675A	1	1	
	8. Cooling Water Pump Packing (2)		P/N 2704	1	1	
	9. Cooling Water Pump Seal Cage (2)		P/N 2462	1	1	
	10.Cooling Water Pump Gland (2)		P/N 0975A	1	1	
	11. Cooling Water Pump Mechanical Seal (2)		P/N 1802	1	1	
	12. Cooling Water Pump Gland M.S. (2)		P/N 0975B	1	1	
	13. Cooling Water Pump Gasket M.S.G. (2)		P/N 2584B	1	1	
	14. Cooling Water Pump O-Ring (2)		P/N 20A11	1	1	
	15.Cooling Water Pump Gasket Set (2)		P/N 2584A	1	1	
	16. Cooling Water Pump Shaft (2)		P/N 2807	1	1	
	17. Cooling Water Pump Shaft Sleeve (2)		P/N 1895A	1	1	
	18. Cooling Water Pump Gasket (2)		P/N 2584C	1	1	
	19. Cooling Water Pump Lip Seals (2)		P/N 2796	1	1	
	20. Cooling Water Pump Bearings (2)		P/N 27A19	1	1	
	21. Cooling Water Pump Flinger (2)		P/N 0871	1	1	
	22.Cooling Water Pump Drive Key (2)		P/N 11A9A	1	1	
	1. Sump Pump Air Valve Assembly			2	1	
	2. Sump Pump Piston & Shaft Assembly			2	1	
	3. Sump Pump Diaphragm			6	3	
	4. Sump Pump Clamp Band			4	2	
	5. Sump Pump Small Clamp Bands			12	6	
	6. Sump Pump Valve Seats			12	6	

Bldg. No.	Description	Manufacturer	Part/Model No.	Quantity On Hand	Quantity Minimum	
	7. Sump Pump Valve Balls			6	3	
	8. Sump Pump Air Valve Gasket			6	3	
	9. Sump Pump 20mm Check Ball			25	10	
	10. Sump Pump O-Rings			12	6	
	11. Sump Pump Block Gasket			12	6	
	12. Sump Pump Snap Ring			12	6	
	1. Fuel Oil Pump O-Ring		Item #005	4	4	
	2. Fuel Oil Pump O-Ring		Item #006	2	2	
	3. Fuel Oil Pump O-Ring		Item #007	2	2	
	4. Fuel Oil Pump O-Ring/Gasket		Item #008	2	2	
	5. Fuel Oil Pump Truarc Ring		Item #013	4	4	
	6. Fuel Oil Pump Ball Bearing		Item #015	2	2	
	7. Fuel Oil Pump Mechanical Seal		Item #025	2	2	
	8. Fuel Oil Pump Gasket		Item #031	2	2	
	9. Fuel Oil Pump Gasket		Item #035	2	2	
	10. Fuel Oil Pump Gasket		Item #036	2	2	
	11. Fuel Oil Pump O-Ring		Item #044	2	2	
	12.Fuel Oil Pump Dyna Seal		Item #045	2	2	
	13.Fuel Oil Pump O-Ring		Item #046	2	2	
	1. Primary Suction Filter	110 Ingersoll	P/N 1X8258	4	4	
	2. Secondary Suction Filter	110 Ingersoll	P/N 1X8259	4	4	
	3. Oil Filter	110 Ingersoll	P/N 1X10642	2	2	
	4. Solenoid Valve	110 Ingersoll	P/N 1X9651	1	1	
	1. Condensate Pumps Impeller	Federal SSC		4	4	
	2. Condensate Pumps Impeller Key	Federal SSC		4	4	
	3. Condensate Pumps Casing Wearing Ring	Federal SSC		4	4	
	4. Condensate Pumps Casing Gasket	Federal SSC		4	4	
	5. Condensate Pumps Packing Set	Federal SSC		4	4	
	6. Condensate Pumps Flinger	Federal SSC		4	4	
	7. Condensate Pumps Bearing Lock Nut	Federal SSC		4	4	
	8. Condensate Pumps Bearing Lock Washer	Federal SSC		4	4	
	9. Condensate Pumps Outer Ball Bearing	Federal SSC		4	4	
	10. Condensate Pumps Thrust Collar	Federal SSC		4	4	
	11.Condensate Pumps Inner Ball Bearing	Federal SSC		4	4	

Bldg. No.	Description	Manufacturer	Part/Model No.	Quantity		
				On Hand	Minimum	
	12. Condensate Pumps Shaft	Federal SSC		2	2	
	13. Condensate Pumps Shaft Key	Federal SSC		2	2	
	14. Condensate Pumps Inner Stage Spacer	Federal SSC		2	2	
	15. Condensate Pumps Inner Stage Wearing Ring	Federal SSC		2	2	
	1. Feedwater Pumps Pump Deflector	Coffin	P/N 7476	2	2	
	2. Feedwater Pumps Impeller Inlet	Coffin	P/N 7478	2	2	
	3. Feedwater Pumps R.H. Wear Ring	Coffin	P/N 7482	2	2	
	4. Feedwater Pumps Diffuser Assembly	Coffin	P/N 7451-1	2	2	
	5. Feedwater Pumps O-Ring	Coffin	P/N 18658-30	2	2	
	6. Feedwater Pumps Impeller Hub Sleeve	Coffin	P/N 19810	2	2	
	7. Feedwater Pumps Wear Ring Sleeve	Coffin	P/N 19872	2	2	
	8. Feedwater Pumps Mechanical Seal	Coffin	P/N 21612-2	2	2	
	9. Feedwater Pumps Shim Kit	Coffin	P/N 21614	2	2	
	10. Feedwater Pumps L.H. Wear Ring	Coffin	P/N 101975	2	2	
	11.Feedwater Pumps Stator Bolt	Coffin	P/N 17218-4	8	8	
	12. Feedwater Pumps Nozzle Bolt	Coffin	P/N 6895	20	20	
	13. Feedwater Pumps Gasket	Coffin	P/N 19369	2	2	
	14. Feedwater Pumps Cotter Pin	Coffin	P/N 1189	4	4	
	15. Feedwater Pumps Bearings	Coffin	P/N 1187	4	4	
	16. Feedwater Pumps Turbine Wheel Key	Coffin	P/N 3517	4	4	
	17. Feedwater Pumps Turbine Shaft Gland	Coffin	P/N 3532	2	2	
	18. Feedwater Pumps Turbine Rotor Sleeve	Coffin	P/N 3534	2	2	
	19. Feedwater Pumps Turbine Deflector	Coffin	P/N 3536	2	2	
	20. Feedwater Pumps Impeller Key	Coffin	P/N 6653	6	6	
	21. Feedwater Pumps Cotter Pin	Coffin	P/N 6772	8	8	
	22. Feedwater Pumps Oil Ring	Coffin	P/N 3533	4	4	
	23. Feedwater Pumps Oil Ring Spacing Sleeve	Coffin	P/N 3535	4	4	
	24. Feedwater Pumps Shaft Nut	Coffin	P/N 9531	2	2	
	25.Feedwater Pumps Steam Strainer Gasket	Coffin	P/N 6933	2	2	

Bldg. No.	Description	Manufacturer	Part/Model No.	Quantity On Hand	Quantity Minimum	
	26. Feedwater Pumps Steam Strainer Gasket	Coffin	P/N 6922	2	2	
	27. Feedwater Pumps Balance Governor Steam Valve	Coffin	P/N 6755-2	2	2	
	28. Feedwater Pumps Gasket	Coffin	P/N 9760	2	2	
	29. Feedwater Pumps Gasket	Coffin	P/N 9766	2	2	
	30. Feedwater Pumps Gasket	Coffin	P/N 18658-25	2	2	
	31. Feedwater Pumps Shaft Assembly	Coffin	P/N 6686	2	2	
	32. Feedwater Pumps O-Ring	Coffin	P/N 18658-25	2	2	
	33. Feedwater Pumps O-Ring	Coffin	P/N 18658-26	2	2	
	34. Feedwater Pumps Turbine Shaft Gland Lockwasher	Coffin	P/N 3516	4	4	
	35. Feedwater Pumps Gasket	Coffin	P/N 18523	6	6	
	36. Feedwater Pumps Gasket	Coffin	P/N 4763-5	2	2	
	1. Feedwater Pumps Casing Ring	Worthington UNQ		8	8	
	2. Feedwater Pumps Stage Piece	Worthington UNQ		2	2	
	3. Feedwater Pumps Packing	Worthington UNQ		4 sets	4 sets	
	4. Feedwater Pumps Bread Down Blushing	Worthington UNQ		2	2	
	5. Feedwater Pumps Seal Cage	Worthington UNQ		2	2	
	6. Feedwater Pumps Elastic Seal Ring 27	Worthington UNQ		14	14	
	7. Feedwater Pumps Elastic Seal Ring 27 a	Worthington UNQ		2	2	
	8. Feedwater Pumps Diaphragm	Worthington UNQ		4	4	
	9. Feedwater Pumps Shaft w/Keys	Worthington UNQ		2	2	
	10. Feedwater Pumps 1st and 3rd Stage Impellers	Worthington UNQ		4	4	
	11. Feedwater Pumps 2nd and 4th Stage Impellers	Worthington UNQ				
	12. Feedwater Pumps Thrust Bearings	Worthington UNQ		4	4	
	13. Feedwater Pumps Line Bearings	Worthington UNQ		4	4	
	14. Feedwater Pumps Shaft Sleeve	Worthington UNQ		4	4	
	15. Feedwater Pumps Outer Shaft Nut	Worthington UNQ		4	4	
	16. Feedwater Pumps Water Shield	Worthington UNQ		4	4	
	17. Feedwater Pumps Bearing Nut	Worthington UNQ		2	2	
	18. Feedwater Pumps Bearing Lockwasher	Worthington UNQ		2	2	

Bldg. No.	Description	Manufacturer	Part/Model No.	Quantity On Hand	Quantity Minimum	
	19. Feedwater Pumps Distance Sleeve (Short)	Worthington UNQ		4	4	
	20. Feedwater Pumps Distance Sleeve (Long)	Worthington UNQ		2	2	
	21. Feedwater Pumps Oil Thrower	Worthington UNQ		2	2	
	22. Feedwater Pumps Oil Ring	Worthington UNQ		2	2	
	23. Feedwater Pumps O-Ring	Worthington UNQ		4	4	
	1. Condensate Pumps Impeller	Federal	Model CCV-10	6	6	
	2. Condensate Pumps Impeller Set Screws	Federal	Model CCV-10	6	6	
	3. Condensate Pumps Impeller Keys	Federal	Model CCV-10	6	6	
	4. Condensate Pumps Mechanical Shaft Seals	Federal	Model CCV-10	12	12	
	5. Condensate Pumps Casing Gasket	Federal	Model CCV-10	1	1	
	6. Condensate Pumps Flinger	Federal	Model CCV-10	6	6	
	1. Condensate Pumps Impeller	Federal	Model 7560-Z	6	6	
	2. Condensate Pumps Impeller Set Screws	Federal	Model 7560-Z	6	6	
	3. Condensate Pumps Impeller Keys	Federal	Model 7560-Z	6	6	
	4. Condensate Pumps Mechanical Shaft Seals	Federal	Model 7560-Z	12	12	
	5. Condensate Pumps Casing Gasket	Federal	Model 7560-Z	6	6	
	6. Condensate Pumps Flinger	Federal	Model 7560-Z	6	6	
	Boilers					
	1. Manhole Gaskets			12	12	
	2. Handhole Gaskets			24	24	
	3. Gage Glass Kits Jerguson			12	12	
	4. Gage Glass Kits Clark Reliance			4	4	
	5. View Port Glass			24	24	
	6. Pneumatic Actuator Kits			14	14	
	7. Asco Solenoid Valve Kits "for 98 valves"			12	12	
	8. Asco Solenoid Valves N/C			6	6	
	9. Asco Solenoid Valves N/O			2	2	
	10. Burner Diffusers			4	4	
	11. Feed Pipe Diffusers			8	8	
	12. Blue Ram Refactory Cement (100 lbs)			1	1	

Bldg. No.	Description	Manufacturer	Part/Model No.	Quantity On Hand	Quantity Minimum	
	13. Fisher Control Valve Kits			19	8	
	14. High Temperature Packing for doors (50 lbs)			1	1	
	15. Fire Brick			1	1 pallet	
	16. Opacity Meter Radio Tubes			8	8	
	17. Opacity Meter Light Bulbs			8	8	
	18. Ignitor Assemblies			6	6	
	19. Ignitor Transformers			2	2	
	20. Fuses .5 Amp.			24	12	
	21. Indicator Light Bulbs			24	12	
	22. Mercoid Switches			4	4	
	23. Bottom Blow Valve Kits			4	4	
	24. Burner Blast Checks			4	4	
	1. Suction Filters	110 Joy		1	1 Set	
	2. Suction Valves 1st Stage	110 Joy		6	3	
	3. Discharge Valves 1st Stage	110 Joy		6	3	
	4. Suction Valves 2nd Stage	110 Joy		6	3	
	5. Discharge Valves 2nd Stage	110 Joy		6	3	
	6. Piston Rod Packing 1st Stage	110 Joy		2 Sets	1 Set	
	7. Oil Scraper Rings 1st Stage	110 Joy		1	1	
	8. Piston Rod Packing 2nd Stage	110 Joy		1	1	
	9. Oil Scraper Rings 2nd Stage	110 Joy		1	1	
	10. Cylinder Lubricator Plunger Pumps	110 Joy		3	3	
	11. Cylinder Lubricator Sight Glass	110 Joy		3	3	
	12. Piston Rings 1st Stage	110 Joy		1	1	
	13. Piston Rings 2nd Stage	110 Joy		1	1	
	14. Head Gasket 1st Stage Top	110 Joy		2	2	
	15. Head Gaskets 1st Stage Bottom	110 Joy		2	2	
	16. Head Gasket 2nd Stage Top	110 Joy		2	2	
	17. Head Gasket 2nd Stage Bottom	110 Joy		2	2	
	18. Discharge Valve 1st Stage Springs	110 Joy		50	25	
	19. Discharge Valve 2nd Stage Springs	110 Joy		50	25	
	20. Suction Valve 1st Stage Springs	110 Joy		50	25	
	21. Suction Valve 2nd Stage Springs	110 Joy		50	25	
	22. Discharge Valve Shoes	110 Joy		100	100	
	23. Suction Valve Shoes	110 Joy		100	100	
	24. Suction Valve Plates 1st Stage	110 Joy		6	6 Sets	
	25. Discharge Valve Plates 1st Stage	110 Joy		6	6 Sets	
	26. Suction Valve Plates 2nd Stage	110 Joy		6	6 Sets	

Bldg. No.	Description	Manufacturer	Part/Model No.	Quantity On Hand	Quantity Minimum
	27. Discharge Valve Plates 2nd Stage	110 Joy		6	6 Sets
	28. Suction Valve 1st Stage Guard	110 Joy		6	6
	29. Discharge Valve 1st Stage Guard	110 Joy		6	6
	30. Suction Valve 1st Stage Seat	110 Joy		6	6
	31. Discharge Valve 1st Stage Seat	110 Joy		6	6
	32. Suction Valve 2nd Stage Guard	110 Joy		6	6
	33. Discharge Valve 2nd Stage Guard	110 Joy		6	6
	34. Suction Valve 2nd Stage Seat	110 Joy		6	6
	35. Discharge Valve 2nd Stage Seat	110 Joy		6	6
	36. Suction Valve Gasket	110 Joy		24	24
	37. Suction Valve Cover Gasket	110 Joy		24	24
	38. Discharge Valve Gasket	110 Joy		24	24
	39. Discharge Valve Cover Gasket	110 Joy		24	24
	40. Valve Cover Set Screw Gaskets	110 Joy		100	100
1223	**Sewage Pumping**				
	1. Complete Pump			2	2
	2. Impellers (LH)			2	2
	3. Impellers (RH)			2	2
	4. Drive Shaft			2	2
	5. Motor			1	1
1291	**Sewage Lift Station**				
	1. Drive Shaft			1	1
	2. Sleeve, 8" x 12"			2	2
	3. Split Sleeve, 8"			2	2
	4. 90" Elbow, 8" Gland			2	2
	5. 45" Elbow, 1/8" Gland			2	2
	6. S.S. Repair Clamp			2	2
	7. Saddle			2	2
	8. Transition Gasket, 8"			12	12
	9. 8" PVC Pipe			40'	40'

Pyrotronics Systems III

	Description	Part/Model	Quantity	Model
	Control Model	CP-31	2	
	Power Supply Model	PS-31	1	
	Control Model	CP-35	5	
	Power Supply Model	PS-35	2	
	Battery Model	BC-30	1	

Bldg. No.	Description	Manufacturer	Part/Model No.	Quantity On Hand	Quantity Minimum	
	Battery Model	BC-35	4			
	Zone Model	ZN-35-DS	9			
	Bell Model	AA-30u	3			
	Volt Meter Model	MM-30	2			
	Volt Meter Model	MM-35	3			
	Relay Model	SR-30	3			
		RR-35	1			
	Smoke detector	DI-3	50			
	Smoke detector	DI-B3	4			
	Smoke detector	DI-A3	4			
	Smoke detector base	DB-35	60			
	Switch Model	SM-30	2			
	Alarm Silence Model	SA-30	1			
	Zone Model	ZN-30	1			
	Zone Model	ZN-31	1			
	Pull Station	MS-151	5			
	Pull Station	MFS-4	15			
	Pull Station Box	MC-5	8			
	Bell	BDC-10	6			
	Bell	BDC-6	6			
	Edward					
	Smoke detector		8	6250B		
	Smoke detector base		8	6251B-001		
	Simplex					
	Smoke detector		10	2098-9576		
	Smoke detector base		7	2098-9637		
	Smoke detector base		5	2098-9536		
	Fenwall					
	Smoke detector		7	CPD-7021-263194		
	Nottfier					
	Smoke detector		7	CPX-551		
	Smoke detector		5	SDX-551M		
	Smoke detector		10	SDX-551TH		
	Heat detector		16	FDX-551R		

Bldg. No.	Description	Manufacturer	Part/Model No.	Quantity On Hand	Quantity Minimum
	Base		10	BX-501	
			5	CMX-2	
			14	MMX-2	
	DMCT Detector Unit		2	DHX-501	
	Can		1	SBB-4X	
	Module		22	MMX101	
	Pull Station w/Module		10	Bgx-101	
	Wheelock Multi-tone w/strobe		10	105182	
	Wheelock Stobe		6	127470	
	Display		1	LCD-80	
			1	SIB-2048	
			1	LIB-200	
			6	XPR-8	
	Power Supply		1	MPS-400	
	Beam Detector		1		
	Panel AFP-200		1	AFP-200	
	One Box CHS-4		1	CHS-4	
	One Box BP-3		1	BP-3	
	One Box-400		1	400	
	One Box-BE-XP			BE-XP	
	One Box CHSXPP-1		1	CHSXPP-1	
	One Box -BE-2020-N		1	BE-2020-N	
	One Box		1	CPU-2020	
	One Box		1	DIA-2020	
	One Box		1	90184	
	One Box		1	BP-3	
	One Box		1	ICA-4L	
	One Box-BE-1010-N		1	CPU-2020	
	One Box		1	90184	
	One Box		1	ICA-4L	
	One Box		1	BP-3	
	One Box		1	DIA-1010	
	Two Box		2	BE-PX	
1268C	FCI Smoke Dector		6	ASD-I	
1181	FCI Smoke Dector		1	301-I	
1216	Autocall Smoke Dector		2	MDK	

ATTACHMENT J-C6-15

LIST OF REQUIRED RECORDS AND REPORTS FOR ENERGY MANAGEMENT

These reports are referenced in Subsections C.1 through C.13

1. Records (Contractor Responsibility).

SPECIFICATION SAMPLE REFERENCE	REPORT TITLE	WHEN SUBMITTED	SUBMITTED TO	ATTACHED
Clause C.15.d.(1)	Operation Procedures Plan	Within 90 Calendar Days After Contract Start Date	CO	No
Clause C.15.g.(1)	Energy Savings Report	October 31 (Each FY)	CO	Yes
Clause C.15.g.(2)	Consumption and Cost Report	Each FY Quarter	CO	Yes
Clause C.15.g.(3)	Utility Report	Monthly	CO	Yes
Clause C.15.g.(4)	Electrical Usage	Monthly	CO	Yes

ATTACHMENT J-C6-16

LIST OF REQUIRED RECORDS AND REPORTS FOR OXYGEN AND ULTRASONIC CLEANING AND REFURBISHMENT

1. Records (Contractor Responsibility).

SPECIFICATION REFERENCE	REPORT TITLE	WHEN SUBMITTED	SUBMITTED TO	SAMPLE ATTACHED
Clause C.16.c	Operation, Delivery, Maint., Emergency Condition, and Inspection and Test Records	Maintain Daily	CO	Yes (J-C7-16A-G)
Clause C.16.c	Operational Logs	At Completion of the Contract	CO	No

2. Reports (Contractor Responsibility).

SPECIFICATION REFERENCE	REPORT TITLE	WHEN SUBMITTED	SUBMITTED TO	SAMPLE ATTACHED
Clause C.16.d.	Operation Procedures Plan	Within 90 Calendar Days Of Contract Start State	CO	No

ATTACHMENT J-C6-17

LIST OF REQUIRED RECORDS AND REPORTS FOR CORROSION CONTROL & COATING SERVICES

1. Reports (Contractor Responsibility).

SPECIFICATION REFERENCE	REPORT TITLE	WHEN SUBMITTED	SUBMITTED TO	SAMPLE ATTACHED
Clause C.17.d.	Operation Procedures Plan	Within 90 Calendar Days After Contract Start Date	CO	No
Clause C.17.f.	Annual Corrosion Control Condition Assessment	March 1 Annually	CO	No
Clause C.17.h.(7)	Hazardous Waste Disposal Manifest	Upon Disposal	CO	No

ATTACHMENT J-C6-18

LIST OF REQUIRED RECORDS AND REPORTS FOR RIGGING & HAULING SERVICES

1. Reports (Contractor Responsibility).

SPECIFICATION REFERENCE	REPORT TITLE	WHEN SUBMITTED	SUBMITTED TO	SAMPLE ATTACHED
Clause C.18.d.	Operation Procedures Plan	Within 90 Calendar Days After Contract Start Date	CO	No

ATTACHMENT J-C6-19

LIST OF REQUIRED RECORDS AND REPORTS FOR CALIBRATION, TESTING AND COMPONENT VERIFICATION

1. Records (Contractor Responsibility).

SPECIFICATION REFERENCE	REPORT TITLE	WHEN SUBMITTED	SUBMITTED TO	SAMPLE ATTACHED
Clause C.19.d.	Tests, Verification Results And Certification Records	Within 1 Day Of Completion	CO	No
Clause C.19.d.	Hose Assemblies Fabricated	Within 1 Day Of Completion	CO	No
Clause C.19.d.	Leak Test or Other Test Performed	Within 1 Day	CO	NO

2. Reports (Contractor Responsibility).

SPECIFICATION REFERENCE	REPORT TITLE	WHEN SUBMITTED	SUBMITTED TO	SAMPLE ATTACHED
Clause C.19.d.(4)	Discrepancy Report	Within 24 Hrs. Of Discovery	CO	No
Clause C.19.e.	Operations Procedures Plan	Within 90 Days Of Contract Start Date	CO	No

ATTACHMENT J-C6-20

LIST OF REQUIRED RECORDS AND REPORTS FOR INDUSTRIAL INSTRUMENTATION

1. Reports (Contractor Responsibility).

SPECIFICATION REFERENCE	REPORT TITLE	WHEN SUBMITTED	SUBMITTED TO	SAMPLE ATTACHED
Clause C.20.e.	Operation Procedures Plan	Within 90 Calendar Days Of Contract Start Date	CO	No

ATTACHMENT J-C6-21

LIST OF REQUIRED RECORDS AND REPORTS FOR BUILDINGS AND STRUCTURES

Reports (Contractor Responsibility).

SPECIFICATION REFERENCE	REPORT TITLE	WHEN SUBMITTED	SUBMITTED TO	SAMPLE ATTACHED
Clause C.21.c.	Roof Inspection Report	March 1	CO	Yes (J-C6-21A)
Clause C.21.c.	Facility Condition Assessment	March 1	CO	Yes (J-C6-8A)

ATTACHMENT J-C6-22

LIST OF REQUIRED RECORDS AND REPORTS FOR HEATING, VENTILATION, AIR CONDITIONING, AND REFRIGERATION SYSTEMS

1. Records (Contractor Responsibility).

SPECIFICATION REFERENCE	REPORT TITLE	WHEN SUBMITTED	SUBMITTED TO	SAMPLE ATTACHED
Clause C.22.i.(1)	Cooling Tower Biological Test Results (See J-C6-22A)	Monthly within **five days** of Testing	CO	Yes
Clause C.22.i.(5)	Cooling Tower Water Consumption (See J-C6-22B)	Monthly within **five days** of meter reading		No
Clause C.22.f.(26)	Cooling Tower Inspection	Yearly Following Inspection	CO	Yes (See J-C9-22)
Clause C.22.j	Chilled/Hot Water Distribution System Treatment Inspection Results	Within 5 Working Days Of Each 90-day 90-day inspection	CO	No
Clause C.22.h.(2)(b)	Portable AC log.	Upon Request	CO	No

2. Reports (Contractor Responsibility).

SPECIFICATION REFERENCE	REPORT TITLE	WHEN SUBMITTED	SUBMITTED TO	SAMPLE ATTACHED
Clause C.22.f.(4)(b)	Name of Proposed Lubrication Testing Lab.	30 Calendar Days After Contract Start Date	CO	No
Clause C.22.f.(4)(b)	Oil Sample Test Results	Not More Than 2 weeks After Drawing Sample	CO	No
Clause C.22.g.	Refrigerant Use and Refrigerant Inventory	Yearly by 10/1	CO	No

SPECIFICATION REFERENCE	REPORT TITLE	WHEN SUBMITTED	SUBMITTED TO	SAMPLE ATTACHED
Clause C.22.i.(1)(a)	Cooling Tower Proposed Chemical Treatment Procedures	At Least 15 Calendar Days Prior to Contract Start Date	CO	No
Clause C.22.i.(2)(a)	Circulating Water Test Results	Monthly	CO	Yes (See J-C6-22)
Clause C.22.i(2)(b)	Makeup Water Test Results	Monthly 5 Working Days After Drawing Sample	CO	No
Clause C.22.i.(2)©	Scale & Corrosion Test Results	Within 14 Working Days Following Each Coupon's Replacement	CO	No
Clause C.22.d.	Operation Procedures Plan	Within 90 Calendar Days Of Contract Start Date	CO	No
Attachment J-C9-22c	Steam Absorption Unit Report	Every Two Weeks	CO	No
Clause C.22.i.(1)(b).1.d.	Cooling Tower Chemical Consumption	Yearly	CO	No

ATTACHMENT J-C6-23

LIST OF REQUIRED RECORDS AND REPORTS FOR HIGH AND LOW VOLTAGE ELECTRICAL DISTRIBUTION SYSTEMS

1. Records (Contractor Responsibility).

SPECIFICATION REFERENCE	REPORT TITLE	WHEN SUBMITTED	SUBMITTED TO	SAMPLE ATTACHED
Clause C.23.c.	Disconnect Switch Inspection Record Form		CO	Yes (J-C6-23A)
Clause C.23.c.	Solid State Over Current Device Test Form		CO	Yes (J-C6-23B)
Clause C.23.c.	Oil Dielectric Test Record Form		CO	Yes (J-C6-23D)
Clause C.23.c.	Oil Dielectric Test Record Form		CO	Yes (J-C6-23D)
Clause C.23.c.	Oil Dielectric Test Record Form (Continued)		CO	Yes (J-C6-23D)
Clause C.23.f.	Power Outage Record Form		CO	Yes (J-B6-23E)
Clause C.23.f.	Request for Securing Utilities Form		CO	Yes (J-C6-23F)
Clause C.23.c.	Safety Operator Clearance Procedure Form		CO	Yes (J-C6-23G)
Clause C.23.f.	Unit Substation Maintenance Form		CO	Yes (J-C6-23H)
Clause C.23.f.	Substation Inspection Record		CO	Yes (J-C6-23I)

2. Reports (Contractor Responsibility).

SPECIFICATION REFERENCE	REPORT TITLE	WHEN SUBMITTED	SUBMITTED TO	SAMPLE ATTACHED
Clause C.23.h.(2)	Meter Readings	Entered in CMMS Within 2 Days After Reading and Submitted Within 5 Days of Contract Completion	CO	No
Clause C.23.d.	Operations Procedure Plan	Within 90 Calendar Days of Contract Start Date	CO	No

ATTACHMENT J-C6-24

LIST OF REQUIRED RECORDS AND REPORTS FOR STEAM GENERATING PLANT AND DISTRIBUTION SYSTEM OPERATIONS, MAINTENANCE AND REPAIR

1. Records (Contractor Responsibility).

SPECIFICATION REFERENCE	REPORT TITLE	WHEN SUBMITTED	SUBMITTED TO	SAMPLE ATTACHED
Clause C.24.c.(1)	Plant Operations Log	Daily input	CO	No
Clause C.24.g.(2)(d)		Hard and Electronic Copy of all Records At End Of Contract.		
Clause C.24.c.(2)	Configuration Documentation	When Systems Deleted, Added Or Modified	CO	No
Clause C.24.g.(5)	Water Test Results	Within 2 days of Testing Samples	CO	No
Clause C.24.m.	Fuel Delivery Records	Entered in CMMS Within 24-Hours of Delivery and Monthly Total Summary by 5th Day of Each Month	CO	No

2. Reports (Contractor Responsibility).

SPECIFICATION REFERENCE	REPORT TITLE	WHEN SUBMITTED	SUBMITTED TO	SAMPLE ATTACHED
Clause C.24.d.	Operation Procedures Plan	Within 90 Days After Contract Start Date	CO	No
Clause C.24.n.	Propane Usage	Monthly	CO	No
Clause C.24.g.(5)	Monthly Water Analysis	5th Calendar Day	CO	No

	Report	Of Each Month		
Clause C.24.g.(7)	Boiler Performance Report	Weekly - 4:00 PM Wednesday	CO	No
Clause C.24.h.(2)	Boiler Overhaul Findings and Results	Within 15 Days after overhaul	CO	No
Clause C.24.k.	Annual Chemical Evaluation	Within 15 Days Of Overhaul	CO	No
Clause C.24.c.3.	Steam Report	Monthly	CO	No
Clause C.24.g.2.c. 1, 2, 3	Water, Air, & Natural Gas Usage	Monthly	CO	No

ATTACHMENT J-C6-25

LIST OF REQUIRED RECORDS AND REPORTS FOR FIRE PROTECTION AND LIFE SAFETY SYSTEMS

1. Reports (Contractor Responsibility).

SPECIFICATION REFERENCE	REPORT TITLE	WHEN SUBMITTED	SUBMITTED TO	SAMPLE ATTACHED
Clause C.25.a.	eason For Any ire System Fault	Within 24 Hours of Fire System Fault	CO	No
Clause C.25.c.	uppression System aintenance ocumentation	Monthly	CO	NFPA Documentation Requirement Sample in LAPG 1710.11
Clause C.25.c.	ire Detection ystem ocumentation	Monthly	CO	FPA Documentation Sample in LAPG 1710.11
Clause C.25.c.	ire Barrier System ocumentation	Monthly	CO	NFPA Documentation Requirement Sample in LAPG 1710.11
Clause C.25.c.	rioritized List of epairs	Within 24- (or 2) hours from when Discrepancy is detected. Data is entered into CMMS within 1 day of service effort	CO	No
Clause C.25.d	perations rocedures Plan	Within 90 Days After Contract Start Date	CO	No

2. Reports (Contractor Responsibility).

SPECIFICATION REFERENCE	REPORT TITLE	WHEN SUBMITTED	SUBMITTED TO	SAMPLE ATTACHED
Clause C.25.g.(1)(a)	Inspection and Tests Log (Sprinder and Standpipe (Systems)	Upon Request	CO	NO
Clause C.25.h.(1)	Inspection and Tests Log (Deluge Systems)	Upon Request	CO	NO

ATTACHMENT J-C6-26

LIST OF REQUIRED RECORDS AND REPORTS FOR ELEVATOR MAINTENANCE AND REPAIR

1. Records (Contractor Responsibility).

SPECIFICATION REFERENCE	REPORT TITLE	WHEN SUBMITTED	SUBMITTED TO	SAMPLE ATTACHED
Clause C.26.d.	Operation Procedures Plan	Within 90 Calendar Days After Contract Start Date	CO	No

2. Reports (Contractor Responsibility).

SPECIFICATION REFERENCE	REPORT TITLE	WHEN SUBMITTED	SUBMITTED TO	SAMPLE ATTACHED
Clause C.26.f.(1)	Elevator, Dumbwaiter or Manlift Inspection Report	Within Two Days	CO	Yes (J-C6-26A)

ATTACHMENT J-C6-27

LIST OF REQUIRED RECORDS AND REPORTS FOR ROADS AND OTHER SURFACED AREAS

1. Reports (Contractor Responsibility).

SPECIFICATION REFERENCE	REPORT TITLE	WHEN SUBMITTED	SUBMITTED TO	SAMPLE ATTACHED
Clause C.27.e.	Roads and Surfaced Areas Condition Assessment	Entered in CMMS annually, 7 calendar days after inspection	CO	No
Clause C.27.i.(2)	General Snow and Ice Removal Plan of Operation	Within 30 days after contract Start date	CO	No
Clause C.27.i(2)(a)	Snow and Ice Removal Plan of Operation Update	At least 4 hours prior to projected Ice or snow storm	CO	No

Attachment J-C6-28C
Test Documentation
Nylon and Steel Slings

DATE: _____

Ref. No.	Bldg. No.	Cert. Date	Size	Style	Type	Wkg. Load	Cond.

SHEET: ____ **OF** ____

ATTACHMENT J-C6-28

LIST OF REQUIRED RECORDS AND REPORTS FOR BUILT-IN CRANES, HOISTS, MONORAILS AND LIFTING DEVICES

1. Records (Contractor Responsibility).

SPECIFICATION REFERENCE	REPORT TITLE	WHEN SUBMITTED	SUBMITTED TO	SAMPLE ATTACHED
Clause C.28.c	PM Records	Entered in CMMS Within Two weeks of Completion and Submitted Within five days of Contract Completion	CO	No
Clause C.28.c	TC Records	Entered in CMMS Within One Day of Completion and Submitted Within five days of Contract Completion	CO	No

2. Reports (Contractor Responsibility).

SPECIFICATION REFERENCE	REPORT TITLE	WHEN SUBMITTED	SUBMITTED TO	SAMPLE ATTACHED
Clause C.28.c.	Crane, Monorail, Hoist, Sling or Lifting Device Inspection Report	Within Two Days Upon Completion of Inspection	CO	Yes J-C6-28A-C
Clause C.28.c	Crane, Monorail, Hoist, Sling or Lifting Device Test Report	Entered in CMMS Within 24 Hrs. and Original Doc. Submitted Within five days Upon Contract Comp.	CO	No
Clause C.28.D	Operation Procedures Plan	Within 90 Calendar Days Of Contract Start Date	CO	No

ATTACHMENT J-C6-29

LIST OF REQUIRED RECORDS AND REPORTS FOR POTABLE WATER SYSTEM

1. Records (Contractor Responsibility).

SPECIFICATION REFERENCE	REPORT TITLE	WHEN SUBMITTED	SUBMITTED TO	SAMPLE ATTACHED
Clause C.29.d	PM Records	Entered in CMMS With One day of completion and Submitted within 5 days of Contract completion	CO CMMS	No

SPECIFICATION REFERENCE	REPORT TITLE	WHEN SUBMITTED	SUBMITTED TO	SAMPLE ATTACHED
Clause C.29.e.	Operation Procedures Plan	Within 90 Calendar Days After Contract Start Date	CO	No

ATTACHMENT J-C6-30

LIST OF REQUIRED RECORDS AND REPORTS FOR WASTEWATER SYSTEM

1. Records (Contractor Responsibility).

SPECIFICATION REFERENCE	REPORT TITLE	WHEN SUBMITTED	SUBMITTED TO	SAMPLE ATTACHED
Clause C.30.h	Sewage Pumping Station Inspection	Monthly	CO	No

2. Reports (Contractor Responsibility).

SPECIFICATION REFERENCE	REPORT TITLE	WHEN SUBMITTED	SUBMITTED TO	SAMPLE ATTACHED
Clause C.30.e.	Operation Procedures Plan	Within 90 Calendar Calendar Days of Contract Start Date	CO	No
Clause C.30.d.	Effluent Discharge	Monthly	CO	No

ATTACHMENT J-C6-31

LIST OF REQUIRED RECORDS AND REPORTS FOR RESEARCH FACILITIES MECHANICAL, ELECTRICAL AND FLUID SYSTEMS AND SUPPORT SYSTEMS

1. Records (Contractor Responsibility).

SPECIFICATION REFERENCE	REPORT TITLE	WHEN SUBMITTED	SUBMITTED TO	SAMPLE ATTACHED
Clause C.31.c.	Configuration Documentation	When Systems are Deleted, Added or Modified	CO	No
Clause C.31.c.	PM Records	Entered in CMMS Within. 1 Day of Completion and Submitted Within 5 Days of Contract Completion	CO	No

2. Reports (Contractor Responsibility).

SPECIFICATION REFERENCE	REPORT TITLE	WHEN SUBMITTED	SUBMITTED TO	SAMPLE ATTACHED
Clause C.31.d.	Operations Procedures Plan	Within 90 Days Of Contract Start Date	CO	No

ATTACHMENT J-C6-B

LIST OF REQUIRED RECORDS AND REPORTS BASIC/GENERAL

These reports are referenced in Subsections C.1 through C.13

1. Records (Contractor Responsibility).

SPECIFICATION REFERENCE	REPORT TITLE	WHEN SUBMITTED	SUBMITTED TO	SAMPLE ATTACHED
Clause C.5.b.(1)	Fuel Record	Quarterly		No
Clause C.7.i.	Warranty Records	Upon Request	CO	No
Clause C.7.j.	As-Built Drawings/Red Lined Drawings or Sketches	Within 30 Days After Work is Completed		CO
Clause C.8.b.(2)	Subcontract Records	45 Days After Completion	CO	No
Clause C.8.c.(2) & C.13.c	Facility History Files	Within Five (5) Calendar Days After Contract Completion		CO
Clause C.8.f	Facility Condition Assessment	March 1	CO	Yes J-C6-8A
Clause C.11.d.(1)(b)	After Hours TC Response List	Contract Start Date	CO	No
Clause C.11.f.	Trouble Call Record	Entered in CMMS Daily and Submitted at the end of Contract		CO
Clause C.12.b.	PM Records	Entered in CMMS Daily and Submitted at the end of Contract		CO
Clause C.13.b.(1)	WSR Records	Entered in CMMS Daily		

2. Reports (Contractor Responsibility).

SPECIFICATION REFERENCE	REPORT TITLE	WHEN SUBMITTED	SUBMITTED TO	SAMPLE ATTACHED
Clause C.7.c.(3)	Accident Report	Within 4 Hrs..- During Regular	CO	No

Clause C.8.c.(3)	Fiscal Year Costs Report	Monthly	CO	No

SPECIFICATION REFERENCE	REPORT TITLE	WHEN SUBMITTED	SUBMITTED TO	SAMPLE ATTACHED
		Work Hrs Within 24 Hrs. After Regular Work Hrs.		
Clause C.7.c.(4)	Damage Report	Within 24 Hrs. of Damage Occurrence	CO	No
Clause C.7.(3)	Change Notification	Prior to Change	CO	Yes
Clause C.7.i.	Equipment Deficiencies Under Warranty	Within 3 work days From Discovery	CO	No
Clause C.7.o.	Equipment Deficiency	Research Facilities Within 1 Hr Other Facilities By COB Next Business Day	 Work Control CMMS CO	 No No
Clause C.8.a.(2)(d)	Annual Work Plan Phase I	30 Days After Each Contract Year	CO	No
Clause C.8.a.(2)(d)	Annual Work Plan Phase II	30 Days After Each	CO	No
Clause C.8.a(2)(b)	Monthly Work Schedule	15th of the Month	CO/CMMS	No
Clause C.8.a.(2)©	Weekly Update	Weekly	CO	No
Clause C.8.b.(1)	Subcontract Administration Plan	90 Days After Contract Start Date. Update Quarterly	CO	No
Clause C.8.c.(3)	Construction Subcontract Report	Monthly	CO	No
Clause C.8.c.(3)	Construction Subcontract IN-house Report	Monthly	CO	No
Clause C.8.c.(3)	Corrosion Control Report	Monthly	CO	No

ATTACHMENT J-C7-16A

Request for Sample Verification

Component Cleaning and Verification Facility
Building 1188

SVR # _____ She

Requestor

Building _____ **Job Order**

System _____

Subsystem _____

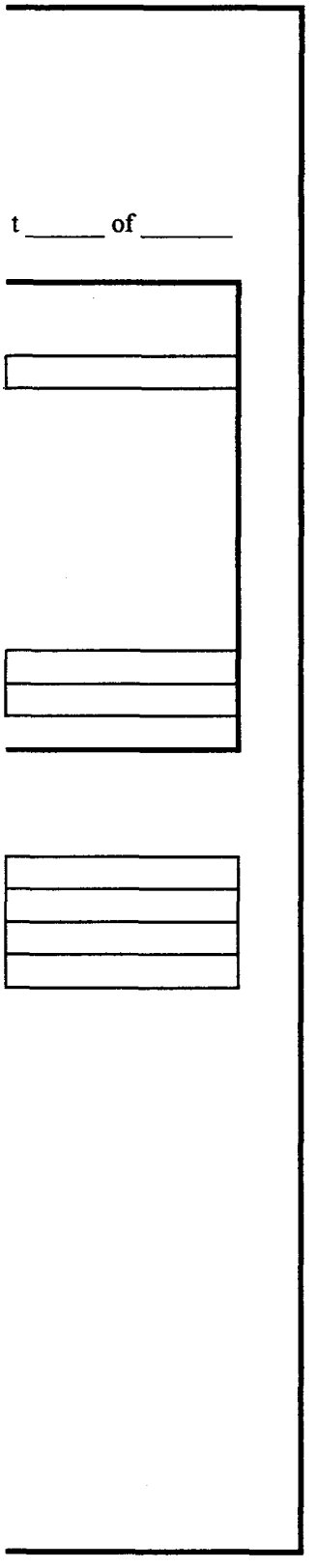
Requestor _____ **Requested**
Ext. _____ **Required**

CCVF

Verifyor _____ **Received**
Ext. _____ **Verification**
Acceptance
Returned

Special Instructions

Completion _____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ATTACHMENT J-C7-16B

REQUEST FOR COMPONENT CLEANING

Component Cleaning and Verification Facility
Building 1188

CCR # ☐ Sheet _____ of _____

Requestor

Building ☐ **Job Order** ☐

System _____

Subsystem _____

_____

_____

_____

Requestor _____ **Requested** ☐

Ext. _____ **Required** ☐

CCVF

Verifyor _____ **Received** ☐

Ext. _____ **Verification** ☐

Acceptance ☐

Returned ☐

Special Instructions

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Completion _____

ATTACHMENT J-C7-16C

Comments

Component Cleaning and Verification Facility
Building 1188

Building ☐
CR/SR # ☐

Sheet _____ of _____

Signature _____ Ext. ☐

ATTACHMENT J-C7-16D

Material List

Component Cleaning and Verification Facility
Building 1188

Building
CCR/SVR #

Item #	Sample #	Condition	ITEM	Quantity	# of pieces
1					
2					
3					
4					
5					

Conditiom code N - New and U - Used **Total number of pieces** _____

Cleaner _____ Date _____

Clause C.8.c.(3)	Fiscal Year Costs Report	Monthly	CO	No

ATTACHMENT J-C7-16A

Request for Sample Verification

Component Cleaning and Verification Facility
Building 1188

SVR # _____ She

Requestor

Building _____ **Job Order**

System _____

Subsystem _____

_____

_____

_____

Requestor _____ **Requested**
Ext. _____ **Required**

CCVF

Verifyor _____ **Received**
Ext. _____ **Verification**
Acceptance
Returned

Special Instructions

_____

_____

_____

_____

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_____

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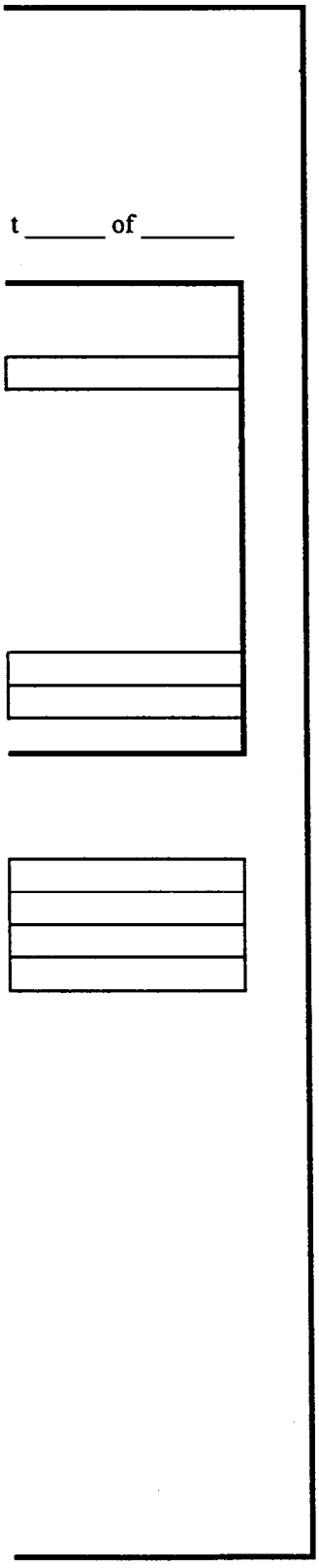
_____

Completion _____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ATTACHMENT J-C7-16B

REQUEST FOR COMPONENT CLEANING

Component Cleaning and Verification Facility
Building 1188

CCR # ☐ Sheet _____ of _____

Requestor

Building ☐ **Job Order** ☐

System _____

Subsystem _____

_____

_____

_____

Requestor _____ **Requested** ☐

Ext. _____ **Required** ☐

CCVF

Verifyor _____ **Received** ☐

Ext. _____ **Verification** ☐

Acceptance ☐

Returned ☐

Special Instructions

_____

_____

_____

_____

_____

_____

_____

_____

_____

Completion _____

ATTACHMENT J-C7-16C

Comments

Component Cleaning and Verification Facility
Building 1188

Building
CR/SR # ☐

Sheet _____ of _____

Signature _____ Ext. ☐

ATTACHMENT J-C7-16D

Material List

Component Cleaning and Verification Facility
Building 1188

Building
CCR/SVR #

Item #	Sample #	Condition	ITEM	Quantity	# of pieces
1					
2					
3					
4					
5					

Conditiom code N - New and U - Used **Total number of pieces** _____

Cleaner _____ Date _____

ATTACHMENT J-C7-16E

Freon Particle Count Verification

Component Cleaning and Verification Facility
Building 1188

Sheet _____

Building _____ Technician _____

CCR/SVR # _____ Sample # _____ Ext. _____

Sample Volume 1000 mL = 1 lit

_____ gal.

1 gallon = 3.785 liters

Particle Range in Microns: Less than 100

A = Amount of particles counted :	_____	
B = Total volume of Freon used :	1 liters	A x B =
C = Surface area in square feet :	_____ sq. ft.	C x D
D = Amount of Freon filtered :	_____ liters	

Particle Range in Microns: 100 to 250

A = Amount of particles counted :	_____	
B = Total volume of Freon used :	1 liters	A x B =
C = Surface area in square feet :	_____ sq. ft.	C x D
D = Amount of Freon filtered :	_____ liters	

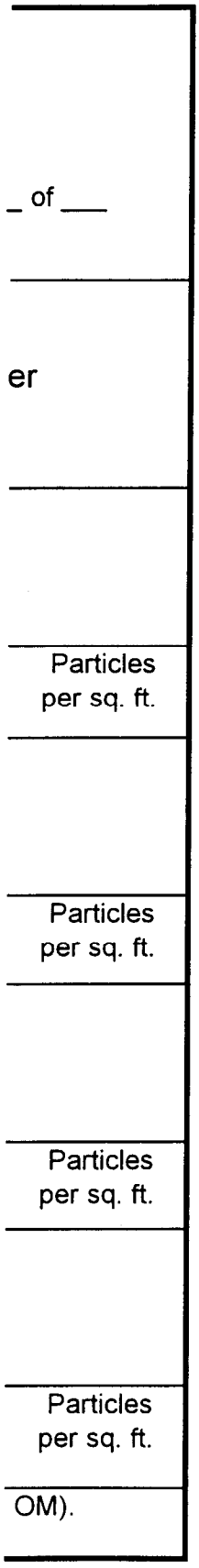
Particle Range in Microns: 250 to 300

A = Amount of particles counted :	_____	
B = Total volume of Freon used :	1 liters	A x B =
C = Surface area in square feet :	_____ sq. ft.	C x D
D = Amount of Freon filtered :	_____ liters	

Particle Range in Microns: greater than 300

A = Amount of particles counted :	_____	
B = Total volume of Freon used :	1 liters	A x B =
C = Surface area in square feet :	_____ sq. ft.	C x D
D = Amount of Freon filtered :	_____ liters	

NOTE: Remarks or recomendations are to be written on comments form (


_ of ___
er
Particles per sq. ft.
Particles per sq. ft.
Particles per sq. ft.
Particles per sq. ft.
OM).

Freon Nonvolatile Residue Annalysis

Component Cleaning and Verification Facility
Building 1188

Sheet _____ of _____

Building [ ] Technician _____
CCR/SVR # [ ] Sample # Ext. _____

Sample Volume _____ mL = _____ liter
_____ gal.

1 gallon = 3.785 liters

	Initials	Date
Select precleaned glassware		
Wipe A1 pan with pure freon		
Place A1 pan in 100 degree F oven for 1 hour Time in: _____ Time out: _____		
Place in Dessicator 45 minutes before weighing Time in: _____ Time out: _____		
Place 500 mL of 1000 mL test solvent in beaker and boil at low temperature		
Weigh A1 pan (before) Weight _____ grams		
When 100 mL of freon remains in beaker, wash sides of beaker with pure freon		
When less than40 mL are left, swish freon around sides of beaker		
Pour beaker contents into A1 pan and evaporate to dryness		
Place A1 pan in 100 degree F oven for 1 hour Time in: _____ Time out: _____		
Cool A1 pan in dessicator for 15 minutes and weigh A1 pan (after) Weight _____ grams		

Calculation of results:

Residue = Weight(after) - Weight(before)

Residue = _____ grams

NVR = Residue x Volume / 1.565

NVR = _____ ppm

Package, labe, and store A1 pan		
Record NVR on appropriate documentation		

NOTE: Remarks or recomendations are to be written on comments form (COM).

ATTACHMENT J-C7-16G

Component/System Certification

Component Cleaning and Verification Facility
Building 1188

Sheet _____ of _____

Building [ ] [ ]
CCR/SVR # [ ] [ ]

Sampler Initials _____
Ext. _____

Material Item # 's			
System		Freon Lot #	Drum #

ANALYSIS RESULTS

			Initials	Date
Visual inspection performed if required	[ ]	_____	_____	_____
UV inspection performed if required	[ ]	_____	_____	_____
Dewpoint reading if required	_____ ppm	_____	_____	_____
Acidity and Alkalinity test if required	_____ ph	_____	_____	_____
Non Volatile Residue reading	_____ ppm	_____	_____	_____
Particulate matter analysis		_____	_____	_____

Particle size in Microns Level _____	Maximum number o particles per square foot allowed	Total number o particles found	Particles per square foot	Total fibers found
<100	unlimited			
100 to 250	93			
250 to 300	3			
>300	0			

NASA FINAL ACCEPTANCE

Tests and analysis have been completed as noted and the hardware is certified to be clean.

Name _____ Org. _____ Date _____

NOTE: Remarks or recomendations are to be written on comments form (COM).

ATTACHMENT J-C8-11A

SUMMARY OF TROUBLE CALL HISTORICAL DATA

This summary is based on the definition of trouble calls in Subsection C11 (maximum 16 hours of labor and $2,000 total cost). The data includes all Short & Urgent calls (a LaRC nomenclature used on the current contract for trouble calls) whice were for one craft, were estimated at 16 labor hours or less, with material cost of $500 or less). The data also includes Work Requests meeting the contract trouble call definition, blanket work orders for motor repair up to 15 HP, and electrical lighting maintenance. Based on past experience it is estimated that 10% of a years trouble calls are emergency calls. The trouble call summary is derived from LaRC records (See Attachment J-C8-11B & 11C) and is included for information only, to indicate the types of work performed, approximate order of magnitude, approximate material cost, and seasonal trends in the workload. The summary is NOT considered sufficiently comprehensive to be the sole basis for the Offeror's bid for performance of Trouble Calls.

TROUBLE CALL WORK

TABLE #1 - NUMBER OF TROUBLE CALLS PER MONTH (1) (4)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
FY 1996	999	793	534	953	1078	937	1050	985	911	1011	980	845	**11076**
FY 1997	901	794	700	881	780	788	907	909	1059	1139	880	899	**10637**

The various crafts listed below were assigned the responsibility for performing work on the number of trouble calls shown. The number of hours shown with each craft is the actual hours to complete the trouble calls assigned to that craft.

TABLE #2 - NUMBER OF TROUBLE CALLS PER CRAFT (1) (4)

		NUMBER OF TC - FY96			OT (2)	ACTUAL HOURS - FY96			NUMBER OF TC - FY97			OT (2)	ACTUAL HOURS - FY97		
CRAFT		WR-TC	S&U	TOTAL	HOURS	WR-TC	S&U	TOTAL	WR-TC	S&U	TOTAL	HOURS	WR-TC	S&U	TOTAL
Elect. Fac. (Main Dr. Eq.)	13	---	---	---		---	---	---	29	107	**136**	35	288	718	**1006**
Plant Electrical	19	1514	966	**2480**	75	4630	3880	**8510**	1530	922	**2452**	54	2617	3714	**6331**
Welding/Burning	22	7	215	**222**	2	40	1043	**1083**	7	159	**166**	6	52	975	**1027**
Utilities Operation	24	---	---	---		---	---	---	1	---	**1**		12	---	**12**
Insulation	25	28	---	**28**	30	277	---	**277**	27	---	**27**		38	---	**38**
Component Verification	26	10	386	**396**		25	544	**569**	14	446	**460**		62	855	**917**
Cranes & Elevators	28	53	---	**53**		1500	---	**1500**	36	---	**36**		204	---	**204**
Facility Mechanical	29	46	947	**993**	93	451	6445	**6896**	78	960	**1038**	108	764	5233	**5997**
Air Conditioning Systems	30	56	2679	**2735**	121	632	11976	**12608**	35	2430	**2465**	153	373	11297	**11670**
Rigging	31	59	---	**59**	14	543	---	**543**	37	---	**37**		290	---	**290**
Pipefitting	33	37	2345	**2382**	134	449	8025	**8474**	42	2043	**2085**	175	359	6057	**6416**
Const. & Repair (Carpente	35	24	1049	**1073**		238	2562	**2800**	58	977	**1035**		332	2671	**3003**
Industrial Equipment	39	---	---	**312**		---	---	**3360**	---	---	**312**		---		**3360**
Engineering Services	41	6	---	**6**		77	---	**77**	10	---	**10**		118	---	**118**
Sheetmetal	43	9	---	**9**	22	97	---	**97**	1	---	**1**		4	---	**4**
Const. & Repair (Painters)	57	32	---	**32**		152	---	**152**	30	---	**30**		183	---	**183**
Const. & Repair (Masons)	58	6	---	**6**		52	---	**52**	11	---	**11**		94	---	**94**
Const. & Repair (Roofers)	59	4	310	**314**		37	1747	**1784**	5	304	**309**		76	2254	**2330**
Laborers (Building Trades)	61	7	---	**7**		51	---	**51**	97	---	**97**		203	---	**203**
EG&G Contract Office	62	---	---	---		---	---	---	6	---	**6**		0	---	**0**
UCS	64	2	---	**2**		28		**28**	8	---	**8**		120	---	**120**
Fire Suppression	67	---	25	**25**	11	---	46	**46**	---	20	**20**	3	---	38	**38**
Air Cond. Laborer	72	4	---	**4**		24	---	**24**	---	---	---		---	---	---

ATTACHMENT J-C8-11A

SUMMARY OF TROUBLE CALL HISTORICAL DATA

Electrical Laborer	73	102	---	102		343	---	343		856	---	856		1261	---	1261
Estimators	91	1		1	9	1	---	1		---	---	---		---	---	---

TABLE #3 - ACTUAL HOURS REQUIRED FOR TROUBLE CALL PERFORMANCE (1) (2) (4)

Following is a tabulation of TC's and the actual hours required for completion **(NOTE: Data for the following categories of work is NOT INCLUDED: FY 96 blanket work orders, for motor repair up to 15 HP, FY 96 and FY 97 lighting calls, utilities operation, cranes & elevators, industrial equipment, and high voltage electrical):**

	NUMBER OF TC - FY96			ACTUAL HOURS - FY96			NUMBER OF TC - FY97			ACTUAL HOURS - FY97		
HOURS	WR-TC	S&U	TOTAL	WR-TC	S&U	TOTAL	WR-TC	S&U	TOTAL	WR-TC	S&U	TOTAL
FROM 0 THRU 2	80	3545	**3625**	137	5914.5	**6051.5**	26	3607	**3633**	49	5810	**5859**
FROM 2 THRU 4	71	2474	**2545**	272	9101.5	**9373.5**	45	2203	**2248**	174	7970	**8144**
FROM 4 THRU 6	49	1045	**1094**	275	6025.5	**6300.5**	24	833	**857**	140	4771	**4911**
FROM 6 THRU 8	109	1052	**1161**	854	8286.5	**9140.5**	90	658	**748**	714	5184	**5898**
FROM 8 THRU 10	36	176	**212**	351	1816	**2167**	21	210	**231**	201	2049	**2250**
FROM 10 THRU 12	45	124	**169**	533	1477	**2010**	37	157	**194**	438	1861	**2299**
FROM 12 THRU 14	22	28	**50**	303	383	**686**	20	82	**102**	275	1124	**1399**
FROM 14 TO INCL. 16	80	156	**236**	1318	2485	**3803**	120	300	**420**	1905	4785	**6690**
MORE THAN 16	0	31	**31**	0	778	**778**	0	4	**4**	0	78	**78**
TOTAL	492	8631		4043	36267		383	8054		3896	33630	
TOTAL			**9123**			**40310**			**8437**			**37526**

TABLE #4 - TROUBLE CALL ESTIMATED MATERIAL COST PER YEAR (3)

	FY 1996	FY 1997
LIGHTING	43,788	41,371
MOTORS	615	
S&U	228,644	199,082
WR - TC	58,392	51,863
TOTAL	**331,439**	**292,316**

NOTES

(1) - In FY-1996 and FY-1997 High voltage electrical trouble call work was performed by civil service personnel. High voltage electrical TCs were not included in the S&U and WR system tabulations. It is estimated that a total of 125 TCs with 1,200 man hours of work per year were performed on the high voltage electrical system including 22 overtine TCs with 190 manhours of overtime work. These hours are in addition to the hours shown in the tabulations.

(2) - Overtime hours are included in Table #3 Actual Hours Required for Trouble Call Performance. These overtime hours were charged against the tasks listed in J-C8-11B and J-C8-11C. The overtime hours do not include high voltage electrical system overtime hours (see (1) above for high voltage electrical overtime hours).

(3) - Material cost associated with high voltage electrical, and crane and elevator trouble calls are not included

(4) - Industrial instrumentation support services (See Subsection C, paragraph C.20.e.) have not been included in the WR and S&U data.. Trouble Calls for these services are estimated to average 280 labor hours for the average 26 calls per month. These averages (hours and calls) have been included in the number of trouble calls per month and the number of TC's per crart but not included in the actual hours required for completion.

ATTACHMENT JC8-SR6A

SUMMARY OF FY 1996 SERVICE REQUEST

CRAFT TITLE	CRAFT	HOURS	MATERIAL COST
Plant Electrical	19	17,428	
Welding/Burning	22	3,012	
Insulation	25	9,098	
Component Verification	26	131	
Cranes & Elevators	28	130	
Facility Mechanical	29	4,939	
Air Conditioning Systems	30	541	
Rigging	31	10,974	
Pipefitting	33	5,614	
Const. & Repair (Carpenters)	35	8,298	
Engineering Services	41	11,494	
Sheetmetal	43	1,230	
Const. & Repair (Painters)	57	6,625	
Const. & Repair (Masons)	58	1,363	
Const. & Repair (Roofers)	59	396	
Labors	61	4,388	
Corrosion Control Cont.	63	1,953	
UCS	64	14	
Fire Suppression	67	158	
Mechanical Laborer	71	100	
Air Cond. Laborer	72	457	
Corrosion Control Supervisor	84	302	
Maintenance Manager	85	23	
Work Control	88	255	
Safety	89	17	
Craft Foreman	90	37	
Estimators	91	42	
SEEMA Supervisors	96	43	
Total FY 1996		**89,062**	**539,078**

ATTACHMENT J-C8-SR6B

OVERTIME WORKED ON FY 1996 SERVICE REQUEST

NOTE:
Overtime hours used in accomplishing service requests during FY 1996 are shown below.
These hours are included in the task actural hours shown in Attachment J-C8-SR6.

TASK NO.	DATE REC.	ACTUAL OT HRS.	CRAFT	COMPL. DATE	DESCRIPTION
0110O6	8-Feb-96			15-Apr-96	DEMOLITION IN RM 105
		0	19		
		37	25		
		0	33		
		0	35		
0124N6	19-Apr-96			11-Sep-96	FLOOR TILES
		14	25		
		30	35		
0214M6	11-Mar-96			12-Aug-96	INSTALL WATER METERS
		8	22		
		19	33		
0214T6	22-Feb-96			1-May-96	REPL CELING LIGHTS
		0	19		
		198	25		
		0	30		
		0	33		
		36	35		
0226B6	11-Mar-96			4-Apr-95	INSTALL PLYWOOD ROOF
		6	35		
0250E6	13-Feb-96			20-Feb-96	MOVE MODEL CART
		13	31		
0250H6	21-Feb-96			26-Mar-96	PLACE DDAS IN CONTROL ROOM
		18	31		
0304G6	8-Apr-96			2-Aug-96	RELOCATE TRL FROM 1270 TO 1237
		0	19		
		10	31		
		0	35		
0304W6	7-Mar-96			9-Oct-96	INSTALL SEPERATORS
		20	22		
		50	33		
0309A6	5-Mar-96			13-Jun-97	REPL ROOF
		19	41		
0309B6	5-Mar-96			20-Jun-97	REPL ROOF SECTION
		3	41		
0309C6	5-Mar-96			20-Jun-97	REPL ROOF
		8	41		
0309H6	16-Apr-96				REPL ELEVATOR CAR GATE

TASK NO.	DATE REC.	ACTUAL OT HRS.	CRAFT	COMPL. DATE	DESCRIPTION
		7	41		
0309M6	16-Apr-96			9-Aug-96	REPL AC UNIT
		4	41		
0310H6	16-Apr-96				REPR STEAM COIL
		35	41		
0310I6	16-Apr-96				REPL SPLIT SYSTEM
		23	41		
0310J6	16-Apr-96				REPL SPLIT SYSTEM
		20	41		
0310N6	16-Apr-96				REPL AC UNIT
		3	41		
0310P6	16-Apr-96				REPLACE 10T UNIT
		3	41		
0310Q6	16-Apr-96			22-Aug-97	REPL AIR HANDLER
		3	41		
0310R6	16-Apr-96			28-May-96	REPL AC UNIT
		0	33		
		3	41		
0310S6	16-Apr-96			28-May-96	REAC UNIT
		2	41		
0310T6	16-Apr-96			27-Jun-97	REPL AIR HANDLER
		1	41		
0310U6	16-Apr-96			28-May-96	REPL AC UNIT
		1	41		
0314W6	3-Apr-96			20-May-96	INSTALL 10"VALVE
		23	22		
		13	25		
		30	31		
		28	33		
0316T6	16-Apr-96			4-Jul-97	REPOINT WALLS
		6	41		
0316W6	16-Apr-96			9-Aug-96	REMOVE ROOF
		9	41		
0316X6	16-Apr-96			3-Oct-97	REPL BUILT UP ROOF
		6	41		
0316Y6	16-Apr-96			4-Jul-97	REPL WINDOWS
		23	41		
0318A6	11-Apr-96			7-Jun-96	PROVIDE TEMP CKT
		8	19		
0323N6	3-May-96				REPL COMPRESSOR
		9	41		
0323Q6	3-May-96				REPL AIR HANDLER
		6	41		
0323S6	15-May-96			31-May-96	REPLACE AC SYSTEMS
		1	41		
0323W6	16-Aug-96			16-Dec-96	REPR HOLES IN SIDING
		200	63		

TASK NO.	DATE REC.	ACTUAL OT HRS.	CRAFT	COMPL. DATE	DESCRIPTION
		16	84		
0327M6	3-May-96			24-Jun-96	BLAST AND PRIME BASE
		53	63		
		18	84		
0327S6	3-May-96			2-Oct-96	RELOCATE VORTEX HIGH HEAT SYS
		6	19		
		0	33		
		0	35		
0329E6	29-Mar-96			30-Mar-96	CLEAN UP ASBESTOS MENS ROOM
		47	25		
0403D6	16-Apr-96			23-Jul-96	FLEXIBLE HOSE
		4	22		
		12	31		
		4	33		
0403M6	30-Apr-96			11-Jul-97	VENT SYSTEM
		1	41		
0410R6	6-Aug-96			30-Jun-97	INST FAN COIL UNITS
		0	19		
		0	30		
		0	33		
		0	35		
		8	43		
0412J6	6-May-96			30-Jul-96	INSTALL 3" CONDUITS GATE #3
		8	19		
		0	35		
0417O6	25-Apr-96			2-Apr-97	UPDATE CONF ROOM
		0	19		
		32	25		
		0	29		
		0	35		
		3	41		
0419M6	3-May-96			23-May-96	REMOVE ASBESTOS
		21	25		
0426A6	6-Jun-96			18-Sep-96	REMOVE EQUIPMENT
		4	19		
0430E6	9-May-96			7-Aug-96	REMOVE AB INSULATION
		56	25		
0430I6	29-Apr-96			25-Jul-97	INVESTIGATE/REPAIR WATER LEAK
		10	41		
0450K6	11-Apr-96			1-Jul-96	MOVE SIDEWALL MOUNT
		22	31		
0503U6	24-Jun-96			9-Dec-96	REMOVE STEEL RAILS
		7	91		
0505F6	21-May-96			31-May-96	UPGRADE ELECTRICAL
		4	19		
0520J6	23-Jul-96			27-Dec-96	INSTALL C/TOWER
		22	19		

TASK NO.	DATE REC.	ACTUAL OT HRS.	CRAFT	COMPL. DATE	DESCRIPTION
		0	25		
		0	29		
		0	30		
		0	33		
		0	35		
0545B6	20-May-96			27-Sep-96	REMOVE LIGHTS
		4	19		
0605S6	7-Jun-96			17-Jun-96	REMOVE 12 A/B DOORS
		24	25		
0617H6	19-Jun-96			2-Jul-96	REMOVE/INSTALL TEMPORARY POWER
		2	19		
		0	35		
0624S6	28-Jun-96			8-Jul-96	REMOVE INSULATION
		18	25		
0627Q6	27-Jun-96			30-Oct-96	PUMP OIL FROM SKIMMER PIT
		4	33		
0650A6	5-Jun-96			5-Jun-96	OFF LOAD TRUCK
		10	31		
0650F6	14-Jun-96			14-Aug-96	MOVE MATING BASE & MOCKUP
		15	31		
0708J6	24-Jul-96			16-Sep-96	INSTAL 1 1/4" CONDUIT & CABLES
		56	19		
0710B6	10-Jul-96			12-Sep-96	1996 HIGH WINDS,TIDES,HURRICAN
		32	19		
		0	25		
		17	29		
		33	31		
		18	33		
		8	35		
		19	67		
		23	85		
		23	88		
		17	89		
		17	90		
		19	91		
0710Q6	30-Jul-96			16-Nov-96	REMOVE CONDUIT
		10	19		
		0	35		
		5	67		
0717K6	18-Jul-96			21-Jul-96	WELD LIFTING PAD EYE
		19	22		
0744O6	25-Jul-96			25-Jul-96	REPR SCREENS
		2	31		
0750M6	25-Jul-96			12-Aug-96	OFF LOAD TRUCK
		20	31		
0803E6	6-Aug-96			11-Sep-96	INSTALL LEGS - EXPO 96 WORK
		12	35		

TASK NO.	DATE REC.	ACTUAL OT HRS.	CRAFT	COMPL. DATE	DESCRIPTION
0806P6	22-Aug-96			23-Sep-96	REMOVE SUPPLY LINE
		4	25		
0808Y6	20-Aug-96			26-Sep-96	CONVERT OFFICE SPACE
		10	19		
		0	33		
		0	35		
0812N6	22-Aug-96			25-Sep-96	BUILD SHELVES
		76	35		
0814A6	14-Aug-96			13-Aug-96	INST 100AMP DISCONNECT
		6	19		
0814O6	25-Sep-96			19-Oct-96	INSTALL ISOLATION VALVE
		16	25		
		0	33		
0821B6	26-Aug-96			27-Sep-96	REMOVE CHAIR RAIL
		7	25		
		0	35		
0821F6	26-Aug-96			30-Sep-96	REMOVE ASBESTOS
		6	25		
0831H5	19-Jan-96			13-May-96	MODIFY ROOM
		16	19		
		34	30		
		88	35		
0844A6	5-Aug-96			4-Aug-96	REPR SEPERATORS
		16	33		
0913F6	16-Sep-96			31-Jan-97	INST MODEL ELEVATOR
		15	31		
0922F5	7-Nov-95			27-Mar-96	REMOVE ARC JET
		0	19		
		3	25		
		0	33		
0C11T5	12-Apr-96			6-Jun-97	REPL CONTROL ROOM
		36	25		
0C11Y5	6-Mar-96			11-Oct-96	REPL AIR HANDLER
		0	19		
		176	25		
		0	33		
0C11Z5	6-Mar-96			11-Oct-96	AHU REPLACEMENT
		16	25		
0E21J4	6-Nov-95			9-Aug-96	REPL AC SYSTEM
		176	25		
0H24Q5	13-Oct-95			6-Nov-95	MOVE CART AND EQUIP
		46	31		
0H28R5	24-Apr-96			28-Jun-96	MODS TO CONFERENCE CENTER
		0	33		
		22	35		
1012I5	28-Nov-95			10-Feb-96	MODIFY WALLS
		16	19		

TASK NO.	DATE REC.	ACTUAL OT HRS.	CRAFT	COMPL. DATE	DESCRIPTION
		0	30		
		0	35		
1016L5	29-Jul-96			2-Jan-97	INSTALL MONORAIL & JIB CRANE
		0	19		
		16	22		
		24	29		
		0	33		
		0	35		
1113M5	20-Nov-95			21-Nov-95	EMERGENCY PROBLEMS (FURLOUGH)
		3	19		
1150Q5	5-Dec-95			18-Feb-97	OFF LOAD PLATENS
		36	31		
1213V5	9-Jan-96			4-Feb-96	FURLOUGH/SNOW EMERGENCY SUPRT
		13	19		
		51	25		
		32	29		
		33	30		
		30	31		
		48	33		
		48	35		
		14	90		
		6	91		
		2880			

ATTACHMENT JC8-SR7A

SUMMARY OF FY 1997 SERVICE REQUEST

CRAFT TITLE	CRAFT	HOURS	MATERIAL COST
Elect. Fac. (Main Dr. Equip.)	13	2213	
Plant Electrical	19	13071	
Welding/Burning	22	2937	
Insulation	25	11367	
Component Verification	26	294	
Cranes & Elevators	28	206	
Facility Mechanical	29	4298	
Air Conditioning Systems	30	1600	
Rigging	31	13700	
Pipefitting	33	8872	
Const. & Repair (Carpenters)	35	8082	
Engineering Services	41	9373	
Sheetmetal	43	1650	
Const. & Repair (Painters)	57	15330	
Const. & Repair (Masons)	58	1696	
Const. & Repair (Roofers)	59	494	
Labors	61	4973	
EG&G Contract Office	62	13	
Corrosion Control Cont.	63	4905	
UCS	64	5798	
Fire Suppression	67	190	
Mechanical Laborer	71	48	
Air Cond. Laborer	72	865	
Electrical Laborer	73	27	
Main Drive Control	74	14393	
Duty Officer	75	3644	
Administration	81	139	
Corrosion Control Supervisor	84	458	
Tool Crib Operator	86	0	
Work Control	88	6	
Craft Foreman	90	22	
Estimators	91	8	
Total FY 1997		**130,672**	**745,844**

ATTACHMENT J-C8-WR7

FY 1997 WORK REQUEST

This is a list of Work Requests issued in FY 1997 which is representative of work to be performed in accordance with Subsection C12, Recurring Work or C13, Indefinite Quantity Work. It includes Blanket Work Orders, Preventive Maintenance, Building Shutdown Work, and day-to-day Work Request. The Short and Urgent tasks, Lighting tasks, Motor Repair Blanket Work Requests, and the day-to-day Work Requests which meet the Contract definition for trouble calls have been excluded from this listing and are included in the Trouble Call list in J-C8-11B&C.

This list of Work Requests is provided as historical data for information purposes only and is included to indicate the types of work, approximate order of magnitude, craft involvement, material cost, and seasonal trends in the workload. The total FY 1997 labor hours, total hours per craft, and total material cost are shown in Attachment JC8-WR7A. Overtime hours used in accomplishing task during FY 1997 are shown in Attachment J-C8-WR7B. The actual hours shown below include the hours worked as overtime.

The following Blanket Work Orders were issued in FY 1997 to perform maintenance work, inlcluding preventive maintenance (PM). They can be identified by the Work Order number assigned as provided in the list below.

WO Number	Example	Description of Blanket Work Order
**00B*	0300B7	Maintain /Replace Batteries - PM
**00C*	1100C6	Daily Inspection of Cooling Towers - PM
**00D*	0800D7	Inspection of Cranes/Elevators - PM
**00E*	0100E7	Weekly PM of Portable Equipment - PM
**00F*	0900F7	Inspect and Clean Roofs - PM
**00G*	0800G7	Purge Absorption Machine - PM
**00H*	0100H7	Maintenance of Emergency Lights - PM
**00I7	0600I7	Maintenance of Backup Power to Telecom. - PM
**00K*	0500K7	Maintain Fire Protection System - PM
**00L*	0600L7	Certify Gauges and Valves - PM
**00M*	0700M7	Duty Officer and UCS Services
**00N*	0800N7	Drive Control Services
**00P*	0800P7	Weekend and Holiday Duty Officer Services
**00Q*	0900Q7	Protective Relay Calibration - PM
**00R*	0700R7	Unitary Wind Tunnel Operation (1251)
**00S*	1000S7	TDT Operations (648)
**40C*	1140C6	Zone 4/115/1145 Maintain Photo and Printing Equip. - PM
**40D*	0240D7	Repaiar Modify Equipment 1321, 1225, 1283, 1245, & 1237
**50C*	0750C7	Power Distribution Maintenance - PM
**50D*	0250D7	Support UCS System
**50E*	0650E7	Meter Readings
**50F*	0250F7	Substation Inspection/Nitrogen Bottles - PM
**50G*	0150G7	Weekly Check Sewage Lift Station - PM
**60D*	0360D7	Weekly Diesel Pump Checks - PM
**60E*	1060D7	Maintain Photo Printing Equipment - PM

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0100B7	19-Dec-96				31-Jan-97	REPL BATTERIES

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		0	430			
		287	125	19		
Task Order 0100B7		287	555			
'0100C7	19-Dec-96				31-Jan-97	WATER TREATMENT
		0	876			
		287	4	30		
		0	7	33		
Task Order 0100C7		287	887			
'0100E7	19-Dec-96				31-Jan-97	PORTABLE PUMP
		0	1102			
		58	0	29		
		4	0	31		
		24	0	71		
Task Order 0100E7		86	1102			
'0100F7	19-Dec-96				31-Jan-97	ROOF INSPECTION
Task Order 0100F7		0	0			
'0100H7	19-Dec-96				31-Jan-97	EMERGENCY LIGHTING
		0	472			
		0	694	19		
		159	0	67		
Task Order 0100H7		159	1166			
'0100I7	19-Dec-96				31-Jan-97	TELECOMMUNICATIONS
		20	0	19		
Task Order 0100I7		20	0			
'0100K7	19-Dec-96				31-Jan-97	FIRE ALARM /DETECTORS
		0	277			
		0	59	19		
		742	0	67		
Task Order 0100K7		742	336			
'0100L7	19-Dec-96				31-Jan-97	CERTIFY GAGES
		0	92			
		145	0	26		
		0	751	33		
Task Order 0100L7		145	843			
'0100N7	9-Jan-97				31-Jan-97	DRIVE CONTROL SYSTEMS
		0	219			
		0	43	19		
		1259	0	74		
Task Order 0100N7		1259	262			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0101A7	8-Jul-97					PERFORM PM BASE SIRENS
		28	0	67		
Task Order 0101A7		28	0			
'0101B7	9-Jan-97				30-Apr-97	NITRO TR PM
		141	0	33		
Task Order 0101B7		141	0			
'0101C7	9-Jan-97				24-Apr-97	PM STEAM TRAPS
		403	0	33		
Task Order 0101C7		403	0			
'0101D7	9-Jan-97				28-Apr-97	WATER SYSTEMS PM
		0	3755			
		204	544	33		
Task Order 0101D7		204	4299			
'0101H7	22-Jan-97				28-Feb-97	REPR HIGH PRESSURE LEAK
		0	256			
		24	0	22		
		2	0	26		
		4	0	31		
		78	0	33		
Task Order 0101H7		108	256			
'0109A7	9-Jun-97					REPAINT EXTERIOR
		84	897	57		
Task Order 0109A7		84	897			
'0109B7	6-Jun-97					REPAINT EXT DOORS,PIPE,SIDING
		183	295	57		
		45	0	61		
Task Order 0109B7		228	295			
'0109C7	6-Jun-97				13-Aug-97	REPAINT EXTERIOR OF "D" BLDG
		39	146	57		
Task Order 0109C7		39	146			
'0109D7	6-Jun-97					REPAINT EXTERIOR
Task Order 0109D7		0	0			
'0109E7	6-Jun-97					REMOVE WALLPAPER/REPAINT
		20	0	31		
		708	2354	57		
Task Order 0109E7		728	2354			
'0109F7	9-Jun-97				29-Sep-97	REPAINT SUBSTATION EQUIPMENT

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		46	64	57		
Task Order 0109F7		46	64			
'0109G7	9-Jun-97					REPAINT BAY AREA WALLS
Task Order 0109G7		0	0			
'0109H7	1-Jul-97					REPAINT SIDING,LADDERS,ETC.
Task Order 0109H7		0	0			
'0109I7	6-Jun-97					REPAINT EXTERIOR OF BLDG.
Task Order 0109I7		0	0			
'0109J7	9-Jun-97					REPAINT EXTERIOR OF BLDG.
		59	710	57		
		40	0	61		
Task Order 0109J7		99	710			
'0109K7	6-Jun-97				19-Aug-97	REPAINT EXTERIOR OF BLDG."A"
		24	50	57		
Task Order 0109K7		24	50			
'0110C7	10-Jan-97				23-Jan-97	PERFORM P.M.
		4	0	30		
Task Order 0110C7		4	0			
'0110D7	10-Jan-97				23-Jan-97	PERFORM P.M.
		22	0	13		
Task Order 0110D7		22	0			
'0111D7	16-Jan-97				2-Feb-97	SUPPORT I.H
		19	0	22		
		20	0	31		
Task Order 0111D7		39	0			
'0111F7	22-Jan-97				3-Mar-97	REPL LEAKING RAMS
		0	0			
		51	5	29		
		53	0	31		
Task Order 0111F7		104	5			
'0111M7	22-Jan-97				29-Jan-97	REPR DRIVE MOTOR
		0	23			
		16	0	13		
		24	0	29		
		14	0	31		
		4	0	43		
		4	0	72		
Task Order 0111M7		62	23			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0111N7	17-Jan-97				24-Jan-97	TRANSPORT 2 BOXES
		18	0	31		
Task Order 0111N7		18	0			
'0111P7	16-Jan-97				22-Jan-97	RE-INSULATE STEAM PIPE
		0	115			
		54	48	25		
Task Order 0111P7		54	163			
'0111R7	21-Jan-97				12-Mar-97	HOT PATCH ROOF
		58	0	59		
Task Order 0111R7		58	0			
'0111S7	31-Jan-97				8-Apr-97	REPAIR ROOF
		37	83	35		
		4	0	57		
		28	0	59		
Task Order 0111S7		69	83			
'0112B7	24-Jan-97				28-Jan-97	REPAIR VALVE V3503V
		18	0	29		
		14	0	31		
Task Order 0112B7		32	0			
'0112C7	24-Jan-97				29-Jan-97	REPAIR CONDENSATE LINE
		43	0	25		
		8	47	33		
Task Order 0112C7		51	47			
'0112D7	24-Jan-97				27-Jan-97	REPR LEAK ON PIPING
		0	209			
		11	0	22		
		11	0	25		
		22	63	33		
Task Order 0112D7		44	272			
'0112E7	24-Jan-97				30-May-97	REPAIR VACUUM PUMP P1
		0	7108			
		332	168	29		
		217	0	31		
		127	0	33		
		0	5	35		
		24	0	71		
Task Order 0112E7		700	7281			
'0112F7	27-Jan-97				31-Jan-97	REPR OR REPL INSULATION
		32	0	25		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
Task Order 0112F7		32	0			
'0112G7	27-Jan-97				18-Jun-97	REPLACE STEAM JACKET
		0	0			
		4	0	25		
		16	7	33		
Task Order 0112G7		20	7			
'0112I7	28-Jan-97				28-Jan-97	REPLACE BATTERIES
		10	0	19		
		10	0	31		
Task Order 0112I7		20	0			
'0112L7	29-Jan-97				14-May-97	REPLACE WINDOW UINT A/C
		0	93			
		10	5	19		
		2	0	30		
		12	8	35		
		2	0	57		
Task Order 0112L7		26	106			
'0112M7	29-Jan-97				10-Feb-97	REPAIR CRACK IN DRAIN LINE
		0	108			
		19	0	33		
Task Order 0112M7		19	108			
'0122A7	6-Jan-97				7-Jan-97	INVESTIGATE VIBRATION PROBLEM
Task Order 0122A7		0	0			
'0122B7	7-Jan-97				24-Jan-97	REPLACE WATER PUMP MOTOR
		0	2148			
		14	0	13		
		0	2	19		
		6	0	22		
		40	1	29		
		8	0	31		
Task Order 0122B7		68	2151			
'0122C7	8-Jan-97				23-Jan-97	REPR HYDR LEAKS
		8	0	29		
		20	0	33		
Task Order 0122C7		28	0			
'0122D7	8-Jan-97				19-Mar-97	REMOVE INSULATION
		0	1143			
		44	0	25		
Task Order 0122D7		44	1143			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0122E7	7-Jan-97				17-Jan-97	CHANGE PUMP BEARINGS/SEALS
		0	643			
		52	0	29		
Task Order 0122E7		52	643			
'0122J7	14-Jan-97				3-Feb-97	REMOVE/REINSTALL CPV VALVE
		0	886			
		4	0	26		
		16	0	29		
		12	0	33		
Task Order 0122J7		32	886			
'0122K7	15-Jan-97				30-Apr-97	REPAIR LEAK IN STEAM COIL
		22	0	30		
Task Order 0122K7		22	0			
'0122L7	16-Jan-97				11-Apr-97	REPAIR 2 SAGINAW SCREWS
		0	699	30		
		125	0	31		
Task Order 0122L7		125	699			
'0122M7	16-Jan-97				29-Jan-97	REPAIR RELIEF VALVE
		8	0	13		
		6	0	30		
		8	0	33		
		3	0	61		
Task Order 0122M7		25	0			
'0122N7	16-Jan-97				17-Jan-97	REPLACE COMPRESSORS
		0	901			
		36	57	30		
Task Order 0122N7		36	958			
'0122O7	21-Jan-97				13-Feb-97	REMOVE BLINDS FROM WINDOWS
		24	141	35		
Task Order 0122O7		24	141			
'0122R7	27-Jan-97				3-Feb-97	REMOVE VALVE
		0	85			
		16	0	25		
		16	0	31		
Task Order 0122R7		32	85			
'0122U7	28-Jan-97				12-Feb-97	REBUILD WATER PUMP
		56	72	29		
Task Order 0122U7		56	72			
'0122W7	4-Feb-97				11-Feb-97	INSULATE SUPPLY LINE

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		20	0	25		
Task Order 0122W7		20	0			
'0122X7	5-Feb-97				4-Apr-97	REPLACE APPROX 27 FIXTURES
		0	1013			
		64	243	19		
		0	0	29		
Task Order 0122X7		64	1256			
'0122Y7	27-Jan-97				24-Mar-97	REBUILD PUMP SHAFT
		0	117			
		8	0	13		
		93	28	29		
		11	0	31		
Task Order 0122Y7		112	145			
'0122Z7	27-Jan-97					SUPPORT IN-HOUSE/STAGING/RIG
		0	15	19		
		158	0	31		
		27	0	61		
Task Order 0122Z7		185	15			
'0130E7	10-Jan-97				17-Jan-97	PERFORM P.M.
		1	0	13		
Task Order 0130E7		1	0			
'0131C7	8-Jan-97					REMOVE INSULATION
		0	2821			
		450	1726	25		
		602	149	63		
		27	0	84		
Task Order 0131C7		1079	4696			
'0131D7	8-Jan-97				15-May-97	PAINT HOUSING
		0	344			
		114	93	29		
		0	21	35		
		243	0	57		
		258	0	61		
		24	0	71		
Task Order 0131D7		639	458			
'0131F7	8-Jan-97				9-Jan-97	REPLACE CONDENSATE LINE
		16	0	25		
		16	0	33		
Task Order 0131F7		32	0			
'0131I7	14-Jan-97				26-Feb-97	ROOF LEAK-REMOVE WALK-WAY

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		9	0	31		
		0	131	35		
		47	0	59		
Task Order 0131I7		56	131			
'0131L7	17-Jan-97				31-Jan-97	DAMADGE/MISSING INSULATION
		0	699			
		9	324	19		
		160	0	25		
		50	0	61		
Task Order 0131L7		219	1023			
'0131M7	17-Jan-97				29-Jan-97	REPAIR BREAK IN WATER PIPE
Task Order 0131M7		0	0			
'0131O7	7-Mar-97					INSTALL STRIP HEATER
Task Order 0131O7		0	0			
'0131P7	28-Jan-97				31-Mar-97	RECERTFY RELIEF VALVES
		0	0			
		0	144	33		
		40	0	41		
Task Order 0131P7		40	144			
'0131W7	22-Jan-97				4-Feb-97	VOLT BREAKERS
		72	0	13		
Task Order 0131W7		72	0			
'0131X7	21-Jan-97				27-Jan-97	PLUG HOLES
		0	101			
		24	0	25		
Task Order 0131X7		24	101			
'0131Z7	21-Jan-97				23-Jan-97	BROKEN WATER LINE
		0	346			
		7	0	19		
		39	18	25		
		20	199	33		
Task Order 0131Z7		66	563			
'0132A7	22-Jan-97				22-Jan-97	REPAIR BROKEN WATER LINE
		6	0	19		
		8	0	25		
		8	0	33		
Task Order 0132A7		22	0			
'0132L7	27-Jan-97				6-Feb-97	P.M. FOLLOW UP
		0	163			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		128	0	30		
Task Order 0132L7		128	163			
'0132O7	30-Jan-97				4-Mar-97	INSTALL FAN FOR PANEL
		0	108			
		25	0	19		
		0	7	35		
Task Order 0132O7		25	115			
'0132P7	30-Jan-97				11-Feb-97	REPAIR BAND SAW
		0	682			
		24	0	29		
Task Order 0132P7		24	682			
'0132R7	30-Jan-97				3-Feb-97	REINSULATE EXHAUST STAKE
		24	0	25		
Task Order 0132R7		24	0			
'0133M7	15-Jan-97				7-Apr-97	REPAIR UNDERGROUND WATER LINE
Task Order 0133M7		0	0			
'0140C7	19-Dec-96				31-Jan-97	PHOTO EQUIP
		0	423			
		195	64	29		
Task Order 0140C7		195	487			
'0140D7	19-Dec-96				31-Jan-97	MODIFY EQUIPMENT
		0	212			
		352	51	29		
Task Order 0140D7		352	263			
'0140F7	10-Jan-97				17-Jan-97	PERFORM P.M.
		8	0	13		
Task Order 0140F7		8	0			
'0140G7	28-Jan-97				7-Feb-97	PERFORM P.M.
		8	0	29		
Task Order 0140G7		8	0			
'0142D7	23-Dec-96				27-Jan-97	CLEAN UP OIL SPILL(FUEL TANK)
		6	0	31		
		32	0	61		
Task Order 0142D7		38	0			
'0142H7	9-Jan-97				25-Apr-97	CHANGE OIL
		0	2399			
		108	138	29		
		13	0	31		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		16	0	71		
Task Order 0142H7		137	2537			
'0142R7	14-Jan-97				20-Feb-97	ROOF LEAK REPR
		0	43	29		
		44	0	59		
Task Order 0142R7		44	43			
'0142S7	14-Jan-97				7-Feb-97	REPAIR TAR KETTLE
		0	49			
		2	0	22		
		8	0	43		
		34	0	59		
		8	0	72		
Task Order 0142S7		52	49			
'0142T7	14-Jan-97				11-Apr-97	REPL EXPANSION JOINT
		16	0	29		
		6	0	43		
		6	0	61		
Task Order 0142T7		28	0			
'0142W7	25-Apr-97				27-May-97	PAINT SUBSTATION FENCE
		56	133	57		
Task Order 0142W7		56	133			
'0143D7	22-Jan-97				14-Oct-97	REPAIR HOT WATER VALVES
		0	1928			
		69	579	30		
Task Order 0143D7		69	2507			
'0143G7	28-Jan-97				17-Apr-97	REPL COIL MOTORS
		0	397			
		36	85	30		
Task Order 0143G7		36	482			
'0143P7	30-Jan-97				29-May-97	CLEAN RETURN DUCTS
		40	0	30		
Task Order 0143P7		40	0			
'0143R7	31-Jan-97				8-Mar-97	BEARINGS IN PUMP
		0	1132			
		7	0	19		
		48	2	29		
Task Order 0143R7		55	1134			
'0143V7	1-Apr-97				27-May-97	SURVEY EQUIP
		0	21734			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		26	0	30		
		20	0	31		
Task Order 0143V7		46	21734			
'0143W7	4-Feb-97				28-Apr-97	REPRS TO CHILLERS
		18	0	30		
Task Order 0143W7		18	0			
'0150C7	19-Dec-96				31-Jan-97	POWER DISTRIBUTION
Task Order 0150C7		0	0			
'0150E7	19-Dec-96				31-Jan-97	MONTHLY POWER BILLING
		24	0	64		
Task Order 0150E7		24	0			
'0150F7	19-Dec-96				31-Jan-97	POWER DISTRIBUTION
		48	0	13		
		16	23	19		
Task Order 0150F7		64	23			
'0150G7	19-Dec-96				31-Jan-97	SEWAGE LIFT STATIONS
		0	301			
		44	0	29		
		0	35	35		
		103	0	61		
		24	0	71		
Task Order 0150G7		171	336			
'0151B7	14-Jan-97				21-Jan-97	PULL 2 RELIEF VALVES
		24	0	26		
		30	0	31		
		16	0	33		
Task Order 0151B7		70	0			
'0151C7	17-Jan-97				18-Mar-97	REPAIR LEAKING VALVES
		0	3717			
		5	3	19		
		3	0	26		
		36	0	29		
		28	0	31		
		18	0	33		
Task Order 0151C7		90	3720			
'0151E7	27-Jan-97				5-Mar-97	REPR LEAK ON HEATING COIL
		0	137			
		2	0	19		
		18	0	25		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		47	20	30		
		16	0	35		
Task Order 0151E7		83	157			
'0151G7	28-Jan-97				2-Apr-97	REPR DC TRIP CIRCUIT
		0	133			
		183	21	19		
Task Order 0151G7		183	154			
'0151H7	30-Jan-97				20-Mar-97	INSPEC BLOWER FAN FOR DRYER
		0	1832			
		7	0	19		
		78	0	29		
		19	0	31		
		16	1	33		
Task Order 0151H7		120	1833			
'0160D7	19-Dec-96				31-Jan-97	DIESELS
		0	62			
		35	0	29		
Task Order 0160D7		35	62			
'0162A7	9-Jan-97					INSTALL OVERHANG
		118	0	41		
Task Order 0162A7		118	0			
'0162C7	6-Jan-97				17-Jan-97	REPL BLADES ON MACHINE
		48	10	29		
		0	11	35		
Task Order 0162C7		48	21			
'0162D7	7-Jan-97				13-Jan-97	C/T LEAKING-LOCATE/REPAIR
		60	64	33		
Task Order 0162D7		60	64			
'0162E7	8-Jan-97				4-Feb-97	REPL SAFETY FOAM
		0	284			
		32	0	25		
Task Order 0162E7		32	284			
'0162F7	8-Jan-97				17-Jan-97	REPAIR BROKEN BAND SAW WHEEL
		0	536			
		32	0	29		
Task Order 0162F7		32	536			
'0162M7	9-Jan-97				22-Jan-97	REPAIR ROOF (HOT PATCH)
		0	228	35		
		44	0	59		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		4	0	61		
Task Order 0162M7		48	228			
'0162V7	16-Jan-97				18-Feb-97	PURCHASE/INSTALL BASIN HEATER
		0	1890			
		7	0	19		
Task Order 0162V7		7	1890			
'0163A7	22-Jan-97				29-Jan-97	REPLACE HOT WATER VALVE
		14	0	25		
		24	11	30		
Task Order 0163A7		38	11			
'0163C7	23-Jan-97				7-Apr-97	SEWAGE LEAKING FROM MANHOLE
		0	2643			
		14	0	29		
		96	0	33		
		0	15	35		
		14	0	58		
		146	0	61		
Task Order 0163C7		270	2658			
'0163E7	24-Jan-97				30-Jun-97	REPLACE CONDENSATE PUMP
		0	4822			
		20	93	19		
		12	0	25		
		12	0	29		
		15	0	31		
		46	480	33		
Task Order 0163E7		105	5395			
'0163L7	30-Jan-97				3-Mar-97	REPL STEEL PIPE
		0	206			
		4	0	22		
		16	0	25		
		22	44	33		
Task Order 0163L7		42	250			
'0163M7	30-Jan-97				7-Feb-97	REPAIR DEAD RECEPTACLE
		38	109	19		
Task Order 0163M7		38	109			
'0163N7	10-Apr-97				23-May-97	REPL LIEBERT AC
		0	1532			
		16	0	22		
		72	0	25		
		80	87	30		
		28	0	31		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		99	478	33		
		0	24	35		
		9	0	43		
		12	0	58		
		9	0	61		
Task Order 0163N7		325	2121			
'0163R7	10-Feb-97					REPL ROOF LEVELS
		96	0	41		
Task Order 0163R7		96	0			
'0190A7	23-Jan-97				14-Feb-97	SHUTDOWN
Task Order 0190A7		0	0			
'0190B7	21-Nov-96				24-Jan-97	SHUTDOWN
Task Order 0190B7		0	0			
'0190C7	15-Nov-96				24-Jan-97	SHUTDOWN
Task Order 0190C7		0	0			
'0190D7	15-Nov-96				24-Jan-97	SHUTDOWN
		0	188			
		16	0	13		
		56	53	29		
		104	400	30		
		8	0	33		
		14	0	71		
Task Order 0190D7		198	641			
'0190E7	13-Jan-97				13-Feb-97	SHUTDOWN
		0	217			
		0	13	29		
		0	110	30		
		0	0	71		
Task Order 0190E7		0	340			
'0190F7	14-Nov-96				7-Jan-97	SHUTDOWN
		4	7	29		
		8	0	30		
Task Order 0190F7		12	7			
'0190G7	14-Nov-96				30-Jan-97	SHUTDOWN
		2	0	29		
Task Order 0190G7		2	0			
'0190H7	6-Jan-97				6-Jan-97	SHUTDOWN
		1	0	29		
Task Order 0190H7		1	0			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'019017	31-Oct-96				27-Jan-97	PERFORM P.M.
		4	0	29		
Task Order 019017		4	0			
'0190J7	17-Dec-96				31-Jan-97	SHUTDOWN
		0	101			
		80	0	13		
		0	32	19		
		24	0	29		
		24	77	30		
Task Order 0190J7		128	210			
'0190K7	10-Dec-96				9-Jan-97	SHUTDOWN
Task Order 0190K7		0	0			
'0190L7	30-Dec-96				10-Jan-97	SHUTDOWN
		0	559			
		6	0	29		
		80	135	30		
Task Order 0190L7		86	694			
'0190M7	8-Jan-97				15-Jan-97	SHUTDOWN
		0	130			
		24	32	30		
Task Order 0190M7		24	162			
'0200B7	23-Jan-97				28-Feb-97	REPL BATTERIES
		0	642			
		255	0	19		
Task Order 0200B7		255	642			
'0200C7	22-Jan-97				28-Feb-97	WATER TREATMENT
		0	327			
		292	88	30		
Task Order 0200C7		292	415			
'0200E7	23-Jan-97				28-Feb-97	PORTABLE EQUIPMENT
		24	0	29		
		23	0	71		
Task Order 0200E7		47	0			
'0200F7	23-Jan-97				28-Feb-97	ROOF INSPECTION
Task Order 0200F7		0	0			
'0200G7	23-Jan-97				28-Feb-97	ABSORPTION MACHINES
		48	0	30		
Task Order 0200G7		48	0			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0200H7	23-Jan-97				28-Feb-97	EMERGENCY LIGHTS
		0	37	35		
		136	0	67		
Task Order 0200H7		136	37			
'0200I7	23-Jan-97				28-Feb-97	TELECOMMUNICATIONS
		30	0	19		
Task Order 0200I7		30	0			
'0200K7	23-Jan-97				28-Feb-97	FIRE ALARMS FIRE DETECTORS
		0	413			
		0	16	19		
		681	0	67		
Task Order 0200K7		681	429			
'0200L7	23-Jan-97				28-Feb-97	CERTIFY GAGES
		0	1389			
		158	0	26		
		0	2066	33		
Task Order 0200L7		158	3455			
'0201B7	5-Feb-97				2-May-97	OFF-LOAD TRANSFORMERS
		30	0	31		
Task Order 0201B7		30	0			
'0201G7	28-Feb-97				14-Mar-97	MOVE WEIGHTS
		20	0	31		
		40	0	61		
Task Order 0201G7		60	0			
'0210F7	20-Feb-97				4-Mar-97	P.M.
		1	0	19		
Task Order 0210F7		1	0			
'0211C7	4-Feb-97				5-Mar-97	REPR GATES
		32	0	58		
Task Order 0211C7		32	0			
'0211H7	6-Feb-97				10-Feb-97	TRANSPORT HEATER BUNDLE
		20	0	31		
Task Order 0211H7		20	0			
'0211J7	7-Feb-97				24-Mar-97	REPLACE HEAT TAPE ON LINES
		26	443	19		
		15	0	25		
Task Order 0211J7		41	443			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0211K7	24-Feb-97				28-Feb-97	MOVE BOXES/REMOVE INSULATION
		16	0	25		
		24	0	31		
Task Order 0211K7		40	0			
'0211L7	12-Feb-97				14-Feb-97	SECURE ACOUSTIC WEDGES
'0211N7	13-Feb-97				12-Mar-97	RE-LAMP TEST CELL AREA
		0	602			
		18	95	19		
Task Order 0211N7		18	697			
'0211P7	14-Feb-97				5-Mar-97	REPR OIL SEPERATORS
		61	0	29		
		30	0	31		
		26	0	33		
Task Order 0211P7		117	0			
'0211Q7	14-Feb-97				5-May-97	REPR INSULATION
		0	1848			
		394	0	25		
		44	0	61		
Task Order 0211Q7		438	1848			
'0211S7	14-Feb-97				24-Feb-97	REPLACE A/C COMPRESSOR
		0	2021			
		21	84	30		
		20	0	31		
Task Order 0211S7		41	2105			
'0211U7	18-Feb-97				19-Feb-97	REPAIR VACUUM VALVE MACH 8
		0	37			
		1	0	19		
		2	0	26		
		10	0	29		
		10	0	33		
Task Order 0211U7		23	37			
'0211X7	20-Feb-97				11-Jun-97	REPLACE HYDRAULIC HOSES
		0	2622			
		6	0	26		
		48	0	33		
Task Order 0211X7		54	2622			
'0211Z7	20-Feb-97				21-Mar-97	INSTALL REPLACEMENT VALVES
		0	496			
		1	0	26		
		37	0	31		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		48	122	33		
Task Order 0211Z7		86	618			
'0213A7	18-Apr-97				10-Jul-97	REPLACE FILTER ELEMENT
		0	1110			
		32	0	22		
		154	1028	29		
		61	0	31		
Task Order 0213A7		247	2138			
'0213B7	20-Feb-97				27-Mar-97	REPLACE SEALS ON WATER PUMP
		0	743			
		50	0	29		
Task Order 0213B7		50	743			
'0213D7	20-Feb-97				25-Mar-97	REINSULATE RECLAIMER
		0	1196			
		186	0	25		
Task Order 0213D7		186	1196			
'0213E7	20-Feb-97				27-Feb-97	REMOVE/REPLACE INSULATION
		0	64			
		88	0	25		
Task Order 0213E7		88	64			
'0213G7	20-Feb-97				24-Feb-97	DRAIN/FLUSH LUBRICATING SYSTEM
		30	0	29		
Task Order 0213G7		30	0			
'0213H7	20-Feb-97				20-Mar-97	REMOVE REPLACE DRIVE MOTOR
		0	544			
		16	0	13		
		16	0	22		
		145	61	29		
		102	0	31		
		15	0	43		
		4	0	72		
Task Order 0213H7		298	605			
'0213J7	16-May-97				18-Jul-97	RELAMP BASEMENT
		64	1382	19		
Task Order 0213J7		64	1382			
'0213K7	24-Feb-97				11-Mar-97	REPLACE LIGHTS
		27	45	19		
Task Order 0213K7		27	45			
'0213L7	21-Feb-97				19-Mar-97	REPAIR VALVES ON NOZZLE

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
Task Order 0213L7		0	0			
'0213N7	26-Feb-97				18-Sep-97	VAC VALVE STICKS
		0	216			
		81	403	19		
		16	0	25		
		10	0	29		
		2	0	57		
Task Order 0213N7		109	619			
'0213P7	13-Mar-97				28-Apr-97	INSTALL 6 PULLEYS
		0	3131			
		48	1	29		
		10	0	31		
Task Order 0213P7		58	3132			
'0213R7	28-Feb-97				4-Mar-97	REPR LEAKS 17FT SPHERE
		8	0	22		
		16	20	33		
Task Order 0213R7		24	20			
'0213T7	5-Mar-97				11-Apr-97	INST GREASE FITTINGS
		18	0	29		
Task Order 0213T7		18	0			
'0220C7	20-Feb-97				12-Mar-97	P.M.
		16	0	30		
Task Order 0220C7		16	0			
'0220D7	20-Feb-97				11-Mar-97	P.M.
		24	363	30		
Task Order 0220D7		24	363			
'0220E7	20-Feb-97				14-Mar-97	P.M.
		8	0	13		
Task Order 0220E7		8	0			
'0220J6	18-Jun-97					REPLACE PRESSURE SWITCH
Task Order 0220J6		0	0			
'0222H7	13-Feb-97				4-Apr-97	REPL PLATES
		0	38			
		47	0	22		
		29	0	31		
		0	472	35		
		180	0	57		
Task Order 0222H7		256	510			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0222J7	18-Feb-97				21-Mar-97	REPLACE 30 EA 750W LAMPS
		30	318	19		
Task Order 0222J7		30	318			
'0222L7	18-Feb-97				4-Apr-97	CLEAN CABLE TUNNEL
		0	387			
		4	0	29		
		25	0	31		
		119	0	61		
Task Order 0222L7		148	387			
'0222M7	13-Feb-97				18-Feb-97	REPAIR COUPLING MAIN DRIVE
		0	150			
		89	371	29		
		74	0	31		
Task Order 0222M7		163	521			
'0222O7	6-Mar-97				28-Mar-97	PLUMB THE 8400 ESP SYSTEM
		0	1015			
		50	94	33		
Task Order 0222O7		50	1109			
'0222Q7	24-Feb-97				18-Mar-97	REPR SUMP PUMP GRATE
		8	0	22		
		2	0	26		
		2	0	29		
		16	7	33		
Task Order 0222Q7		28	7			
'0222X7	21-Feb-97				25-Feb-97	CHECK MOTOR BALANCE/BEARINGS
		8	0	13		
		39	0	29		
		4	0	33		
Task Order 0222X7		51	0			
'0222Y7	26-Feb-97				23-Feb-97	REPR SUMP PUMP CLEAN UP WATER
		24	0	29		
Task Order 0222Y7		24	0			
'0222Z7	4-Mar-97				24-Mar-97	INSTALL LIGHTS IN DOOR
		0	282			
		46	111	19		
Task Order 0222Z7		46	393			
'0223A7	26-Feb-97				19-Mar-97	REFILL COMP OIL/CLEAN UP SPILL
		0	1406			
		31	0	29		
		77	0	61		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
Task Order 0223A7		108	1406			
'0223B7	24-Mar-97				15-Sep-97	INSTALL WALKWAY
		61	0	41		
Task Order 0223B7		61	0			
'0223D7	27-Feb-97				25-Mar-97	REPL SUMP PUMP GRATE
		8	0	22		
		1	0	26		
		16	23	33		
Task Order 0223D7		25	23			
'0223E7	5-Mar-97				30-Jul-97	REMOVE AND REPL INSULATION
		0	2366			
		540	888	25		
		66	0	31		
		72	0	61		
Task Order 0223E7		678	3254			
'0223F7	7-Mar-97					REMOVE INSULATION
		312	1271	25		
		0	27	29		
		393	0	31		
		0	41	33		
		0	92	35		
		44	0	61		
Task Order 0223F7		749	1431			
'0223H7	7-Mar-97					INDUCTION HEAT IF REQUIRED
		0	56	19		
		38	0	31		
Task Order 0223H7		38	56			
'0223I7	7-Mar-97				29-Aug-97	CONSTRUCT STAGING
		8	0	22		
		468	131	29		
		235	0	31		
		16	0	35		
Task Order 0223I7		727	131			
'0223J7	7-Mar-97					SUPPORT IN HOUSE
		340	0	29		
		233	0	31		
Task Order 0223J7		573	0			
'0223K7	7-Mar-97				8-Aug-97	REMOVE METAL AND WOOD STAGING
		313	380	29		
		115	0	31		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		28	41	35		
		0	0	61		
Task Order 0223K7		456	421			
'0223L7	5-Mar-97					CLEAN TUNNEL CIRCUITS
		0	121	19		
		28	232	30		
		82	0	31		
		22	0	33		
		116	123	35		
		6	493	43		
		0	67	59		
		1087	483	61		
Task Order 0223L7		1341	1519			
'0224A7	21-Apr-97				23-Apr-97	REPAIR SYKHRONOUS MOTOR
		32	0	13		
		55	0	31		
Task Order 0224A7		87	0			
'0224B7	22-Apr-97				22-Apr-97	CLEAN UP OIL SPILL
		0	102	35		
		32	0	61		
Task Order 0224B7		32	102			
'0233H7	7-Feb-97				27-Feb-97	ALIGN BLOWER MOTOR INST PINS
		0	106			
		4	0	22		
		1	0	26		
		201	44	29		
		118	0	31		
		40	0	33		
Task Order 0233H7		364	150			
'0233I7	10-Feb-97				26-Mar-97	CLEAN OILY AREA
		0	96			
		10	0	31		
		0	216	35		
		161	0	61		
Task Order 0233I7		171	312			
'0233K7	11-Feb-97				12-Feb-97	CLEAN AB FROM FLOOR
		0	511			
		69	0	25		
Task Order 0233K7		69	511			
'0233M7	13-Feb-97				5-Mar-97	RE-LAMP SPIN TUNNEL ATTIC LIGH
Task Order 0233M7		0	0			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0233O7	14-Feb-97				20-Mar-97	REPAIR UNIT HEATER ON STEAM LN
		0	390			
		3	0	19		
		26	0	25		
		8	0	31		
		28	133	33		
		31	0	61		
Task Order 0233O7		96	523			
'0233S7	20-Feb-97				28-Feb-97	CLEAN MEGGER 8500 CFM MOTOR
		44	0	13		
Task Order 0233S7		44	0			
0233T7	24-Feb-97				21-Mar-97	CLEAN CT PUMP
		22	5	29		
		8	0	71		
Task Order 0233T7		30	5			
'0233X7	26-Feb-97					REPR OR REPL ROOF
		51	0	41		
Task Order 0233X7		51	0			
'0234C7	27-Feb-97				7-Apr-97	REPL ELBOW PROCESS LINE
		0	1943			
		39	0	22		
		2	0	26		
		25	0	31		
		64	210	33		
		8	0	57		
Task Order 0234C7		138	2153			
'0234E7	3-Mar-97				14-Apr-97	CLEAN OIL SPOTS
		4	0	31		
		0	110	35		
		217	0	61		
Task Order 0234E7		221	110			
'0234G7	3-Mar-97				28-Apr-97	REPL ELECTRONIC UNITS
		0	1588			
		6	61	30		
		30	140	33		
Task Order 0234G7		36	1789			
'0234I7	28-Feb-97				15-May-97	REPAIR A/C UNIT
		0	4735			
		1	0	19		
		61	50	30		
		14	0	31		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		0	14	35		
Task Order 0234I7		76	4799			
'0240C7	23-Jan-97				28-Feb-97	PHOTO EQUIP
		0	276			
		148	0	29		
Task Order 0240C7		148	276			
'0240D7	23-Jan-97				28-Feb-97	MODIFY EQUIPT
		0	3268			
		346	647	29		
		24	0	71		
Task Order 0240D7		370	3915			
'0242P7	18-Feb-97				21-Apr-97	CLEAN GUTTERS
		0	14	35		
		44	0	59		
Task Order 0242P7		44	14			
'0242Q7	14-Feb-97				19-Feb-97	BUSTED DRAIN LINE
		24	0	33		
		12	0	61		
Task Order 0242Q7		36	0			
'0242R7	19-Feb-97				24-Feb-97	PULL VACUUM SYSTEM FOR GRINDER
		0	164			
		8	10	29		
		13	0	31		
		0	0	43		
Task Order 0242R7		21	174			
'0242U7	21-Feb-97				6-May-97	REPAIR SHAFT IN AIR HANDLER
		32	0	30		
Task Order 0242U7		32	0			
'0242Z7	24-Feb-97				11-Jul-97	RELAMP MAIN SHOP
		78	1110	19		
		8	0	31		
		48	0	35		
		27	0	61		
Task Order 0242Z7		161	1110			
'0243H7	28-Feb-97				5-Mar-97	REINSULATE ROOM 111
		34	0	25		
Task Order 0243H7		34	0			
'0243I7	3-Mar-97					REPLACE HUMIDIFIER

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		0	829	30		
Task Order 024317		0	829			
'0250C7	23-Jan-97				28-Feb-97	POWER DISTRIBUTION
		39	0	13		
Task Order 0250C7		39	0			
'0250E7	23-Jan-97				28-Feb-97	METER READINGS
		24	0	64		
Task Order 0250E7		24	0			
'0250F7	23-Jan-97				28-Feb-97	SUBSTATION INSPECT
		64	0	13		
		0	19	19		
Task Order 0250F7		64	19			
'0250G7	23-Jan-97				28-Feb-97	SEWAGE LIFT STATIONS
		76	0	29		
		8	0	31		
		56	0	61		
		24	0	71		
Task Order 0250G7		164	0			
'0252D7	10-Feb-97				3-Apr-97	CLEAN OIL AND LEAVES
Task Order 0252D7		0	0			
'0252E7	10-Feb-97				28-Apr-97	TRANSFER CIRCUITS
		198	169	19		
Task Order 0252E7		198	169			
'0252F7	10-Feb-97				7-Aug-97	TRANSFER CIRCUITRY
		955	700	19		
		16	0	31		
Task Order 0252F7		971	700			
'0252G7	7-Feb-97				3-Mar-97	REPL MOTOR VALVE
		0	1381			
		6	0	19		
		2	0	26		
		16	0	29		
		19	0	31		
		8	0	33		
Task Order 0252G7		51	1381			
'0252H7	10-Feb-97				11-Feb-97	REPAIR SECTION OF 350PSI PIPE
		12	0	22		
		24	0	33		
Task Order 0252H7		36	0			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0252I7	13-Feb-97				2-Apr-97	CHANGE WATER SOFTNER
		10	25	19		
		63	0	31		
		4	0	61		
Task Order 0252I7		77	25			
0252J7	13-Feb-97				30-Jun-97	DIELECTRIC TESTING
		0	71			
		290	0	13		
		0	18	90		
Task Order 0252J7		290	89			
'0252K7	18-Feb-97				17-Mar-97	INSTALL NEW HEAD INTERCOOLER
		0	120			
		14	0	25		
		4	0	26		
		124	0	29		
		80	0	31		
		30	17	33		
Task Order 0252K7		252	137			
'0252L7	18-Feb-97				18-Jun-97	REPLACE PRESSURE SWITCH
		0	1747			
		8	0	29		
		16	0	33		
		7	0	43		
Task Order 0252L7		31	1747			
'0252M7	19-Feb-97				27-Feb-97	REPAIR LN2 LEAK ON TRANSFORMER
		36	0	13		
Task Order 0252M7		36	0			
'0252N7	26-Feb-97				10-Mar-97	REPR HEATER/REM/REPL INSULATIO
		0	1221			
		16	0	19		
		116	120	25		
Task Order 0252N7		132	1341			
'0260D7	23-Jan-97				28-Feb-97	DIESELS
		32	0	29		
		16	0	71		
Task Order 0260D7		48	0			
'0260G7	20-Feb-97				14-Mar-97	P.M.
		4	0	30		
Task Order 0260G7		4	0			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0260H7	20-Feb-97				14-Mar-97	P.M.
		16	0	30		
Task Order 0260H7		16	0			
'0260I7	20-Feb-97				5-Mar-97	P.M.
		8	93	30		
Task Order 0260I7		8	93			
'0262B7	4-Feb-97				6-Feb-97	BROKEN SEWER LINE
		0	32			
		28	0	33		
Task Order 0262B7		28	32			
'0262N7	13-Feb-97				31-Mar-97	REPL HEAT COIL
		24	129	30		
Task Order 0262N7		24	129			
'0262P7	13-Feb-97				24-Mar-97	REALIGN GUIDES ON TYSAMAN SAW
		40	0	29		
Task Order 0262P7		40	0			
'0262Q7	13-Feb-97				24-Feb-97	REPAIR DOOR NEAR HANDICAP RAMP
		0	0			
Task Order 0262Q7		0	0			
'0262Z7	7-Mar-97				20-Mar-97	PAINT STATIC GROUND CIRCLES
		0	17			
		0	137	35		
		40	0	57		
Task Order 0262Z7		40	154			
'0290A7	15-Jan-97				14-Feb-97	SHUTDOWN
		0	292			
		0	172	29		
Task Order 0290A7		0	464			
'0290B7	8-Jan-97				27-Feb-97	SHUTDOWN
		0	898			
		127	0	13		
		60	4	29		
		64	75	30		
Task Order 0290B7		251	977			
'0290C7	21-Feb-97				25-Apr-97	P.M.
		0	420			
		358	0	13		
		0	172	19		
		66	234	29		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
Task Order 0290C7		424	826			
0290D7	26-Dec-96				6-Mar-97	SHUTDOWN
		0	939			
		1	0	13		
		4	0	26		
		121	50	29		
		48	0	33		
Task Order 0290D7		174	989			
'0290G7	27-Nov-96				6-Feb-97	SHUTDOWN
		0	294			
		16	0	13		
		64	30	29		
		36	118	30		
Task Order 0290G7		116	442			
'0290H7	21-Nov-96				7-Feb-97	SHUTDOWN
		2	0	29		
		32	9	30		
Task Order 0290H7		34	9			
'0290I7	23-Jan-97				25-Feb-97	SHUTDOWN
		0	141			
		20	0	29		
		95	557	30		
Task Order 0290I7		115	698			
'0290J7	21-Jan-97				6-Feb-97	SHUTDOWN
Task Order 0290J7		0	0			
'0290K7	25-Nov-96				7-Feb-97	SHUTDOWN
		4	0	29		
		8	3	30		
Task Order 0290K7		12	3			
'0290L7	16-Apr-97				16-Jun-97	SHUTDOWN
		83	307	30		
Task Order 0290L7		83	307			
'0300B7	14-Feb-97				31-Mar-97	REPLACE BATTERIES
		0	633			
		258	634	19		
Task Order 0300B7		258	1267			
'0300C7	14-Feb-97				31-Mar-97	WATER TREATMENT
		244	0	30		
Task Order 0300C7		244	0			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0300E7	14-Feb-97				31-Mar-97	PORTABLE EQUIPMENT
		28	0	29		
		24	0	71		
Task Order 0300E7		52	0			
'0300G7	14-Feb-97				31-Mar-97	PURGE ABSORPTION MACHINE
		62	0	30		
Task Order 0300G7		62	0			
'0300H7	14-Feb-97				31-Mar-97	EMERGENCY LIGHTS
		150	0	67		
Task Order 0300H7		150	0			
'0300I7	14-Feb-97				31-Mar-97	TELECOMMUNICATE
		19	0	19		
Task Order 0300I7		19	0			
'0300K7	14-Feb-97				31-Mar-97	FIRE ALARM FIRE SUPPRESSION
		0	31			
		0	58	19		
		631	0	67		
Task Order 0300K7		631	89			
'0300L7	14-Feb-97				31-Mar-97	CERTIFY GAGES
		0	394	19		
		144	0	26		
		0	1905	33		
Task Order 0300L7		144	2299			
'0310C7	12-Mar-97				28-Mar-97	PERFORM P.M.
		4	0	13		
Task Order 0310C7		4	0			
'0310E7	12-Mar-97				26-Mar-97	PERFORM P.M.
		4	0	29		
Task Order 0310E7		4	0			
'0310H7	12-Mar-97				26-Mar-97	PERFORM P.M.
		3	7	30		
Task Order 0310H7		3	7			
'0310I7	12-Mar-97				26-Mar-97	PERFORM P.M.
		3	27	30		
Task Order 0310I7		3	27			
'0310K7	12-Mar-97				26-Mar-97	PERFORM P.M.
		18	0	13		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
Task Order 0310K7		18	0			
'0311B5	21-Oct-96				5-Sep-97	LIQ NITRO TANK
		0	9864			
		39	0	19		
		94	0	22		
		222	0	25		
		15	0	26		
		16	0	29		
		0	50	30		
		59	0	31		
		459	1926	33		
		59	379	35		
		9	0	57		
		72	15	58		
		88	0	61		
Task Order 0311B5		1132	12234			
'0314B7	10-Mar-97				15-Apr-97	REPR LEAKS IN WALL
		3	23	35		
		12	0	58		
		12	0	59		
Task Order 0314B7		27	23			
'0314F7	4-Mar-97				14-Mar-97	REPLACE HEATER BUNDLE
		0	60			
		32	0	13		
		8	0	22		
		104	0	29		
		94	0	31		
Task Order 0314F7		238	60			
'0314G7	4-Mar-97				11-Mar-97	REMOVE BLANK MACH 8 HEATER
		5	0	31		
		32	0	33		
Task Order 0314G7		37	0			
'0314L7	6-Mar-97				10-Mar-97	CLEAN SCREENS 15INCH TUNNEL
		20	36	29		
Task Order 0314L7		20	36			
'0314M7	7-Mar-97				10-Mar-97	REMOVE/INSPECT FILTER ELEMENTS
		5	0	31		
		16	0	33		
Task Order 0314M7		21	0			
'0314N7	6-Mar-97					REMOVE FILTERINSPECT/REPLACE
Task Order 0314N7		0	0			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0314S7	12-Mar-97				17-Mar-97	REMOVE/REPLACE INSULATION
		42	52	25		
Task Order 0314S7		42	52			
'0314V7	13-Mar-97				20-May-97	REPAIR ROOF...HOT TAR
		0	126	35		
		84	0	59		
Task Order 0314V7		84	126			
'0314W7	14-Mar-97				2-Apr-97	DAMAGED FLOOR DRAIN
		0	48			
		16	0	33		
		6	0	61		
Task Order 0314W7		22	48			
'0314X7	14-Mar-97				18-Mar-97	REPR BUSS ON POWER SUPPLY
		27	0	13		
Task Order 0314X7		27	0			
'0315C7	25-Mar-97				10-Jun-97	INDICATOR
		0	1396			
		2	0	26		
		16	0	33		
Task Order 0315C7		18	1396			
'0315E7	25-Mar-97				5-Aug-97	EXPANSION JOINT
		60	0	22		
		80	3	29		
		71	0	31		
		124	212	33		
		2	0	57		
Task Order 0315E7		337	215			
0315F7	25-Mar-97				11-Jun-97	REPL FITTING
		20	0	31		
		16	47	33		
Task Order 0315F7		36	47			
'0315G7	25-Mar-97				11-Apr-97	REPAIR 22"HELUIM TUNNEL
		0	2930			
		10	0	22		
		32	0	26		
		86	0	29		
		89	0	31		
		103	23	33		
		8	0	61		
Task Order 0315G7		328	2953			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0315J7	27-Mar-97				7-Apr-97	REPAIR OIL COOLED BUSS
		0	251			
		96	0	13		
		0	18	19		
		46	0	61		
Task Order 0315J7		142	269			
'0315M7	31-Mar-97				12-Jun-97	RPR LEAKING VALVES 3795S,3765S
		0	10833			
		9	0	26		
		44	0	29		
		28	0	31		
		79	57	33		
Task Order 0315M7		160	10890			
'0322B7	12-Mar-97				14-Apr-97	REMOVE CEILING LIGHT
		0	130			
		10	0	19		
		51	0	61		
Task Order 0322B7		61	130			
'0322D7	20-Mar-97				29-Mar-97	REPR GENERATOR
		0	1825			
		46	0	13		
		0	14	19		
		22	0	29		
		82	0	31		
		21	0	61		
Task Order 0322D7		171	1839			
'0322E7	20-Mar-97				29-Apr-97	PULL/REPLACE DAMAGED WIRING
		32	194	19		
		0	0	67		
Task Order 0322E7		32	194			
'0322F7	24-Mar-97				27-Mar-97	INSPECT BOUNDARY LAYER
		36	0	13		
		0	19	19		
		14	0	22		
		40	0	31		
		0	13	33		
		4	0	58		
Task Order 0322F7		94	32			
'0322K7	28-Mar-97					REPL FLO RATORS
		0	4355	33		
		0	6	57		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
Task Order 0322K7		0	4361			
'0322L7	29-Apr-97				3-Jun-97	INST KEY LOCK ON DOOR
		9	21	19		
		20	112	35		
Task Order 0322L7		29	133			
'0322M7	26-Mar-97				31-Mar-97	REPE ASBESTOS ON STEAM LINE
		40	0	25		
Task Order 0322M7		40	0			
'0322O7	28-Mar-97				2-Apr-97	CLEAN-UP OIL FROM CONCRETE PAD
		0	359			
		0	29	35		
		44	0	61		
Task Order 0322O7		44	388			
'0323B7	28-Mar-97					REMOVE ITEMS
		0	2440			
		23	839	25		
		161	0	31		
Task Order 0323B7		184	3279			
'0323C7	28-Mar-97				25-Apr-97	OPEN PENETRATION
		28	0	31		
		32	0	33		
Task Order 0323C7		60	0			
'0323F7	28-Jul-97				12-Sep-97	INSTALL POSTS IN GROUND
		4	0	22		
		4	6	57		
		18	150	58		
		6	0	61		
Task Order 0323F7		32	156			
0323G7	8-Apr-97				10-Jun-97	PAINT 5 MODEL CARTS
		0	468			
		16	9	29		
		6	0	35		
		48	0	57		
Task Order 0323G7		70	477			
'0323H7	31-Mar-97				18-Jun-97	REPR OIL LEAKS
		0	139	19		
		16	0	22		
		1	0	26		
		216	1032	29		
		0	324	30		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		161	0	31		
Task Order 0323H7		394	1495			
'0323J7	8-Apr-97				30-Jul-97	CLEAN TUNNEL CIRCUIT PM
		0	896			
		0	131	57		
		215	0	61		
Task Order 0323J7		215	1027			
'0323K7	14-Apr-97				4-Jun-97	PAINT INSIDE TOWER
		28	0	57		
Task Order 0323K7		28	0			
'0323L7	31-Mar-97				8-Aug-97	CLEAN OIL LEAKS
		52	1826	29		
		34	22	33		
		0	55	59		
		60	86	61		
		12	0	71		
Task Order 0323L7		158	1989			
'0323M7	31-Mar-97				3-Apr-97	CLEAN RELAY CONTACTS
Task Order 0323M7		0	0			
'0323N7	31-Mar-97				20-Jun-97	PLUG HOLES IN TUNNELL
		0	994			
		16	0	22		
		0	2	33		
		187	0	61		
Task Order 0323N7		203	996			
'0323O7	31-Mar-97				20-May-97	REPL WIRING TANK LIGHTS
		0	1042			
		78	7	19		
		0	13	29		
Task Order 0323O7		78	1062			
'0323P7	31-Mar-97				8-May-97	INSULATE REAR DOOR
		0	1054			
		40	0	25		
Task Order 0323P7		40	1054			
'0323Q7	20-Jun-97				1-Aug-97	CK/ADJUST/LUB STRUT UP LIFT
		114	0	29		
		32	0	33		
Task Order 0323Q7		146	0			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0323S7	31-Mar-97				11-Sep-97	INST CABLES
		10	0	31		
Task Order 0323S7		10	0			
'0330D7	12-Mar-97				25-Mar-97	PERFORM P.M.
		8	0	13		
Task Order 0330D7		8	0			
'0330E7	12-Mar-97				28-Apr-97	PERFORM P.M
		48	264	30		
Task Order 0330E7		48	264			
'0335A7	5-Mar-97				9-Jun-97	REPR LEAK ON CHILLER
		0	524			
		13	619	19		
		86	80	30		
Task Order 0335A7		99	1223			
'0335D7	5-Mar-97				18-Apr-97	PAINT UNIT SUBS
		0	76			
		2	0	19		
		0	509	35		
		171	0	57		
		2	0	73		
Task Order 0335D7		175	585			
'0335G7	10-Mar-97				20-Jun-97	MAIN DRIVE 24IN BEARING
		0	234			
		167	1582	29		
		0	682	30		
		112	0	31		
Task Order 0335G7		279	2498			
'0335J7	11-Mar-97				12-May-97	REPL COMPRESSOR
		0	387			
		26	25	30		
Task Order 0335J7		26	412			
'0335N7	12-Mar-97				7-Apr-97	REPAIR CONTROL VALVE
		0	17			
		48	0	25		
		32	49	33		
		0	25	35		
		0	0	58		
		29	0	61		
Task Order 0335N7		109	91			
'0335O7	13-Mar-97				31-Mar-97	REPAIR ROOF DRAIN

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		0	187			
		14	0	25		
		16	0	33		
		16	0	35		
Task Order 0335O7		46	187			
'0336A7	25-Mar-97				5-May-97	PERFORM P.M.
Task Order 0336A7		0	0			
'0336C7	26-Mar-97				23-Apr-97	REPLACE BEARINGS/SEALS IN PUMP
		0	27			
		8	0	13		
		0	81	19		
		32	0	29		
		9	0	31		
Task Order 0336C7		49	108			
'0340C7	14-Feb-97				31-Mar-97	PHOTO EQUIP
		0	24			
		176	0	29		
Task Order 0340C7		176	24			
'0340D7	14-Feb-97				31-Mar-97	MODIFY EQUIPMENT
		0	281			
		369	25	29		
		0	0	43		
		2	0	71		
Task Order 0340D7		371	306			
'0340F7	12-Mar-97				13-May-97	PERFORM P.M.
		8	118	30		
Task Order 0340F7		8	118			
'0343M7	5-Mar-97				19-Mar-97	REPR CUTTING BLADES
		36	0	29		
Task Order 0343M7		36	0			
'0343O7	3-Apr-97				31-Jul-97	REPRS TO KNIGHT LATHE
		0	0			
		2	0	19		
		48	0	29		
		11	0	31		
		2	0	58		
Task Order 0343O7		63	0			
'0343P7	4-Mar-97				19-Mar-97	REPAIR WATER LEAK ON STEAM LIN
		34	0	25		
		16	37	33		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		8	0	35		
Task Order 0343P7		58	37			
'0343R7	6-Mar-97				3-Apr-97	REPR WALL LEAK
		0	14	35		
		40	0	58		
Task Order 0343R7		40	14			
'0343Y7	10-Mar-97				23-Apr-97	RESEAL LEAKING WINDOWS
		0	0			
Task Order 0343Y7		0	0			
'0344E7	12-Mar-97				26-Mar-97	REPAIR EXHAUST FAN
		16	0	25		
		16	14	29		
Task Order 0344E7		32	14			
'0344G7	21-Mar-97					RELOCATE MODELS AND EQUIPMENT
'0344M7	21-Mar-97				26-Mar-97	REPL STEAM TRAP
		12	0	25		
		8	0	33		
Task Order 0344M7		20	0			
0344N7	31-Mar-97					REPL EXHAUST VENTS
		0	1095			
Task Order 0344N7		0	1095			
'0350A7	14-Feb-97				31-Mar-97	LIGHTING SYSTEM
		0	26	19		
Task Order 0350A7		0	26			
'0350C7	14-Feb-97				31-Mar-97	POWER DISTRIBUTION
Task Order 0350C7		0	0			
'0350F7	14-Feb-97				31-Mar-97	SUBSTATION INSPECTION
		64	0	13		
		0	26	19		
Task Order 0350F7		64	26			
'0350G7	14-Feb-97				31-Mar-97	SEWAGE LIFT STATIONS
		0	1552			
		16	0	29		
		22	0	61		
		32	0	71		
Task Order 0350G7		70	1552			
'0350H7	12-Mar-97				26-Mar-97	PERFORM P.M.
		8	0	13		
Task Order 0350H7		8	0			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0353D7	6-Mar-97				28-Mar-97	REMOVE OIL FROM TRANSFORMER
		34	0	13		
		30	0	31		
Task Order 0353D7		64	0			
'0353E7	13-Mar-97				23-Apr-97	REPR LEAK ON SPREADER
		0	0			
		30	0	13		
		3	0	61		
Task Order 0353E7		33	0			
'0353F7	13-Mar-97				25-Jun-97	REPR HYDRAULIC LEAK
		0	63			
		20	0	13		
		24	0	29		
Task Order 0353F7		44	63			
'0353I7	18-Mar-97				3-Apr-97	REPR SWITCHGEAR HEATER CIRCUIT
		0	408			
		68	0	13		
		0	316	19		
Task Order 0353I7		68	724			
'0353J7	18-Mar-97				12-Apr-97	REPAIR 22KV AIR SWITCH 2029
		46	0	13		
Task Order 0353J7		46	0			
'0353K7	19-Mar-97				21-Mar-97	REPAIR VALVE ON
		0	21	19		
		6	0	25		
		30	0	31		
		32	0	33		
Task Order 0353K7		68	21			
'0353L7	21-Mar-97				25-Mar-97	INSTALL 20FT OF PIPING
		0	542			
		30	0	22		
		38	0	25		
		15	0	31		
		30	0	33		
Task Order 0353L7		113	542			
'0353M7	25-Mar-97				28-Mar-97	REPR WATER LEAK 1ST STAGE COMP
		32	0	29		
		4	0	31		
Task Order 0353M7		36	0			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0360D7	14-Feb-97				31-Mar-97	DIESELS
		28	0	29		
		8	0	71		
Task Order 0360D7		36	0			
'0360F7	12-Mar-97				25-Mar-97	PERFORM P.M.
		38	0	29		
Task Order 0360F7		38	0			
'0360G7	12-Mar-97				28-Mar-97	PERFORM P.M.
		8	7	30		
Task Order 0360G7		8	7			
'0362A7	3-Mar-97				7-Mar-97	REPAIR C/T CHEMICAL LINE
		8	0	22		
		16	21	33		
Task Order 0362A7		24	21			
'0362D7	21-Apr-97				7-Jul-97	MODULAR OFFICE NEEDS POWER
		0	808			
		84	302	19		
Task Order 0362D7		84	1110			
'0362G7	5-Mar-97				8-May-97	REPR COMPRESSORS ON TR
		0	240			
		62	1423	30		
Task Order 0362G7		62	1663			
'0362K7	12-Mar-97				22-Apr-97	REPL BROKEN WINDOW
		0	0			
Task Order 0362K7		0	0			
'0362M7	6-Mar-97				17-Mar-97	REPAIR ENTRANCE DECKS
		16	0	35		
		4	0	57		
Task Order 0362M7		20	0			
'0362S7	12-Mar-97				2-Jun-97	REPL ONE FAN MOTOR
		0	184			
		16	0	25		
		29	0	30		
Task Order 0362S7		45	184			
'0362Y7	1-Apr-97				9-Jul-97	REPLACE CABLES
		0	2933			
		103	34	19		
		12	0	31		
		6	0	58		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		234	0	61		
Task Order 0362Y7		355	2967			
'0363F7	25-Mar-97				13-Jun-97	INSTALL ANGLE
		0	745			
		16	34	35		
		1	0	57		
Task Order 0363F7		17	779			
'0390A7	21-Jan-97				14-Mar-97	SHUTDOWN
		0	87	30		
Task Order 0390A7		0	87			
'0390B7	21-Jan-97				17-Mar-97	SHUTDOWN
		16	11	30		
Task Order 0390B7		16	11			
'0390C7	25-Mar-97				4-Apr-97	SHUTDOWN
Task Order 0390C7		0	0			
'0390D7	4-Feb-97				27-Mar-97	SHUTDOWN/PM
Task Order 0390D7		0	0			
'0390F7	6-Feb-97				2-Apr-97	SHUTDOWN
		0	0	67		
Task Order 0390F7		0	0			
'0390G7	14-Jan-97				21-Mar-97	SHUTDOWN
		0	1217			
		24	0	29		
		76	48	30		
Task Order 0390G7		100	1265			
'0390I7	7-Feb-97				7-Mar-97	SHUTDOWN
Task Order 0390I7		0	0			
'0390J7	25-Feb-97				2-Apr-97	SHUTDOWN
		0	8	29		
Task Order 0390J7		0	8			
'0390K7	9-Jan-97				10-Mar-97	SHUTDOWN
		0	1527			
		5	0	13		
		20	0	29		
		88	1056	30		
Task Order 0390K7		113	2583			
'0390L7	28-Feb-97				26-Mar-97	SHUTDOWN

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		2	0	30		
Task Order 0390L7		2	0			
'0390M7	13-Feb-97				14-Mar-97	SHUTDOWN
		0	47			
		24	0	30		
Task Order 0390M7		24	47			
'0390N7	3-Mar-97				12-Mar-97	SHUTDOWN
		0	128			
		3	0	19		
		32	137	30		
Task Order 0390N7		35	265			
'0390O7	13-Feb-97				14-Mar-97	SHUTDOWN
		8	0	30		
Task Order 0390O7		8	0			
'0390P7	19-Feb-97				3-Apr-97	PM
		26	0	30		
Task Order 0390P7		26	0			
'0390Q7	17-Mar-97				4-Apr-97	SHUTDOWN
		0	135			
		4	0	29		
		24	280	30		
Task Order 0390Q7		28	415			
'0390S7	3-Feb-97				28-Mar-97	SHUTDOWN
Task Order 0390S7		0	0			
'0400B7	10-Mar-97				30-Apr-97	REPLACE BATTERIES
		263	38	19		
Task Order 0400B7		263	38			
'0400C7	10-Mar-97				30-Apr-97	WATER TREATMENT
		0	930			
		287	243	30		
Task Order 0400C7		287	1173			
'0400E7	10-Mar-97				30-Apr-97	PORTABLE EQUIPT
		26	0	29		
		24	0	71		
Task Order 0400E7		50	0			
'0400G7	10-Mar-97				30-Apr-97	ABSORPTION MACHINE
		0	410			
		40	0	30		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
Task Order 0400G7		40	410			
'0400H7	10-Mar-97				30-Apr-97	EMERGENCY LIGHTS
		0	0			
		176	0	67		
Task Order 0400H7		176	0			
'0400I7	10-Mar-97				30-Apr-97	TELECOMMUNICATIONS
		36	0	19		
		0	0	67		
Task Order 0400I7		36	0			
'0400K7	10-Mar-97				30-Apr-97	FIRE ALARM FIRE DETECTORS
		0	142			
		0	814	19		
		639	0	67		
Task Order 0400K7		639	956			
'0400L7	10-Mar-97				30-Apr-97	CERTIFY GAGES
		0	1112			
		0	30	19		
		147	0	26		
		0	220	29		
		0	2205	33		
Task Order 0400L7		147	3567			
'0401A7	10-Apr-97				9-May-97	DEWINTERIZE EQUIPT
		0	562			
		0	34	19		
		60	0	25		
		32	0	33		
Task Order 0401A7		92	596			
'0401B7	10-Apr-97				9-Jun-97	LN2 TRAILERS PERFORM P.M.
		0	202			
		13	1228	26		
		210	0	33		
Task Order 0401B7		223	1430			
'0410D7	9-Apr-97				25-Apr-97	PERFORM P.M.
		32	0	13		
Task Order 0410D7		32	0			
'0416B7	2-Apr-97				27-May-97	REPLACE WATER COOLER
		0	538			
		2	0	19		
		2	0	25		
		16	11	33		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
Task Order 0416B7		20	549			
'0416C7	2-Apr-97				11-Jul-97	BAL AC SYSTEM IN ROOM 126
		0	105			
		18	0	30		
Task Order 0416C7		18	105			
'0416D7	16-Jun-97				17-Jul-97	PRESSURE WASH SYSTEM
		282	722	57		
Task Order 0416D7		282	722			
'0416E7	3-Apr-97				30-Apr-97	REPLACE A/C COMPRESSOR
		0	650			
		26	222	30		
		25	0	31		
Task Order 0416E7		51	872			
'0416F7	4-Apr-97				29-May-97	FIND LEAKS IN UNIT
		51	423	30		
Task Order 0416F7		51	423			
'0416G7	4-Apr-97				30-May-97	REPLACE SEALS ON PUMP
		0	5780			
		230	0	29		
		60	0	31		
		16	0	33		
Task Order 0416G7		306	5780			
'0416H7	4-Apr-97					PULL COMBUSTOR
		282	0	31		
Task Order 0416H7		282	0			
'0416I7	4-Apr-97					CK VALVES
		0	10			
		8	0	22		
		24	0	29		
		20	0	31		
		32	0	33		
Task Order 0416I7		84	10			
'0416L7	8-Apr-97					REST AND SECURE VENT
Task Order 0416L7		0	0			
'0416N7	8-Apr-97				18-Apr-97	BELLOWS
		0	514			
		8	0	22		
		16	0	33		
		8	0	57		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
Task Order 0416N7		32	514			
'0416Q7	14-Apr-97					PAINT SWITCH GEAR
		110	0	13		
		234	470	57		
		0	0	90		
Task Order 0416Q7		344	470			
'0416S7	14-Apr-97				6-May-97	VAC PUMP EXCESSIVE VIBRATION
		0	101			
		54	6826	29		
		37	0	31		
Task Order 0416S7		91	6927			
'0416U7	17-Apr-97				24-Apr-97	REM/REPLACE INSULATION PIPING
		26	0	25		
Task Order 0416U7		26	0			
'0416W7	21-Apr-97				9-Sep-97	REPAIR POWER SUPPLY
		87	6	13		
		0	349	90		
Task Order 0416W7		87	355			
'0417A7	13-Jun-97					TIE IN FREZZE ALARM,HEAT EXCHG
Task Order 0417A7		0	0			
'0417D7	24-Apr-97				9-May-97	REPAIR CONTROL WIRING A/C SYS
		0	418			
		26	296	30		
		15	0	31		
Task Order 0417D7		41	714			
'0417E7	25-Apr-97				13-May-97	CALIBRATE INSTRUMENTS
Task Order 0417E7		0	0			
'0417H7	25-Apr-97				28-Apr-97	REPAIR 2 LEAKING FLANGES
		0	696			
		12	0	31		
		22	0	33		
Task Order 0417H7		34	696			
'0417K7	30-Apr-97				4-Jun-97	REPL LESLIE VALVE
		0	2277			
Task Order 0417K7		0	2277			
'0417L7	30-Apr-97				19-Jun-97	VALVE IS LEAKING
		0	821			
		48	0	29		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		0	5590			
		749	1526	25		
		302	0	61		
Task Order 0424D7		1051	7116			
'0424E7	23-Apr-97				23-Jun-97	PROVIDE RIGGING FOR I.H.
		16	0	22		
		28	0	25		
		30	0	31		
		24	0	33		
Task Order 0424E7		98	0			
'0424G7	28-Apr-97				7-May-97	REPAIR 2 WATER VALVES ON C/T
		20	0	25		
		6	0	29		
Task Order 0424G7		26	0			
'0424R7	13-May-97				18-Jun-97	REMOVE LAB CONNECTIONS
Task Order 0424R7		0	0			
'0424S7	1-May-97				16-May-97	RPR/REPLACE MODULATING VALVE
		2	0	22		
		20	0	25		
		170	1618	29		
		65	0	31		
		16	55	33		
		6	0	61		
Task Order 0424S7		279	1673			
'0424T7	1-May-97				23-Jul-97	REPAIR HYD.PUMP
		0	0			
		8	0	22		
		124	0	29		
		28	0	31		
Task Order 0424T7		160	0			
'0430C7	9-Apr-97				21-Apr-97	PERFORM P.M.
		1	0	19		
Task Order 0430C7		1	0			
'0430E7	9-Apr-97				23-Apr-97	PERFORM P.M.
		8	34	30		
Task Order 0430E7		8	34			
'0430G7	9-Apr-97				24-Apr-97	PERFORM P.M.
		8	0	30		
Task Order 0430G7		8	0			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0430S6	30-May-97					REPLACE PACKAGE UNIT 49-0158
		0	249	19		
		0	5951	30		
Task Order 0430S6		0	6200			
'0437B7	4-Apr-97				24-Apr-97	REPR LEAK ON MTS HYD TEST
		0	592			
		74	0	29		
		20	0	31		
Task Order 0437B7		94	592			
'0437C7	8-Apr-97				6-May-97	INSULATE VALVES
		64	0	25		
Task Order 0437C7		64	0			
'0437D7	8-Apr-97				4-Jun-97	CLEAN STORM DRAIN
		16	0	33		
		8	0	61		
Task Order 0437D7		24	0			
'0437G7	9-Apr-97				21-Apr-97	MODS TO OVERHEAD CRANES
		0	0			
		28	0	22		
Task Order 0437G7		28	0			
'0437I7	14-Apr-97				30-Apr-97	REPR WATER LINE
		0	1106			
		4	0	19		
		137	0	25		
		3	0	26		
		40	0	29		
		60	47	33		
Task Order 0437I7		244	1153			
'0437J7	14-Apr-97				2-May-97	REMOVE SHROUD
		0	211			
		16	0	22		
		8	0	29		
		58	0	31		
		32	0	33		
Task Order 0437J7		114	211			
'0437L7	14-Apr-97				22-Apr-97	COMPRESSOR LEAKING OIL
		0	0			
		7	0	19		
		18	0	29		
		26	0	31		
		8	0	33		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		14	0	61		
Task Order 0437L7		73	0			
'0437P7	21-Apr-97				26-Aug-97	REPR WATER PUMP
		0	215	19		
		22	325	25		
		24	3503	29		
		30	273	30		
		0	1138	33		
		33	211	43		
		23	0	61		
Task Order 0437P7		132	5665			
'0437V7	22-Apr-97				27-Aug-97	INSURE PROPER VENTS FOR HOODS
		0	8543			
		22	0	25		
		32	0	29		
		8	0	31		
		16	18	33		
		2	0	43		
Task Order 0437V7		80	8561			
'0438C7	6-May-97					INVESTIGATE CRACKS IN CONCRETE
		17	0	41		
Task Order 0438C7		17	0			
0438D7	22-Apr-97				25-Apr-97	ERECT 4 BUCKSK OF STAGING
		14	0	61		
Task Order 0438D7		14	0			
'0438G7	23-Apr-97				6-Jun-97	PROVIDE WEIGHTS TO LOAD TEST
		29	0	31		
Task Order 0438G7		29	0			
'0438I7	25-Apr-97				17-May-97	REPL WINDOW UNIT
		4	0	30		
		12	0	43		
		12	0	61		
Task Order 0438I7		28	0			
'0438M7	29-Apr-97					REPAIR 3 UNIT HEATERS
		28	208	19		
		8	239	30		
		48	0	61		
Task Order 0438M7		84	447			
'0440C7	10-Mar-97				30-Apr-97	PHOTO EQUIPMENT
		0	0			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		196	0	29		
Task Order 0440C7		196	0			
'0440D7	10-Mar-97				30-Apr-97	MODIFY EQUIPT
		0	1959			
		384	173	29		
		24	0	71		
Task Order 0440D7		408	2132			
'0440E7	9-Apr-97				12-May-97	PERFORM P.M.
		16	0	30		
Task Order 0440E7		16	0			
'0440F7	10-Apr-97				22-Apr-97	PERFORM P.M.
		12	0	29		
Task Order 0440F7		12	0			
'0440G7	10-Apr-97				22-Apr-97	PERFORM P.M.
		3	0	29		
Task Order 0440G7		3	0			
'0441A7	2-Apr-97				5-Jun-97	REPAIR TRIPPING BREAKER
		0	0			
		30	0	13		
		0	0	19		
		0	0	90		
Task Order 0441A7		30	0			
'0441B7	3-Apr-97				28-Jul-97	REPL TEMPORARY LINE
		41	317	19		
Task Order 0441B7		41	317			
'0441D7	4-Apr-97				7-Apr-97	BROKEN WATER LINE
		25	0	33		
		6	0	58		
		9	0	61		
Task Order 0441D7		40	0			
'0441E7	4-Apr-97				17-Apr-97	REPLACE BEARINGS A-H
		3	0	22		
		26	0	30		
		8	0	33		
Task Order 0441E7		37	0			
'0441K7	18-Apr-97				27-May-97	PERFORM P.M.
		48	1076	29		
Task Order 0441K7		48	1076			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0441R7	23-Apr-97				1-May-97	CLEAN UP AREA REMOVE TRASH
		8	21	35		
		48	0	61		
Task Order 0441R7		56	21			
'0441Y7	29-Apr-97				14-May-97	REPR OUTER WALL LEAK
		0	61	35		
		32	0	58		
Task Order 0441Y7		32	61			
'0450F7	11-Mar-97				30-Apr-97	SUBSTATION INSPECTION
		64	0	13		
		0	25	19		
Task Order 0450F7		64	25			
'0450G7	10-Mar-97				30-Apr-97	SEWAGE LIFT STATIONS
		23	0	29		
		8	0	31		
		49	0	61		
		24	0	71		
Task Order 0450G7		104	0			
'0454A7	1-Apr-97				17-Apr-97	CONDENSATE RETURN LINE
		0	682			
		38	0	25		
Task Order 0454A7		38	682			
'0454C7	8-Apr-97				13-May-97	REPR STEAM LINE
		0	849			
		48	0	22		
		100	0	25		
		46	0	31		
		73	59	33		
		12	0	35		
Task Order 0454C7		279	908			
'0454E7	8-Apr-97				10-Apr-97	REPR HI PRESURE LUBE LINE
		3	0	26		
		31	0	29		
		20	10	33		
Task Order 0454E7		54	10			
'0454F7	9-Apr-97				14-Apr-97	REPAIR LIMIT-TORQUE V-3648A
		0	42			
		7	0	19		
		2	0	26		
		28	0	29		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		36	0	31		
		15	0	33		
Task Order 0454F7		88	42			
'0454G7	14-Apr-97				7-May-97	REDUCE CONTACT IN BREAKERS
		164	0	13		
		35	0	31		
		0	212	90		
Task Order 0454G7		199	212			
'0454I7	15-Apr-97					SAFETY TEST GLOVES
Task Order 0454I7		0	0			
'0454J7	18-Apr-97				21-Apr-97	REPAIR BROKEN SEWER LINE
		0	293			
		16	0	29		
		16	0	33		
		8	0	61		
Task Order 0454J7		40	293			
'0454K7	23-Apr-97				30-Jul-97	REPAIR WATER LEAK 3 RD STAGE
		0	41			
		8	0	26		
		76	22	29		
		38	0	31		
		16	0	33		
Task Order 0454K7		138	63			
'0454M7	24-Apr-97				6-May-97	REPR OR REPL FIXTURES
		48	534	19		
Task Order 0454M7		48	534			
'0454N7	2-May-97					REPLACE VENT VALVE
		0	2054	33		
Task Order 0454N7		0	2054			
'0460D7	10-Mar-97				30-Apr-97	DIESELS
		0	668			
		44	0	29		
Task Order 0460D7		44	668			
'0460F7	9-Apr-97				25-Apr-97	PERFORM P.M.
		8	0	30		
Task Order 0460F7		8	0			
'0462F7	16-Apr-97				24-Apr-97	INSTALL LINES AND OUTLETS
		50	100	19		
Task Order 0462F7		50	100			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0462K7	8-Apr-97				10-Apr-97	REPL RECEPTACLE
Task Order 0462K7		0	0			
'0462N7	10-Apr-97				26-Jun-97	REPR CARRIER UNIT
		0	67	19		
		32	129	30		
Task Order 0462N7		32	196			
'0462P7	10-Apr-97				6-Oct-97	REPAIR/REPLACE A/C SYSTEM
		32	165	25		
		335	4414	30		
		38	0	31		
		0	754	43		
Task Order 0462P7		405	5333			
'0462W7	17-Apr-97				22-Sep-97	SEAL ROOF REPR OR REPLACE
		10	0	19		
		40	105	35		
		5	8	57		
Task Order 0462W7		55	113			
'0462Y7	25-Apr-97				2-Jun-97	REPAINT RED LINES
		0	293			
		126	65	57		
Task Order 0462Y7		126	358			
'0463D7	21-Apr-97					REMOVE TUBING ON TWO WALLS
		15	0	30		
		16	0	57		
Task Order 0463D7		31	0			
'0463E7	21-Apr-97				28-Apr-97	REPLACE H/WATER HEATER
		0	168			
		3	0	19		
		16	60	33		
Task Order 0463E7		19	228			
'0463H7	3-Jul-97				31-Jul-97	REPL SLIDING DOORS
		8	0	22		
		44	0	25		
Task Order 0463H7		52	0			
'0463O7	2-May-97				22-May-97	REPAINT TAIL DOOR
		0	145			
		0	48	35		
		89	23	57		
Task Order 0463O7		89	216			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0463P7	25-Apr-97				9-Jun-97	CLEAN UP OIL SPILL
		4	0	31		
		0	79	35		
		27	17	61		
Task Order 0463P7		31	96			
'0490A7	27-Feb-97				17-Apr-97	SHUTDOWN
Task Order 0490A7		0	0			
'0490B7	11-Feb-97				18-Apr-97	SHUTDOWN
		5	0	13		
		5	0	26		
		40	184	29		
		64	31	30		
		8	0	33		
		8	0	71		
Task Order 0490B7		130	215			
'0490C7	12-Mar-97				11-Apr-97	SHUTDOWN
Task Order 0490C7		0	0			
'0490D7	28-Jan-97				16-Apr-97	SHUTDOWN 14-18
		8	0	13		
Task Order 0490D7		8	0			
'0490E7	10-Feb-97				17-Apr-97	SHUTDOWN
		10	0	13		
		3	0	29		
		4	0	30		
Task Order 0490E7		17	0			
'0490F7	21-Jan-97				11-Apr-97	SHUTDOWN
		12	0	29		
		24	4	30		
Task Order 0490F7		36	4			
'0490G7	21-Jan-97				14-Apr-97	SHUTDOWN
		2	0	29		
		16	9	30		
Task Order 0490G7		18	9			
'0490H7	25-Mar-97				15-Apr-97	SHUTDOWN
Task Order 0490H7		0	0			
'0490I7	7-Mar-97				25-Apr-97	SHUTDOWN
		8	0	13		
		4	0	29		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		80	154	30		
		3	0	33		
Task Order 0490I7		95	154			
'0490J7	29-Jan-97				22-Apr-97	PERFORM P.M.
Task Order 0490J7		0	0			
'0490K7	17-Mar-97				30-Apr-97	SHUTDOWN
		2	0	29		
		16	59	30		
Task Order 0490K7		18	59			
'0490L7	21-Jan-97				7-May-97	SHUTDOWN
Task Order 0490L7		0	0			
'0500B7	16-Apr-97				30-May-97	REPLACE BATTERIES
		0	308			
		234	0	19		
Task Order 0500B7		234	308			
'0500C7	16-Apr-97				30-May-97	WATER TREATMENT
		0	598			
		297	42	30		
Task Order 0500C7		297	640			
'0500E7	16-Apr-97				30-May-97	PORTABLE EQUIPMENT
		12	0	29		
		16	0	71		
Task Order 0500E7		28	0			
'0500F7	16-Apr-97				30-May-97	ROOF INSPECTION
Task Order 0500F7		0	0			
'0500G7	16-Apr-97				30-May-97	PURGE ABSORPTION MACHINES
		0	18	29		
		18	0	30		
Task Order 0500G7		18	18			
'0500H7	16-Apr-97				30-May-97	EMERGENCY LIGHTS
		0	84	29		
		157	0	67		
Task Order 0500H7		157	84			
'0500I7	16-Apr-97				30-May-97	TELECOMMUNICATIONS
		21	0	19		
		0	0	67		
Task Order 0500I7		21	0			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0500K7	16-Apr-97				30-May-97	FIRE ALARM FIRE DETECTOR
		0	392			
		0	105	19		
		598	1461	67		
Task Order 0500K7		598	1958			
'0500L7	16-Apr-97				30-May-97	CERTIFY GAGES
		153	44	26		
		0	3565	33		
Task Order 0500L7		153	3609			
'0501D7	24-Jun-97				11-Jul-97	P.M. FIRE HYDRANTS
		72	0	67		
Task Order 0501D7		72	0			
'0510F7	13-May-97				30-May-97	PERFORM P.M.
		4	27	30		
Task Order 0510F7		4	27			
'0510G7	13-May-97				27-May-97	PERFORM P.M.
		1	0	19		
Task Order 0510G7		1	0			
'0511B7	21-May-97					INVESTIGATE BAD STEAM TRAPS
		8	0	33		
Task Order 0511B7		8	0			
'0511C7	23-May-97				14-Oct-97	REPR STEAM LINES/CONDENSATE
		24	0	25		
		64	508	33		
Task Order 0511C7		88	508			
'0511D7	5-Jun-97					REPL BUILT UP ROOF
		142	0	41		
Task Order 0511D7		142	0			
'0511E7	23-May-97				17-Sep-97	REBUILD VALVES 6000PSI
		5	0	26		
		32	2303	29		
Task Order 0511E7		37	2303			
'0511J7	30-May-97				17-Jul-97	REPLACE AC UNIT
		12	159	19		
		0	705	30		
		7	0	43		
		7	0	61		
Task Order 0511J7		26	864			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0519B7	6-May-97				14-Jul-97	REPAIR ROOF LEAK
		71	30	58		
		18	0	59		
Task Order 0519B7		89	30			
'0519C7	7-May-97				8-May-97	REPAIR LEAKING VALVES
		7	0	19		
		16	0	29		
		20	0	31		
Task Order 0519C7		43	0			
'0519D7	9-May-97				19-Jun-97	INST BUMP STOPS
		0	168			
		39	80	57		
		8	0	58		
Task Order 0519D7		47	248			
'0519E7	9-May-97				29-May-97	REPR VALVE 3140D
		22	199	19		
		3	0	26		
		20	415	29		
		36	0	31		
		16	0	33		
		11	0	57		
Task Order 0519E7		108	614			
'0519F7	9-May-97				19-May-97	REPR AC UNIT
		0	644			
		61	2073	30		
		20	0	31		
Task Order 0519F7		81	2717			
'0519H7	9-May-97				2-Oct-97	STANDING WATER
		16	49	33		
		4	0	57		
		6	0	58		
		8	0	61		
Task Order 0519H7		34	49			
'0519I7	9-May-97				24-Sep-97	INSTALL NEW FIXTURES
		0	2057			
		58	38	19		
Task Order 0519I7		58	2095			
'0519J7	12-May-97				23-Sep-97	REMOVE SPOOL PIECE
		5	0	19		
		16	0	29		
		31	0	31		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		30	34	33		
Task Order 0519J7		82	34			
'0519K7	12-May-97				22-May-97	STOKES MICROVAC
		28	0	29		
		18	0	31		
Task Order 0519K7		46	0			
'0519L7	12-May-97				2-Jul-97	REMOVE/REPLACE ROOF
		0	281			
		56	62	59		
Task Order 0519L7		56	343			
'0519N7	13-May-97				22-May-97	DRAIN/REFILL CHILLER
		0	58			
		32	0	25		
		8	287	30		
Task Order 0519N7		40	345			
'0519S7	19-May-97				3-Jun-97	REPR ACOUSTIC WEDGES
		46	112	25		
Task Order 0519S7		46	112			
'0519X7	20-May-97				30-Jul-97	REPLACE BULBS
		24	52	19		
Task Order 0519X7		24	52			
'0519Y7	20-May-97				4-Sep-97	REPL LAMPS
		54	0	19		
Task Order 0519Y7		54	0			
'0519Z7	20-May-97				18-Jun-97	REPAIR STEAM LEAK
		6	0	19		
		8	0	25		
		16	63	33		
Task Order 0519Z7		30	63			
'0522D7	6-May-97				22-Sep-97	CONNECT SECTION OF PIPE
		9	0	19		
		24	0	25		
		16	487	29		
		32	30	33		
Task Order 0522D7		81	517			
'0522H7	15-May-97				19-Sep-97	REPL PROBES
		0	4389	90		
Task Order 0522H7		0	4389			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0522J7	21-May-97				28-May-97	REMOVE/REINSTALL INS.VALVE
		28	0	25		
Task Order 0522J7		28	0			
'0522K7	29-May-97					REMOVE COVERS TURNING GEAR
		14	0	13		
		12	0	22		
		681	3314	29		
		534	0	31		
		27	92	33		
		35	0	57		
		0	157	90		
Task Order 0522K7		1303	3563			
'0523A7	5-May-97				15-May-97	LOCATE/REPAIR URGENT ROOK LEAK
		0	85	35		
		79	14	59		
Task Order 0523A7		79	99			
'0523G7	9-May-97				22-Aug-97	REBUILD MOTORS
		32	25	29		
Task Order 0523G7		32	25			
'0523I7	12-May-97				19-May-97	MAIN DRIVE LUBE SYSTEM
		16	0	29		
		10	0	31		
Task Order 0523I7		26	0			
'0523P7	14-May-97				21-May-97	REPLACE BRUSHES/CLEAN INSULATO
		48	0	13		
Task Order 0523P7		48	0			
'0523Q7	15-May-97				27-May-97	REPAIR PRESSURE DROP SCREEN
		88	193	29		
Task Order 0523Q7		88	193			
'0523R7	16-May-97				21-Jul-97	REPR LEAK ON STEAM LINE
		0	90	19		
		18	0	25		
		16	0	33		
		40	0	61		
Task Order 0523R7		74	90			
0523X7	21-May-97				10-Jul-97	FOLLOW UP PM
		10	0	19		
		24	170	29		
Task Order 0523X7		34	170			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0523Y7	30-May-97				25-Jul-97	REPL PEELING PAINT
		112	274	57		
Task Order 0523Y7		112	274			
'0523Z7	21-May-97				23-May-97	WELD BLADES/TURNING VANES
		7	0	22		
		15	0	33		
Task Order 0523Z7		22	0			
'0524A7	21-May-97				29-May-97	REPAIR A/C IN CONTROL ROOM
		40	683	30		
		32	0	31		
Task Order 0524A7		72	683			
'0524C7	23-May-97				29-Jul-97	MACHINE RINGS
Task Order 0524C7		0	0			
'0524E7	6-Jun-97				14-Jul-97	RUN LARGE CONDUIT
		73	1274	19		
		0	0	57		
		8	0	58		
		65	0	61		
Task Order 0524E7		146	1274			
'0524G7	27-May-97				30-May-97	VACUUM UP PIT AREA
		60	0	25		
Task Order 0524G7		60	0			
'0524I7	28-May-97				1-Jul-97	REPLACE BRUSHES ON D1 A,B,C,D
		164	0	13		
		0	3521	90		
Task Order 0524I7		164	3521			
'0524J7	28-May-97					REPR PUMPS IN PIT
		32	5525	29		
		20	0	31		
Task Order 0524J7		52	5525			
'0524K7	30-May-97				24-Jun-97	REPR AC UNIT
		81	1056	30		
		19	0	31		
Task Order 0524K7		100	1056			
'0524M7	30-May-97				18-Jun-97	MOVE EQUIPMENT
		61	0	31		
		9	0	61		
Task Order 0524M7		70	0			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0524N7	2-Jun-97					REPR CHILLER
		134	5702	30		
		16	0	31		
Task Order 0524N7		150	5702			
'0530D7	13-May-97				22-May-97	PERFORM P.M.
		24	0	29		
Task Order 0530D7		24	0			
'0530E7	13-May-97				19-May-97	PERFORM P.M.
		16	0	33		
Task Order 0530E7		16	0			
'0530F7	13-May-97				23-May-97	PERFORM P.M.
		2	0	19		
		8	281	29		
		8	0	30		
		2	18	33		
Task Order 0530F7		20	299			
'0530G7	13-May-97				30-May-97	PERFORM P.M.
		4	0	30		
		0	19	63		
Task Order 0530G7		4	19			
'0530H7	13-May-97				27-May-97	PERFORM P.M.
		12	0	30		
		0	508	63		
Task Order 0530H7		12	508			
'0530I7	13-May-97				20-May-97	PERFORM P.M.
		8	0	29		
Task Order 0530I7		8	0			
'0531B7	22-May-97				29-Sep-97	REPL AIR CONDITIONER
		26	0	41		
Task Order 0531B7		26	0			
'0531C7	22-May-97					REPLACE HEAT EXCHANGERS
		68	0	41		
Task Order 0531C7		68	0			
'0531E7	19-May-97				5-Jun-97	REPRS TO AIR HANDLING UNIT
		48	104	30		
Task Order 0531E7		48	104			
'0531G7	20-May-97				29-May-97	REPAIR LEAKING CHILLER
		17	0	30		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		2	0	61		
Task Order 0531G7		19	0			
'0531I7	20-May-97				22-May-97	REPAIR HIGH PRESSURE PIPING
		2	0	26		
		8	0	29		
		24	0	31		
		23	0	33		
Task Order 0531I7		57	0			
'0531P7	29-May-97				2-Jun-97	REMOVE PIPE FROM BLDG
		21	0	25		
		18	0	31		
		5	0	33		
Task Order 0531P7		44	0			
'0531S7	30-May-97				23-Jul-97	RECERTIFY GAGES
		6	0	26		
		24	210	33		
Task Order 0531S7		30	210			
'0531W7	30-May-97				27-Aug-97	REPL FLUID COUPLING
		104	902	29		
		9	0	31		
Task Order 0531W7		113	902			
'0539B7	6-May-97				24-Jun-97	ANCHOR WALKWAY/RACEWAY
		0	149			
		74	219	29		
		0	13	30		
Task Order 0539B7		74	381			
'0539D7	5-May-97					REPAIR ROOF LEAK
		0	53			
		32	94	59		
Task Order 0539D7		32	147			
'0539E7	6-May-97					REPAIR /REPLACE ROOFS
Task Order 0539E7		0	0			
'0539G7	7-May-97				13-May-97	PURCHASE/INSTALL HYD PUMP
		0	2819			
		16	0	29		
		8	0	33		
Task Order 0539G7		24	2819			
'0539I7	7-May-97				8-May-97	REMOVE 36" BLANK PLATE
		20	0	31		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		20	11	33		
Task Order 0539I7		40	11			
'0539J7	7-May-97				12-Sep-97	CK GAS DRYER
		0	3386			
		3	0	22		
		108	350	25		
		0	106	26		
		380	11677	30		
Task Order 0539J7		491	15519			
'0539O7	13-May-97				11-Jul-97	REPR AC IN ROOM 400
		30	365	30		
		0	0	57		
		53	0	61		
Task Order 0539O7		83	365			
'0539P7	13-May-97				21-Aug-97	REPR BROKEN CONCRETE SECTION
		36	597	58		
		52	0	61		
Task Order 0539P7		88	597			
'0539S7	22-May-97				17-Jun-97	REMOVE SPACE STATION
Task Order 0539S7		0	0			
'0539U7	4-Jun-97					AIR DRYER
		300	0	22		
		188	0	31		
		0	77	33		
		120	0	61		
Task Order 0539U7		608	77			
'0540C7	16-Apr-97				30-May-97	PHOTO EQUIPMENT
		160	0	29		
Task Order 0540C7		160	0			
'0540D7	16-Apr-97				30-May-97	MODS TO EQUIPMENT
		341	732	29		
		16	0	71		
Task Order 0540D7		357	732			
'0541E7	5-May-97				5-Aug-97	CLEAN/CAULK WINDOWS
		0	220			
		80	18	59		
Task Order 0541E7		80	238			
'0541N7	19-May-97				17-Jul-97	REINSTALL ROOF PANELS
		48	446	59		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
Task Order 0541N7		48	446			
'0541O7	19-May-97				27-May-97	REPR ICE MACHINE
		59	1451	30		
Task Order 0541O7		59	1451			
'0541Q7	20-May-97				22-May-97	REPLACE DRAINS
		28	0	33		
Task Order 0541Q7		28	0			
'0541S7	22-May-97				31-Jul-97	REPLACE DOOR HANDICAP ENTERANC
		0	0	35		
Task Order 0541S7		0	0			
'0542A7	28-May-97				3-Jun-97	SUPPORT MINTENANCE
		18	0	31		
Task Order 0542A7		18	0			
'0542H7	30-May-97				17-Jun-97	REPAIR 1200AMP BREAKER
		16	0	13		
		0	3113	90		
Task Order 0542H7		16	3113			
'0550C7	16-Apr-97				30-May-97	POWER DISTRIBUTION
		28	0	13		
Task Order 0550C7		28	0			
'0550F7	16-Apr-97				30-May-97	SUBSTATION INSPECTION
		80	0	13		
		0	36	90		
Task Order 0550F7		80	36			
'0550G7	16-Apr-97				30-May-97	SEWAGE LIFT STATIONS
		48	0	29		
		63	0	61		
Task Order 0550G7		111	0			
'0555A7	6-May-97					REPAIRS TO INTERCOOLER
		3	0	19		
		26	0	26		
		136	1071	29		
		127	0	31		
		151	898	33		
		8	0	57		
Task Order 0555A7		451	1969			
'0555C7	9-May-97				20-May-97	REINSTALL AB INSULATION
		0	265			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		8	0	22		
		50	0	25		
Task Order 0555C7		58	265			
'0555E7	12-May-97				27-May-97	REMOVE ASBESTOS INSULATION
		65	0	25		
Task Order 0555E7		65	0			
'0555G7	20-May-97					REPAIR BROKEN CONCRETE TUNNEL
		3	0	31		
		57	252	35		
		24	740	58		
		4	60	59		
		49	0	61		
Task Order 0555G7		137	1052			
'0555I7	22-May-97					SAFETY WATCH
		60	0	13		
Task Order 0555I7		60	0			
'0555K7	21-May-97				28-May-97	REPAIR PRESSURE STEAM LINE
		7	0	22		
		144	760	25		
		27	0	31		
Task Order 0555K7		178	760			
'0555N7	30-May-97				28-Aug-97	HEALTH AUDIT
		28	0	13		
		0	152	35		
		4	0	57		
		0	100	90		
Task Order 0555N7		32	252			
'0560D7	16-Apr-97				30-May-97	DIESELS
		28	79	29		
Task Order 0560D7		28	79			
'0560E7	16-Apr-97				30-May-97	REPR EQUIPMENT
Task Order 0560E7		0	0			
'0560F7	13-May-97				20-May-97	PERFORM P.M.
		2	0	29		
Task Order 0560F7		2	0			
'0560H7	13-May-97				28-May-97	PERFORM P.M.
		14	23	30		
Task Order 0560H7		14	23			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0560I7	13-May-97				3-Jun-97	PERFORM P.M.
		4	0	30		
Task Order 0560I7		4	0			
'0562A7	5-May-97				18-Jun-97	REPAIR WALLS AND COMMODES
		0	416			
		24	55	33		
		12	0	35		
		18	0	58		
Task Order 0562A7		54	471			
'0562C7	5-May-97				15-Jul-97	CLEAN/CAULK WINDOWS
		0	165			
		0	0	19		
		44	5	59		
Task Order 0562C7		44	170			
'0562I7	13-May-97				9-Jun-97	PAINT DOUBLE WIDE
		64	67	57		
Task Order 0562I7		64	67			
'0562M7	19-May-97				29-May-97	REPR FLOORING OF TRAILER
		4	0	22		
		0	28	33		
		14	119	35		
		2	0	57		
Task Order 0562M7		20	147			
'0562R7	23-May-97				29-May-97	REINSULATE CHILL WATER LINE
		16	0	25		
		4	0	35		
Task Order 0562R7		20	0			
'0562W7	30-May-97				27-Aug-97	REPL AC UNIT
		72	1683	19		
		4	7	30		
		12	10	43		
		13	0	61		
		2	0	72		
Task Order 0562W7		103	1700			
'0590A7	4-Apr-97				28-May-97	SHUTDOWN
		0	179			
		110	0	13		
		52	388	26		
		17	46	29		
		16	4	30		
		20	0	31		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		51	142	33		
Task Order 0590A7		266	759			
'0590B7	24-Mar-97				3-Jun-97	SHUTDOWN
		0	17			
		5	0	19		
		24	0	29		
		128	214	30		
Task Order 0590B7		157	231			
'0590C7	28-Apr-97				19-Jun-97	SHUTDOWN MAY 26-JUNE 20
		0	17264			
		444	0	13		
		6	791	26		
		416	1126	29		
		82	655	30		
		51	0	31		
		108	0	33		
		0	34	57		
		412	243	61		
		40	0	71		
		0	18	90		
Task Order 0590C7		1559	20131			
'0590D7	15-Apr-97				9-May-97	SHUTDOWN
Task Order 0590D7		0	0			
'0590E7	15-Apr-97				23-May-97	SHUTDOWN
Task Order 0590E7		0	0			
'0590F7	16-Apr-97				7-May-97	SHUTDOWN
		8	100	30		
Task Order 0590F7		8	100			
'0590G7	28-Feb-97				1-May-97	SERVICE AC UNITS
		44	0	30		
Task Order 0590G7		44	0			
'0590H7	21-Apr-97				1-Jul-97	SHUTDOWN
		0	744			
		700	0	13		
		88	64	29		
		32	19	30		
		44	0	31		
		0	508	90		
Task Order 0590H7		864	1335			
'0590I7	28-Apr-97					SHUTDOWN MAY 26-JULY 3

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		0	288			
		110	0	13		
		2	0	19		
		48	0	25		
		17	114	26		
		773	257	29		
		114	767	30		
		91	0	31		
		1	0	33		
		0	0	57		
		299	0	61		
Task Order 0590I7		1455	1426			
'0590J7	24-Apr-97				30-May-97	SHUTDOWN
		6	0	26		
		16	0	29		
		24	11	30		
		16	0	31		
		48	0	33		
Task Order 0590J7		110	11			
'0590K7	15-Apr-97				22-Apr-97	SHUTDOWN
		0	74	30		
Task Order 0590K7		0	74			
'0600B7	8-May-97				30-Jun-97	MAINTAIN BATTERIES
		227	422	19		
Task Order 0600B7		227	422			
'0600C7	8-May-97				30-Jun-97	WATER TREATMENT
		276	3524	30		
Task Order 0600C7		276	3524			
'0600E7	8-May-97				30-Jun-97	PORTABLE EQUIPT
		10	0	29		
		24	0	61		
Task Order 0600E7		34	0			
'0600F7	8-May-97				30-Jun-97	ROOF INSPECTION
Task Order 0600F7		0	0			
'0600H7	8-May-97				30-Jun-97	EMERGENCY LIGHTS
		0	176	19		
		111	1322	67		
Task Order 0600H7		111	1498			
'0600I7	8-May-97				30-Jun-97	TELECOMMUNICATIONS
		37	0	19		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
Task Order 0600I7		37	0			
'0600K7	8-May-97				30-Jun-97	FIRE ALARM FIRE DETECTOR
		41	37	19		
		532	59	67		
Task Order 0600K7		573	96			
'0600L7	8-May-97				30-Jun-97	CERTIFY GAGES
		0	83	19		
		338	148	26		
		0	837	33		
Task Order 0600L7		338	1068			
'0601B7	4-Jun-97				23-Jun-97	PERFORM P.M.
		1	0	19		
Task Order 0601B7		1	0			
'0610F7	4-Jun-97				24-Jun-97	PERFORM P.M.
		4	0	30		
Task Order 0610F7		4	0			
'0610H7	4-Jun-97				18-Jun-97	PERFORM P.M.
		16	0	13		
Task Order 0610H7		16	0			
'0612A7	3-Jun-97				1-Jul-97	REPAIR OIL LEAKS ON STOKE PUMP
		24	250	29		
		9	0	31		
Task Order 0612A7		33	250			
'0612C7	4-Jun-97				9-Jun-97	CONSTRUCT PADS
		24	209	25		
Task Order 0612C7		24	209			
'0612E7	1-Jul-97				29-Aug-97	REMOVE RUST ON DIFUSSER
		20	0	31		
		43	4	57		
Task Order 0612E7		63	4			
'0612I7	11-Jun-97				19-Sep-97	REPRS TO BLOWER
		102	2161	29		
		35	0	31		
		55	0	33		
Task Order 0612I7		192	2161			
'0612J7	11-Jun-97				12-Jun-97	REPAIR TUNNEL HEATER
		33	0	13		
Task Order 0612J7		33	0			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0612K7	12-Jun-97				16-Jun-97	REPLACE 3000PSI HYD RAM
		16	0	29		
		12	0	31		
Task Order 0612K7		28	0			
'0612P7	16-Jun-97				22-Jul-97	REPL FILTER
		35	464	25		
		188	2350	29		
		152	0	31		
		12	0	33		
Task Order 0612P7		387	2814			
'0612Q7	16-Jun-97				25-Jul-97	REPLACE SEALS
		8	0	22		
		199	3042	29		
		69	0	31		
		16	0	33		
		10	0	57		
Task Order 0612Q7		302	3042			
'0612X7	18-Jun-97				20-Jun-97	REPAIR HIGH PRESSURE H2O PUMP
		20	0	29		
Task Order 0612X7		20	0			
'0613B7	23-Jun-97				22-Jul-97	EXPANSION JOINTS
		38	0	31		
		22	1240	33		
Task Order 0613B7		60	1240			
'0613F7	23-Jun-97				10-Jul-97	REPR AC PROBLEMS
		63	424	30		
Task Order 0613F7		63	424			
'0613G7	23-Jun-97				26-Jun-97	MAKE REPRS TO AC UNITS
Task Order 0613G7		0	0			
'0613J7	27-Jun-97				1-Sep-97	MOVE BREAKER
		0	39	57		
Task Order 0613J7		0	39			
'0622D7	25-Jun-97				30-Jun-97	DRAIN LIQUID RHEOSTAT
		21	0	29		
Task Order 0622D7		21	0			
'0622E7	26-Jun-97				7-Jul-97	REMOVE ASBESTOS/REINSULATE
		32	0	25		
		0	0	57		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		24	0	61		
Task Order 0622E7		56	0			
'0622F7	26-Jun-97				27-Jun-97	FABRICATE COVERS FOR BLOWERS
Task Order 0622F7		0	0			
'0622I7	27-Jun-97				11-Jul-97	REPAIR GEAR BOX MODEL CART 1
		80	0	31		
Task Order 0622I7		80	0			
'0622K7	27-Jun-97				19-Aug-97	CLEAN AND PAINT NOZZLES
		4	0	29		
		16	0	57		
Task Order 0622K7		20	0			
'0622L7	27-Jun-97				10-Jul-97	CLEAN PIGEON DEBRIS,MOVE PLT.
		8	0	13		
		16	0	29		
Task Order 0622L7		24	0			
'0622M7	27-Jun-97				24-Jul-97	REPR C/T WATER SUPPLY LINE
		14	0	22		
		80	84	33		
Task Order 0622M7		94	84			
'0622Q7	3-Jul-97				8-Jul-97	REPAIR ASBESTOS COPPER LINE
Task Order 0622Q7		0	0			
0623A7	6-Jun-97				5-Aug-97	CLEAN MOTOR WINDINGS
		221	0	13		
		58	39	29		
		66	0	31		
		30	0	61		
		0	343	90		
Task Order 0623A7		375	382			
'0623D7	6-Jun-97				4-Aug-97	REPR OIL LEAKS
		40	0	13		
		70	0	29		
		6	0	31		
		24	44	33		
Task Order 0623D7		140	44			
'0623E7	6-Jun-97					REPR BEARINGS
		4	0	22		
		89	8724	29		
		9	0	31		
Task Order 0623E7		102	8724			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0623F7	6-Jun-97				28-Jul-97	REPAIR VALVE
		3	0	26		
		35	3	29		
		9	0	31		
		16	119	33		
Task Order 0623F7		63	122			
'0623H7	6-Jun-97				16-Jun-97	REPL ACTUATORS
		20	0	31		
Task Order 0623H7		20	0			
'0623I7	9-Jun-97				11-Jul-97	SCAFFOLDING
		124	0	25		
		28	0	61		
Task Order 0623I7		152	0			
'0623L7	11-Jun-97				5-Aug-97	WATER PUMP
		99	961	29		
		13	0	31		
		16	1329	33		
Task Order 0623L7		128	2290			
'0623M7	11-Jun-97				7-Aug-97	REPL COUPLING
		76	47	29		
		21	0	31		
Task Order 0623M7		97	47			
'0623S7	18-Jun-97				21-Aug-97	REPL COUPLING ON SYSTEM
		131	1240	29		
		45	0	31		
Task Order 0623S7		176	1240			
'0623T7	18-Jun-97					MODIFY 2 VALVES 3551M/3552M
Task Order 0623T7		0	0			
'0623V7	19-Jun-97				10-Jul-97	REPR LN2 LINES
		4	0	25		
		10	0	31		
		48	1402	33		
Task Order 0623V7		62	1402			
'0623Y7	30-Jun-97				6-Aug-97	INSPECT REPAIR COOLERS
		192	1053	25		
		115	415	29		
		61	0	31		
		32	0	33		
		0	7	35		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		0	0	57		
		198	0	61		
Task Order 0623Y7		598	1475			
'0630C7	4-Jun-97				19-Jun-97	PERFORM P.M.
		16	0	13		
Task Order 0630C7		16	0			
'0632A7	5-Jun-97				10-Sep-97	REPL COMPRESSOR
		208	10477	30		
		19	0	31		
Task Order 0632A7		227	10477			
'0632D7	6-Jun-97				11-Jun-97	INST REPL RING
		20	0	31		
		16	0	33		
Task Order 0632D7		36	0			
'0632E7	9-Jun-97				20-Jun-97	REPLACE EXPANSION JOIMT
		5	0	19		
		64	0	25		
		16	117	33		
Task Order 0632E7		85	117			
'0632F7	10-Jun-97				13-Jun-97	REMOVE CHILLER
Task Order 0632F7		0	0			
'0632J7	10-Jun-97				17-Jun-97	INSULATE HOT BOX
		28	200	25		
Task Order 0632J7		28	200			
'0632K7	10-Jun-97				10-Jul-97	REPR FREON LEAK
		46	113	30		
Task Order 0632K7		46	113			
'0632N7	11-Jun-97				23-Jun-97	PERFORM REPRS
		48	97	59		
Task Order 0632N7		48	97			
'0632O7	11-Jun-97				13-Aug-97	RELAMP HIGH BAY AREA
		40	493	19		
		0	0	30		
		0	493	67		
Task Order 0632O7		40	986			
'0632P7	16-Jun-97				26-Aug-97	REPLACE BACK FLOW PREVENTER
		4	0	25		
		16	257	33		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
Task Order 0632P7		20	257			
'0632Q7	17-Jun-97				24-Jun-97	INSTALL STAGING FOR CRANE/ELEV
		32	0	61		
Task Order 0632Q7		32	0			
'0632U7	23-Jun-97				3-Jul-97	PROVIDE TEMPORARY A/C
		0	674	43		
Task Order 0632U7		0	674			
'0632X7	25-Jun-97				1-Jul-97	REPLACE SHORTED C/T FAN MOTOR
		1	0	19		
		8	0	29		
		12	0	31		
Task Order 0632X7		21	0			
'0632Y7	25-Jun-97					CHANGE SWITCH ON CHILLER
		0	1157	19		
Task Order 0632Y7		0	1157			
'0632Z7	26-Jun-97				9-Jul-97	REPL INTERIOR DOOR
		24	94	35		
		2	0	57		
Task Order 0632Z7		26	94			
'0633B7	1-Jul-97				22-Sep-97	REPR ROOF ABOVE ELEVATOR
		8	0	31		
		0	0	35		
		85	976	59		
Task Order 0633B7		93	976			
'0633C7	1-Jul-97					REPL CEILING TILES
		44	0	25		
		16	0	33		
		16	133	35		
Task Order 0633C7		76	133			
'0640C7	8-May-97				30-Jun-97	PHOTO EQUIPMENT
		164	75	29		
Task Order 0640C7		164	75			
'0640D7	8-May-97				30-Jun-97	MODIFY EQUIPMENT
		362	1533	29		
Task Order 0640D7		362	1533			
'0640F7	4-Jun-97				17-Jun-97	PERFORM P.M.
		15	0	30		
Task Order 0640F7		15	0			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0640G7	4-Jun-97				24-Jun-97	PERFORM P.M.
		4	0	29		
Task Order 0640G7		4	0			
'0641A7	2-Jun-97				6-Jun-97	REPLACE WATER HEATER
		5	0	19		
		8	0	25		
		12	222	33		
Task Order 0641A7		25	222			
'0641C7	2-Jun-97				8-Jul-97	REPLACE TWO COMPRESSORS
		74	7094	30		
		29	0	31		
Task Order 0641C7		103	7094			
'0641T7	12-Jun-97				10-Jul-97	REPLACE A/C UNIT
		4	1415	30		
		8	0	43		
		8	0	61		
Task Order 0641T7		20	1415			
'0641Y7	13-Jun-97				30-Jun-97	REPLACE COMPRESSOR
		25	3104	30		
		9	0	31		
Task Order 0641Y7		34	3104			
'0642A7	22-Jul-97					RECONDITION CONTROLS ELEVATOR
		39	0	41		
Task Order 0642A7		39	0			
'0642B7	17-Jun-97				30-Jun-97	REPR CHILLER
		70	271	25		
		16	0	30		
Task Order 0642B7		86	271			
'0642K7	23-Jun-97				5-Aug-97	REPLACE COMPRESSOR
		32	1702	30		
		16	0	31		
Task Order 0642K7		48	1702			
'0642L7	24-Jun-97				11-Jul-97	REPAIR AC UNIT
		23	0	30		
Task Order 0642L7		23	0			
'0642P7	16-Jun-97					MODS TO ROOMS 137A-137B-AND C
Task Order 0642P7		0	0			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0642U7	2-Jul-97				13-Sep-97	AIR SWITCH FOR SUB STATION
		24	0	13		
Task Order 0642U7		24	0			
'0650C7	8-May-97				30-Jun-97	POWER DISTRIBUTION
		78	0	13		
Task Order 0650C7		78	0			
'0650E7	8-May-97				30-Jun-97	METER READINGS
		19	0	64		
Task Order 0650E7		19	0			
'0650F7	8-May-97				30-Jun-97	SUBSTATION INSPEC
		64	0	13		
		0	23	90		
Task Order 0650F7		64	23			
'0650G7	8-May-97				30-Jun-97	SEWAGE LIFTS STATIONS
		24	34	29		
		42	0	61		
Task Order 0650G7		66	34			
'0650H7	4-Jun-97				18-Jun-97	PERFORM P.M.
Task Order 0650H7		0	0			
'0656A7	5-Jun-97				15-Jul-97	REPLACE THERMO WINDOW PANE
		0	0	35		
Task Order 0656A7		0	0			
'0656D7	10-Jun-97					REPR OR REPL VALVE
Task Order 0656D7		0	0			
'0660D7	8-May-97				30-Jun-97	DIESELS
		32	0	29		
Task Order 0660D7		32	0			
'0660E7	8-May-97				30-Jun-97	REPRO EQUIPMENT
Task Order 0660E7		0	0			
'0660F7	4-Jun-97				18-Jun-97	PERFORM P.M.
		7	0	30		
Task Order 0660F7		7	0			
'0660G7	4-Jun-97				25-Jun-97	PERFORM P.M
		32	0	29		
Task Order 0660G7		32	0			
'0660H7	4-Jun-97				18-Jun-97	PERFORM P.M.

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		8	0	33		
Task Order 0660H7		8	0			
'0660I7	4-Jun-97				18-Jun-97	PERFORM P.M.
		6	0	30		
Task Order 0660I7		6	0			
'0662B7	2-Jun-97				7-Aug-97	REPLACE WINDOW GLASS
		0	0	35		
Task Order 0662B7		0	0			
'0662G7	9-Jun-97				26-Sep-97	RELAMP HI BAY AREA
		21	2048	19		
		5	0	73		
Task Order 0662G7		26	2048			
'0662I7	11-Jun-97				12-Aug-97	SHUT OFF VALVE
		5	0	31		
		16	1071	33		
		10	0	61		
Task Order 0662I7		31	1071			
'0662L7	12-Jun-97				3-Jul-97	REPLACE A/C UNIT
		4	15	19		
		8	700	30		
		8	32	35		
Task Order 0662L7		20	747			
'0662M7	13-Jun-97				26-Jun-97	REPAIR ROOF LEAK
		47	55	59		
Task Order 0662M7		47	55			
'0662P7	17-Jun-97				30-Jun-97	REPAIR/INSULATE DRAIN LINE
		12	0	25		
		6	0	30		
		8	0	43		
Task Order 0662P7		26	0			
'0662Q7	19-Jun-97				25-Jun-97	REPLACE BROKEN WATER LINE
		43	119	33		
		4	7	35		
		32	0	61		
Task Order 0662Q7		79	126			
'0662R7	19-Jun-97					LEAKING CONDENSATE LINE
Task Order 0662R7		0	0			
'0662T7	23-Jun-97				26-Jun-97	REINSULATE CHILL WATER LINE

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		16	0	25		
		16	0	33		
Task Order 0662T7		32	0			
'0662U7	24-Jun-97				11-Jul-97	REPLACE LOCK ON HANDICAP DOOR
Task Order 0662U7		0	0			
'0662X7	2-Jul-97				20-Oct-97	INSTALL FINE WIRE MESH
		217	310	35		
Task Order 0662X7		217	310			
'0663F7	27-Jun-97				8-Oct-97	REPLACE GEAR BOX
		60	4619	29		
		10	0	31		
Task Order 0663F7		70	4619			
'0663G7	11-Jul-97				27-Aug-97	REPL LEFT END AC IN 1273
		6	27	19		
		8	699	30		
		8	64	35		
Task Order 0663G7		22	790			
'0700B7	16-Jun-97				31-Jul-97	REPLACE BATTERIES
		273	454	19		
Task Order 0700B7		273	454			
'0700C7	16-Jun-97				31-Jul-97	WATER TREATMENT
		323	690	30		
Task Order 0700C7		323	690			
'0700F7	16-Jun-97				31-Jul-97	ROOF INSPECTION
Task Order 0700F7		0	0			
'0700H7	16-Jun-97				31-Jul-97	EMERGENCY LIGHTS
		136	343	67		
Task Order 0700H7		136	343			
'0700I7	16-Jun-97				31-Jul-97	TELECOMMUNICATIONS
		25	0	19		
Task Order 0700I7		25	0			
'0700K7	16-Jun-97				31-Jul-97	FIRE ALARMS FIRE DETECTION
		36	125	19		
		514	620	67		
Task Order 0700K7		550	745			
'0700L7	16-Jun-97				31-Jul-97	CERTIFY GAGES
		307	1239	26		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		0	293	33		
Task Order 0700L7		307	1532			
'0701A7	3-Jul-97				8-Oct-97	DOMESTIC WATER SYSTEM
		224	4720	33		
Task Order 0701A7		224	4720			
'0701B7	3-Jul-97				29-Aug-97	LIQ NITRO TRAILER
		143	0	33		
Task Order 0701B7		143	0			
'0710D7	8-Jul-97				21-Jul-97	PERFORM PM
		4	27	30		
Task Order 0710D7		4	27			
'0714A7	2-Jul-97				21-Jul-97	PICK UP HEATER AND MOVE TO BLD
		20	0	31		
Task Order 0714A7		20	0			
'0714E7	2-Jul-97					REPAIR LARGE BUTTERFLY VALVE
		0	5836	29		
Task Order 0714E7		0	5836			
'0714F7	2-Jul-97				14-Jul-97	REPL AC UNIT IN 139C
		18	60	19		
		6	0	25		
		0	700	30		
		16	62	33		
		12	31	35		
		8	0	43		
		4	0	61		
Task Order 0714F7		64	853			
'0714I7	9-Jul-97				21-Jul-97	REPAIR/REPLACE A/C UNIT
		10	0	19		
		0	0	29		
		0	730	30		
		4	5	35		
		8	0	43		
		8	0	61		
Task Order 0714I7		30	735			
'0714J7	8-Jul-97				29-Jul-97	REPLACE SOFFIT
		24	55	35		
		4	0	57		
Task Order 0714J7		28	55			
'0714K7	8-Jul-97				28-Jul-97	REPAIR LEAKS STRAINER/VALVES

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		2	0	19		
		12	0	26		
		41	703	29		
		42	0	31		
		28	12	33		
		5	0	57		
Task Order 0714K7		130	715			
'0714L7	9-Jul-97				30-Jul-97	REPLACE DAMAGE INSULATION
		40	1090	25		
Task Order 0714L7		40	1090			
'0714M7	9-Jul-97				8-Sep-97	REPLACE LIGHT FIXTURES
		31	367	19		
Task Order 0714M7		31	367			
'0714P7	10-Jul-97				23-Jul-97	REPLACE O-RINGS BOTTLE PLUGS
		38	0	31		
		32	113	33		
		16	0	57		
Task Order 0714P7		86	113			
'0714Q7	10-Jul-97					CHECK PUMP ALIGNMENT
Task Order 0714Q7		0	0			
'0714U7	16-Jul-97				30-Sep-97	REPL ACTUATORS
		8	1359	29		
		16	0	33		
Task Order 0714U7		24	1359			
'0714W7	21-Jul-97				22-Jul-97	CHECK CONTROL VALVES/LINES
		32	0	31		
		10	0	33		
Task Order 0714W7		42	0			
'0714X7	21-Jul-97				23-Jul-97	INSTALL 4" SPOOL PC
		15	0	22		
		26	0	25		
		3	0	26		
		30	0	33		
Task Order 0714X7		74	0			
'0715G7	25-Jul-97				28-Jul-97	C/T OVERFLOWING CLEAN SCREENS
		8	0	29		
		7	0	31		
		4	0	57		
		7	181	61		
Task Order 0715G7		26	181			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0715H7	28-Jul-97					REPLACE SEALS IN BLOWER
		8	0	19		
		186	2671	29		
		56	0	31		
		44	0	33		
Task Order 0715H7		294	2671			
'0715K7	29-Jul-97				3-Sep-97	REWIRE LIGHT FIXTURE
		40	799	19		
		0	14	61		
Task Order 0715K7		40	813			
'0715M7	7-Aug-97				7-Oct-97	REPAINT LINES
		60	420	57		
Task Order 0715M7		60	420			
'0715R7	6-Aug-97					REPL VALVE
		28	0	19		
		49	0	22		
		1	0	26		
		32	0	29		
		76	0	31		
		372	3601	33		
		24	0	61		
Task Order 0715R7		582	3601			
'0722A7	8-Jul-97					REMOVE A/C DUCT (ASBESTOS INS)
		1212	3053	25		
		0	35	30		
		12	111	35		
		35	824	43		
		3	0	61		
Task Order 0722A7		1262	4023			
'0722D7	14-Jul-97				23-Sep-97	REPAIR AIR REDUCTION VALVE
		3	0	19		
		2	0	26		
		48	2173	29		
		20	0	31		
		0	167	33		
Task Order 0722D7		73	2340			
'0722F7	24-Jul-97				26-Aug-97	REPR HYDRO MACHINE
		24	49	29		
Task Order 0722F7		24	49			
'0723B7	8-Jul-97				28-Jul-97	REPAIR/REPLACE COUPLING

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		64	2562	29		
		9	0	31		
		28	0	61		
Task Order 0723B7		101	2562			
'0723C7	8-Jul-97				16-Jul-97	REMOVE INSULATION IGV ACTUATOR
		98	396	25		
Task Order 0723C7		98	396			
'0723D7	9-Jul-97				30-Jul-97	REPLACE COMPRESSOR
		10	1147	30		
		10	0	31		
		0	14	33		
Task Order 0723D7		20	1161			
'0723E7	9-Jul-97				11-Jul-97	CLEAN ALL CONDUCTING PATHS
		32	0	13		
Task Order 0723E7		32	0			
'0723F7	9-Jul-97				21-Jul-97	INSTALL/REMOVE STAGING
		36	0	61		
		2	0	96		
Task Order 0723F7		38	0			
'0723H7	10-Jul-97				22-Aug-97	REPAIR PUMP SEAL FOR CHILLER
		32	518	29		
		0	185	33		
Task Order 0723H7		32	703			
'0723J7	14-Aug-97					MODIFY VENTING SYSTEM
		22	0	41		
Task Order 0723J7		22	0			
'0723K7	15-Jul-97				26-Aug-97	REPOSITION RELIEF VALVES
		8	0	22		
		32	315	33		
		7	0	57		
Task Order 0723K7		47	315			
'0723L7	14-Jul-97					REPAIR LEAK RISER/FAN BEARING
		48	0	25		
		80	891	29		
		41	0	31		
Task Order 0723L7		169	891			
'0723M7	15-Jul-97				19-Sep-97	REPAIR EXHAUST SYSTEM
		16	0	13		
		5	0	19		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		4	0	29		
		16	0	30		
		30	0	31		
		0	43	90		
Task Order 0723M7		71	43			
'0723N7	17-Jul-97				12-Aug-97	HOOK UP FILTERING CARTS]
		16	0	29		
		2	0	31		
		0	91	33		
Task Order 0723N7		18	91			
'0723O7	17-Jul-97				29-Jul-97	PULL SPOOL PCS
		78	0	29		
		77	0	31		
Task Order 0723O7		155	0			
'0723R7	18-Jul-97				21-Jul-97	TIGHTEN FLANGES CLEAN OIL
		4	0	33		
		15	0	61		
Task Order 0723R7		19	0			
'0723S7	21-Jul-97				3-Sep-97	REPLACE A/C UNIT
		10	9	30		
		8	0	35		
		10	0	61		
Task Order 0723S7		28	9			
'0723V7	13-Aug-97				26-Sep-97	PAINT TEST SECTION BABY BLUE
		19	158	57		
Task Order 0723V7		19	158			
'0723X7	24-Jul-97					REPL BAD PRESSURE SWITCH
		0	276	29		
Task Order 0723X7		0	276			
'0723Y7	24-Jul-97				29-Jul-97	CHANGE BRUSHES 20 H.P. MOTOR
		32	0	13		
Task Order 0723Y7		32	0			
'0724A7	25-Jul-97				15-Sep-97	REMOVE SEDIMENT FROM RESERVOIR
		4	0	22		
		18	193	57		
		27	31	61		
Task Order 0724A7		49	224			
'0724E7	31-Jul-97				22-Aug-97	CHANGE OUT PUMPS
		3	0	19		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		32	0	29		
		20	0	31		
Task Order 0724E7		55	0			
'0724F7	31-Jul-97				2-Sep-97	INSTALL INSULATION
		40	346	25		
Task Order 0724F7		40	346			
'0724G7	1-Aug-97				2-Sep-97	REMOVE INSUL REPLACE
		165	2212	25		
		8	0	26		
		34	0	31		
		29	0	61		
Task Order 0724G7		236	2212			
'0730C7	8-Jul-97				23-Jul-97	PERFORM PM
		8	0	30		
Task Order 0730C7		8	0			
'0730D6	28-Mar-97					RELOCATE TELEPHONE CABLES
		16	0	19		
		69	0	67		
Task Order 0730D6		85	0			
'0730E7	8-Jul-97				11-Jul-97	PERFORM PM
		1	0	19		
Task Order 0730E7		1	0			
'0730G7	8-Jul-97				12-Aug-97	PERFORM PM
		8	0	29		
Task Order 0730G7		8	0			
'0730H7	8-Jul-97				31-Jul-97	PERFORM PM
		46	373	30		
Task Order 0730H7		46	373			
'0734A7	16-Jul-97					TEST SECTION LIGHTING
		36	0	41		
Task Order 0734A7		36	0			
'0734B7	2-Jul-97					CK OUT HEATING SYSTEM
		26	0	30		
Task Order 0734B7		26	0			
'0734C7	2-Jul-97				30-Sep-97	CK OUT AC SYSTEM
		81	1090	30		
Task Order 0734C7		81	1090			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0734G7	2-Jul-97				3-Jul-97	REPAIR LEAK ON CONDENSATE LINE
		24	0	25		
		4	0	33		
Task Order 0734G7		28	0			
'0734H7	3-Jul-97					REPAIR ROOF
		0	20	33		
Task Order 0734H7		0	20			
'0734L7	8-Jul-97				18-Jul-97	REPLACE C/T WATER LINE
		24	203	33		
Task Order 0734L7		24	203			
'0734N7	11-Jul-97					REPR/REPLACE PNEUMATIC CONTROL
		46	1142	30		
Task Order 0734N7		46	1142			
'0734O7	11-Jul-97				30-Sep-97	REPLACE GRATING
		32	0	22		
		32	0	29		
		8	0	31		
Task Order 0734O7		72	0			
'0734R7	10-Jul-97				29-Aug-97	REPAIR/REPLACE WINDOW UNIT
		8	699	30		
		16	5	35		
Task Order 0734R7		24	704			
'0734V7	14-Jul-97				25-Jul-97	REPAIR VAC PUMP
		41	0	29		
		5	0	31		
Task Order 0734V7		46	0			
'0734W7	16-Jul-97				23-Jul-97	REPAIR LEAKING GAS VALVE
		50	0	22		
		12	0	29		
		25	0	31		
		67	0	33		
		17	0	57		
		14	0	58		
		39	0	61		
Task Order 0734W7		224	0			
'0735A7	18-Jul-97					BUILD UP ROOF SECTION
Task Order 0735A7		0	0			
'0735B7	18-Jul-97					BUIL SHEETMETAL COVERS
Task Order 0735B7		0	0			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0735C7	18-Jul-97				18-Jul-97	REPL SUPPORT BRACKET
		24	0	29		
Task Order 0735C7		24	0			
'0735F7	23-Jul-97				28-Jul-97	REPAIR SUMP PUMPS IN PIT
		29	1191	29		
Task Order 0735F7		29	1191			
'0735G7	23-Jul-97					RIP UP TILE/REPL
		160	1043	25		
		0	27	29		
		18	0	31		
		8	0	33		
		187	7053	58		
		20	0	61		
Task Order 0735G7		393	8123			
'0735K7	31-Jul-97				7-Oct-97	REPAIR BEARING ASSEMBLIES
		81	1138	29		
Task Order 0735K7		81	1138			
'0740C7	16-Jun-97				31-Jul-97	PHOTO EQUIPMENT
		161	701	29		
Task Order 0740C7		161	701			
'0740D7	16-Jun-97				31-Jul-97	MODIFY EQUIPMENT
		234	709	29		
Task Order 0740D7		234	709			
'0740E7	8-Jul-97				16-Jul-97	PERFORM PM
		8	0	19		
Task Order 0740E7		8	0			
'0740G7	8-Jul-97				8-Aug-97	PERFORM PM
		8	201	30		
Task Order 0740G7		8	201			
'0740H7	8-Jul-97				21-Jul-97	PERFORM PM
		6	33	30		
Task Order 0740H7		6	33			
'0740I7	8-Jul-97				6-Aug-97	PERFORM PM
		16	0	29		
		14	0	33		
Task Order 0740I7		30	0			
'0740J7	8-Jul-97				21-Jul-97	PERFORM PM

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		4	303	30		
Task Order 0740J7		4	303			
'0740K7	8-Jul-97				6-Aug-97	PERFORM PM
		18	184	30		
Task Order 0740K7		18	184			
'0740M7	8-Jul-97				29-Jul-97	PERFORM PM
		1	0	19		
		4	583	29		
Task Order 0740M7		5	583			
'0740N7	8-Jul-97				15-Aug-97	PERFORM PM
		72	36	29		
		24	1665	30		
Task Order 0740N7		96	1701			
'0741H7	7-Jul-97				21-Jul-97	REPAIR WATER LEAK
		16	14	33		
		8	0	35		
Task Order 0741H7		24	14			
'0741I7	8-Jul-97				3-Oct-97	REPLACE/REPAIR C/T GEAR BOX
		76	4566	29		
		27	0	31		
Task Order 0741I7		103	4566			
'0741S7	16-Jul-97				4-Aug-97	INSTALL WINDOW UNIT
		8	12	19		
		8	699	30		
		2	0	35		
		8	0	43		
		6	0	72		
Task Order 0741S7		32	711			
'0741Y7	21-Jul-97				26-Aug-97	PAINT PARKING SPACES
		57	363	57		
Task Order 0741Y7		57	363			
'0742D7	21-Jul-97				6-Aug-97	REPAIR A/H
		32	0	13		
		19	1524	30		
		43	0	31		
Task Order 0742D7		94	1524			
'0742E7	22-Jul-97				23-Jul-97	CLEAN/DAMP MOP 4FT BELOW
		43	0	61		
		2	0	96		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
Task Order 0742E7		45	0			
'0742F7	23-Jul-97				31-Jul-97	INST ELECT CIRCUITS
		24	33	19		
Task Order 0742F7		24	33			
'0742O7	28-Jul-97				29-Aug-97	REPLACE A/C UNIT
		32	2114	30		
Task Order 0742O7		32	2114			
'0742Q7	28-Jul-97				15-Sep-97	EVALUATE/MODIFY A/C VENT
		4	97	35		
		12	238	43		
		1	0	57		
		12	0	61		
Task Order 0742Q7		29	335			
'0742R7	29-Jul-97				25-Sep-97	DISCONNECT UTILITIES OVEN
		20	0	19		
		8	0	29		
		17	0	31		
		48	67	33		
		7	0	43		
		8	0	61		
Task Order 0742R7		108	67			
'0742U7	30-Jul-97				11-Sep-97	REPL DOOR AND DOOR JAMBS
		16	428	35		
		26	38	59		
Task Order 0742U7		42	466			
'0742V7	31-Jul-97				1-Oct-97	REPAIR ROOF LEAKS
		92	27	59		
Task Order 0742V7		92	27			
'0742X7	1-Aug-97				8-Aug-97	INSULATE DUST COLLECTOR
		30	0	25		
Task Order 0742X7		30	0			
'0750C7	16-Jun-97				31-Jul-97	POWER DISTRIBUTION
		186	0	13		
		0	649	90		
Task Order 0750C7		186	649			
'0750F7	16-Jun-97				31-Jul-97	SUB STATION INSPECTION
		80	0	13		
		0	29	90		
Task Order 0750F7		80	29			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0757A7	8-Jul-97				28-Jul-97	REPLACE DEFECTED CABLE
		18	176	19		
Task Order 0757A7		18	176			
'0757C7	8-Jul-97				7-Aug-97	CHECK OUT BREAKER IN 1233
		80	0	13		
		16	0	31		
		0	857	90		
Task Order 0757C7		96	857			
'0757D7	11-Jul-97				14-Aug-97	CLEAN COMPONENTS ON BREAKER
		95	0	13		
		0	49	90		
Task Order 0757D7		95	49			
'0757E7	14-Jul-97				16-Jul-97	REPAIR STEAM LEAK
		4	0	22		
		16	0	33		
		0	0	58		
		8	0	61		
Task Order 0757E7		28	0			
'0757G7	16-Jul-97				5-Sep-97	INVESTIGATE HVAC
		215	17	30		
		16	0	31		
		32	0	61		
		15	0	72		
Task Order 0757G7		278	17			
'0757H7	16-Jul-97				19-Aug-97	REPL SIX RISERS
		24	0	13		
		0	76	90		
Task Order 0757H7		24	76			
'0757I7	23-Jul-97				28-Jul-97	WATER BREAK BLDG.1245
		14	21	33		
		10	0	61		
Task Order 0757I7		24	21			
'0757J7	24-Jul-97					INSTALL COPPER LINE
		40	266	33		
Task Order 0757J7		40	266			
'0757K7	25-Jul-97				4-Aug-97	REPAIR GROUNDS CONTROL SYSTEM
		102	0	13		
Task Order 0757K7		102	0			
Task Order 0757L7		0	0			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0757M7	28-Jul-97					CLEAN CONNECTIONS ON BREAKER
Task Order 0757M7		0	0			
'0757O7	30-Jul-97					PROV EQUIP FOR NEW NTF DRIVE
		24	0	13		
		32	0	29		
Task Order 0757O7		56	0			
'0760D7	16-Jun-97				31-Jul-97	DIESELS
		20	0	29		
Task Order 0760D7		20	0			
'0760F7	8-Jul-97				21-Jul-97	PERFORM PM
		15	75	30		
Task Order 0760F7		15	75			
'0762C7	3-Jul-97				16-Jul-97	REPLACE 2 TRAILER DOORS
		23	445	35		
Task Order 0762C7		23	445			
'0762F7	8-Jul-97				15-Jul-97	REPAIR WATER LEAK
		4	0	25		
		48	285	33		
		8	0	61		
Task Order 0762F7		60	285			
'0762I7	10-Jul-97				16-Jul-97	REPAIR/REROUTE CONDENSATE PUMP
		8	0	22		
		16	84	33		
		2	0	57		
Task Order 0762I7		26	84			
'0762O7	11-Jul-97				19-Jul-97	REPAIR CONTROL VALVE
		0	0	19		
		44	0	29		
		15	0	31		
Task Order 0762O7		59	0			
'0762Y7	18-Jul-97				1-Aug-97	SAFETY AUDIT
		38	32	19		
		8	0	22		
Task Order 0762Y7		46	32			
'0763H7	24-Jul-97				24-Jul-97	CITY WATER LEAKING/SECURE
		24	0	25		
		16	172	33		
Task Order 0763H7		40	172			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0763J7	5-Sep-97					PAINT ROOM 123
Task Order 0763J7		0	0			
'0763K7	25-Jul-97				20-Aug-97	REPLACE CRACKED WINDOW
		0	0	35		
Task Order 0763K7		0	0			
'0763M7	28-Jul-97				30-Sep-97	LEAKS FROM WINDOW
		62	205	59		
Task Order 0763M7		62	205			
'0763U7	16-Sep-97				25-Sep-97	REPL HOT AND COLD WATER LINES
		28	285	25		
		54	394	33		
Task Order 0763U7		82	679			
'0790A7	11-Jun-97				31-Jul-97	SHUTDOWN
		314	0	13		
		13	14	26		
		306	2569	29		
		133	745	30		
		75	0	31		
		24	304	33		
		79	19	61		
		1	0	67		
		0	1156	90		
Task Order 0790A7		945	4807			
'0790B7	26-Jun-97				25-Jul-97	SHUTDOWN]
		130	0	13		
		4	0	26		
		42	1111	29		
		52	38	30		
		40	0	31		
		8	0	33		
		0	162	90		
Task Order 0790B7		276	1311			
'0790C7	16-Jul-97				7-Aug-97	SHUTDOWN
		8	0	25		
		84	0	29		
		10	18	30		
		3	0	31		
Task Order 0790C7		105	18			
'0790D7	16-Jul-97				14-Aug-97	SHUTDOWN
Task Order 0790D7		0	0			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0800B7	14-Jul-97				29-Aug-97	REPLACE BATTERIES
		214	3470	19		
		55	0	73		
Task Order 0800B7		269	3470			
'0800C7	14-Jul-97				29-Aug-97	WATER TREATMENT
		258	0	30		
Task Order 0800C7		258	0			
'0800E7	14-Jul-97				29-Aug-97	PORTABLE PUMPS
		44	0	29		
Task Order 0800E7		44	0			
'0800F7	14-Jul-97				29-Aug-97	ROOF INSPECTION
Task Order 0800F7		0	0			
'0800G7	14-Jul-97				29-Aug-97	PURGE CHILLER
		46	0	30		
Task Order 0800G7		46	0			
'0800H7	14-Jul-97				29-Aug-97	EMERGENCY LIGHTS
		0	54	19		
		112	0	67		
Task Order 0800H7		112	54			
'0800I7	14-Jul-97				29-Aug-97	TELECOMMUNICATIONS
		21	0	19		
		16	0	73		
Task Order 0800I7		37	0			
'0800K7	14-Jul-97				29-Aug-97	FIRE ALARM/FIRE DETECTION
		0	20	19		
		496	1667	67		
Task Order 0800K7		496	1687			
'0800L7	14-Jul-97				29-Aug-97	CERTIFY GAGES
		301	2759	26		
		0	1904	33		
Task Order 0800L7		301	4663			
'0810C7	5-Aug-97				19-Aug-97	SUPPORT LOAD TESTING
		20	0	31		
Task Order 0810C7		20	0			
'0810D7	13-Aug-97				8-Sep-97	PERFORM P.M.
		1	0	19		
Task Order 0810D7		1	0			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0810H7	13-Aug-97				2-Sep-97	PERFORM P.M.
		8	0	13		
Task Order 0810H7		8	0			
'0816A7	7-Aug-97				10-Sep-97	VALVE PLATES REMOVAL
		111	2408	29		
Task Order 0816A7		111	2408			
0816B7	7-Aug-97				6-Sep-97	LEAKING PACKING
		16	0	29		
Task Order 0816B7		16	0			
'0816C7	7-Aug-97					REPL STAGAE RINGS
		56	896	29		
Task Order 0816C7		56	896			
'0816D7	7-Aug-97				3-Sep-97	REPL CRANK CASE OIL
		24	0	29		
Task Order 0816D7		24	0			
'0816E7	7-Aug-97				17-Sep-97	REPR TO BLOWER
		108	10987	29		
		71	0	31		
		4	0	33		
Task Order 0816E7		183	10987			
'0816H7	8-Aug-97					CLEAN RUST AND PAINT
Task Order 0816H7		0	0			
'0816I7	8-Aug-97				6-Oct-97	BROKEN CEILING TILE
		4	49	19		
		12	0	35		
		4	0	57		
Task Order 0816I7		20	49			
'0816L7	12-Aug-97				29-Aug-97	REPLACE WINDOW A/C UNIT
		12	508	30		
		6	0	43		
		6	0	72		
Task Order 0816L7		24	508			
'0816M7	13-Aug-97				19-Aug-97	REPLACE OIL IN GEAR BOXES
		24	0	29		
Task Order 0816M7		24	0			
'0816O7	15-Aug-97					STUFFING BOXES LEAKING OIL
		0	173	29		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
Task Order 0816O7		0	173			
'0816Q7	14-Aug-97				9-Sep-97	REPAIR A/C IN CONTROL ROOM
		8	0	25		
		16	341	30		
Task Order 0816Q7		24	341			
'0816R7	14-Aug-97				10-Sep-97	REPLACE
		36	7580	30		
		16	0	31		
Task Order 0816R7		52	7580			
'0816T7	18-Aug-97					CK VALVE 3061A
Task Order 0816T7		0	0			
'0816V7	15-Aug-97				25-Sep-97	REBUILD WATER PUMP
		48	794	29		
Task Order 0816V7		48	794			
'0816Y7	20-Aug-97					REPLACE RAM
		24	0	29		
		12	0	31		
Task Order 0816Y7		36	0			
'0816Z7	22-Aug-97				29-Aug-97	REPAIR BROKEN STORM DRAIN
		0	0	31		
		26	36	33		
		16	0	61		
Task Order 0816Z7		42	36			
'0817D7	22-Aug-97					REPR AND REPL VALVES
		0	3323	33		
Task Order 0817D7		0	3323			
'0817E7	25-Aug-97				5-Sep-97	REPR WATER BREAK
		22	69	33		
		12	0	58		
		16	0	61		
Task Order 0817E7		50	69			
'0817F7	26-Aug-97				10-Sep-97	REPAIR A/C UNIT FRONT OFFICE
		12	61	25		
		8	343	30		
Task Order 0817F7		20	404			
'0817G7	26-Aug-97					REPAIR THRESHOLD
Task Order 0817G7		0	0			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0817I7	28-Aug-97					SEAL SEATING ON VACUUM VALVE
Task Order 0817I7		0	0			
'0817J7	28-Aug-97					REPLACE LEAKING SEAL ON VACUUM
Task Order 0817J7		0	0			
'0817K7	28-Aug-97					REPAIR AIR LEAK
Task Order 0817K7		0	0			
'0817L7	28-Aug-97					REMOVE BONNET FROM 24" VALVE
		0	47	19		
Task Order 0817L7		0	47			
'0817M7	28-Aug-97					REPLACE PNEUMATIC CONTROL VALV
Task Order 0817M7		0	0			
'0817N7	28-Aug-97					INSTALL 5000 PSI 6" VALVE
Task Order 0817N7		0	0			
'0817O7	28-Aug-97					REMOVE/INSPECT CHECK VALVE
Task Order 0817O7		0	0			
'0817P7	28-Aug-97					REPLACE PLATES IN SHIM PACK
Task Order 0817P7		0	0			
'0817Q7	28-Aug-97				11-Sep-97	INSTALL FILTER ON H.S.
		14	0	22		
		12	0	29		
		10	0	31		
		36	4223	33		
Task Order 0817Q7		72	4223			
'0817S7	29-Aug-97					REPAIR STEAM LEAKS EJECTOR
		0	294	25		
		22	0	33		
Task Order 0817S7		22	294			
'0817T7	3-Sep-97				5-Sep-97	INSTALL ROLLERS/PLATES
		8	0	22		
		19	220	25		
Task Order 0817T7		27	220			
'0817U7	3-Sep-97				4-Sep-97	REPAIR BREAKER/GEAR BOX
		30	0	13		
		0	133	90		
Task Order 0817U7		30	133			
'0820C7	13-Aug-97				26-Aug-97	PERFORM P.M.

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		16	81	30		
Task Order 0820C7		16	81			
'0820D7	13-Aug-97				30-Sep-97	PERFORM P.M.
		48	0	13		
Task Order 0820D7		48	0			
'0823A7	4-Aug-97				9-Aug-97	CLEAN WINDINGS BOUNDRY LAYER
Task Order 0823A7		0	0			
'0823C7	5-Aug-97				22-Aug-97	RELOCATE SITE TRAILERS
		15	896	19		
		16	0	31		
		42	288	35		
		2	0	57		
		30	358	58		
		10	0	61		
Task Order 0823C7		115	1542			
'0823D7	6-Aug-97					CLEAN BOX
		24	75	61		
Task Order 0823D7		24	75			
'0823E7	7-Aug-97				12-Sep-97	INSTALL AIR LINE
		4	0	19		
		20	51	33		
Task Order 0823E7		24	51			
'0823F7	7-Aug-97				17-Sep-97	RELOCATE HEATER PIPES
		2	0	19		
		4	0	22		
		14	0	25		
		20	92	33		
Task Order 0823F7		40	92			
'0823G7	8-Aug-97				21-Aug-97	REPLACE RTD WIRING
		22	125	19		
Task Order 0823G7		22	125			
'0823I7	11-Aug-97				27-Aug-97	REPR DAMAGED INSULATION
		20	0	25		
Task Order 0823I7		20	0			
'0823M7	13-Aug-97				21-Aug-97	REPL FILTER MATERIAL
		48	301	29		
		7	0	31		
Task Order 0823M7		55	301			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0830E7	13-Aug-97				26-Aug-97	PERFORM P.M.
		8	33	30		
Task Order 0830E7		8	33			
'0830I7	13-Aug-97				19-Sep-97	PERFORM P.M.
		8	502	29		
		28	162	30		
Task Order 0830I7		36	664			
'0836A7	5-Aug-97					REPL INSULATION
		0	444	25		
Task Order 0836A7		0	444			
'0836D7	5-Aug-97					INSTALL A GUTTER
Task Order 0836D7		0	0			
'0836G7	6-Aug-97				7-Aug-97	REBUILD VAC PUMP
		16	0	29		
		6	131	33		
Task Order 0836G7		22	131			
'0836H7	6-Aug-97				8-Aug-97	REPR LEAK ON HYDRAULIC
		16	0	13		
		8	0	31		
		6	0	33		
		45	75	61		
Task Order 0836H7		75	75			
'0836J7	8-Aug-97					REPR HVAC
		46	640	30		
Task Order 0836J7		46	640			
'0836K7	8-Aug-97				18-Aug-97	REPAIR VACUUM PUMP
		24	978	29		
Task Order 0836K7		24	978			
'0836L7	11-Aug-97				12-Aug-97	REPLACE MOTOR BEARINGS
		17	0	13		
		26	316	29		
		28	0	31		
		0	170	90		
Task Order 0836L7		71	486			
'0836O7	15-Aug-97				14-Oct-97	REPAIR CHILLER BARREL
		0	1231	19		
		18	0	25		
		36	69	30		
Task Order 0836O7		54	1300			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0836P7	15-Aug-97				22-Aug-97	REPAIR COOLING TOWER GEAR BOX
		16	371	29		
		8	0	31		
Task Order 0836P7		24	371			
'0836S7	19-Aug-97				20-Aug-97	TRANSPORT CRANE
		24	0	31		
Task Order 0836S7		24	0			
'0836V7	20-Aug-97				7-Oct-97	EVALUATE/RESOLVE MOTOR BEARING
		172	134	29		
		56	0	31		
Task Order 0836V7		228	134			
'0837D7	21-Aug-97					LOCATE ROOF LEAK
		8	0	25		
		28	145	59		
Task Order 0837D7		36	145			
'0837G7	26-Aug-97					REMOVE HONEYCOMB MATERIAL C/T
Task Order 0837G7		0	0			
'0837L7	28-Aug-97				15-Sep-97	REINSULATE SUPPLY LINE
		58	301	25		
		16	55	33		
Task Order 0837L7		74	356			
'0840C7	14-Jul-97				29-Aug-97	PHOTO EQUIPMENT
		127	0	29		
Task Order 0840C7		127	0			
'0840D7	21-Jul-97				29-Aug-97	MODIFY EQUIPT
		390	99	29		
Task Order 0840D7		390	99			
'0840E7	13-Aug-97				22-Sep-97	PERFORM P.M.
		43	570	30		
Task Order 0840E7		43	570			
'0840F7	13-Aug-97				2-Oct-97	PERFORM P.M.
		40	0	29		
		78	1654	30		
		104	0	67		
Task Order 0840F7		222	1654			
'0840G7	14-Jul-97				18-Sep-97	PERFORM P.M.
		60	1890	30		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
Task Order 0840G7		60	1890			
'0840I7	13-Aug-97				12-Sep-97	PERFORM P.M.
Task Order 0840I7		0	0			
'0841A7	4-Aug-97					RELAMP BLDG 1230
		238	2675	19		
Task Order 0841A7		238	2675			
'0841C7	12-Aug-97					REPAIR RETURN AIR BLOWER
Task Order 0841C7		0	0			
'0841F7	6-Aug-97				21-Aug-97	REPR WALK IN FREEZER
		34	203	30		
Task Order 0841F7		34	203			
'0841H7	7-Aug-97				15-Sep-97	REBUILD 2 CONDENSATE TANKS
		48	1098	29		
		0	0	35		
Task Order 0841H7		48	1098			
'0841J7	12-Aug-97					REPAIR/INVESTIGATE CHILL WATER
		26	0	25		
		33	35	30		
		80	0	41		
Task Order 0841J7		139	35			
'0841O7	15-Aug-97				26-Aug-97	REPLACE A/C COMPRESSOR
		6	0	25		
		8	1328	30		
		16	0	31		
Task Order 0841O7		30	1328			
'0841P7	18-Aug-97					PAINT WALLS/RELOC ELECT ITEMS
		42	195	19		
		16	0	22		
		10	69	33		
		2	0	35		
		1	0	43		
		97	272	57		
		3	0	58		
		2	0	61		
Task Order 0841P7		173	536			
'0841Q7	18-Aug-97					REPL FAN AND HOOD
		16	170	19		
		0	904	29		
		10	0	31		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		0	1	35		
		3	137	43		
		2	0	59		
		1	0	61		
Task Order 0841Q7		32	1212			
'0841X7	25-Aug-97				11-Sep-97	ACID FLUSH SYSTEMS
		1	0	26		
		1	0	29		
		32	213	33		
Task Order 0841X7		34	213			
'0842E7	27-Aug-97					REPR RAMS JACKS
		0	0	29		
Task Order 0842E7		0	0			
'0850C7	14-Jul-97				29-Aug-97	POWER DISTRIBUTION
		200	0	13		
		0	7893	90		
Task Order 0850C7		200	7893			
'0850F7	14-Jul-97				29-Aug-97	POWER DISTRIBUTION
		64	0	13		
		0	13	90		
Task Order 0850F7		64	13			
'0850G7	14-Jul-97				29-Aug-97	SEWAGE LIFT STATION
		48	0	29		
		16	0	61		
Task Order 0850G7		64	0			
'0858A7	11-Aug-97				16-Aug-97	FAB/INSTALL SECTION CITY LINE
		4	0	22		
		15	411	33		
Task Order 0858A7		19	411			
'0858C7	13-Aug-97				23-Oct-97	REPL FEEDER AND TERMINATOR
		0	0	90		
Task Order 0858C7		0	0			
'0858D7	13-Aug-97				6-Sep-97	REPR NITRO LEAK
		0	0	90		
Task Order 0858D7		0	0			
'0858E7	15-Aug-97				27-Oct-97	REPLACE INDICATING LIGHT SOCKE
		0	162	19		
Task Order 0858E7		0	162			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0858G7	14-Aug-97				18-Aug-97	FILL 3 TANKS OF OCB 2044
		48	0	13		
		0	4	19		
		0	886	90		
Task Order 0858G7		48	890			
'0858H7	13-Aug-97					TRANSFORMERS SWITCHGEAR
		0	131	19		
Task Order 0858H7		0	131			
'0858I7	13-Aug-97				28-Aug-97	CLEAN/MRGGER COMP
		142	0	13		
		16	0	29		
		20	0	31		
		0	186	90		
Task Order 0858I7		178	186			
'0858K7	18-Aug-97					CHANGE OIL AND CLEAN CASE
		0	427	29		
Task Order 0858K7		0	427			
'0858P7	22-Aug-97				8-Sep-97	REPLACE PIPE FIRE SYSTEM
		28	0	25		
		21	214	33		
		24	23	61		
Task Order 0858P7		73	237			
'0858Q7	26-Aug-97					CLEAN PM 1 2 COMPRESSOR
		24	0	13		
		0	34	90		
Task Order 0858Q7		24	34			
'0860D7	14-Jul-97				29-Aug-97	DIESEL PUMPS
		33	285	29		
Task Order 0860D7		33	285			
'0860E7	14-Jul-97				29-Aug-97	REPRO EQUIPMENT
Task Order 0860E7		0	0			
'0860F7	13-Aug-97				28-Aug-97	PERFORM P.M.
		2	0	29		
Task Order 0860F7		2	0			
'0860G7	13-Aug-97				8-Sep-97	PERFORM P.M.
		23	0	13		
		4	0	19		
Task Order 0860G7		27	0			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0860H7	13-Aug-97				15-Sep-97	PERFORM P.M.
		4	0	30		
Task Order 0860H7		4	0			
'0860I7	13-Aug-97				25-Aug-97	PERFORM P.M.
		16	0	30		
Task Order 0860I7		16	0			
'0860J7	13-Aug-97				27-Aug-97	PERFORM P.M.
		4	0	30		
Task Order 0860J7		4	0			
'0860L7	13-Aug-97				25-Aug-97	PERFORM P.M.
		4	0	29		
Task Order 0860L7		4	0			
'0862J7	8-Aug-97				3-Oct-97	REROUTE PIPE UNDER BUILDING
		12	0	25		
		30	32	31		
		84	841	33		
		34	161	58		
		101	145	61		
Task Order 0862J7		261	1179			
'0862N7	12-Aug-97				15-Sep-97	REINSULATE BOXES
		154	252	25		
		40	324	35		
Task Order 0862N7		194	576			
'0862X7	26-Aug-97				5-Sep-97	REPAIR FLOOR TILE
		16	0	25		
		8	0	58		
Task Order 0862X7		24	0			
'0900B7	11-Aug-97				30-Sep-97	REPLACE BATTERIES
		146	47	19		
		8	0	31		
		149	0	73		
Task Order 0900B7		303	47			
'0900C7	11-Aug-97				30-Sep-97	WATER TREATMENT
		296	1568	30		
Task Order 0900C7		296	1568			
'0900E7	11-Aug-97				30-Sep-97	PORTABLE EQUIPTMENT
		45	0	29		
Task Order 0900E7		45	0			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0900F7	11-Aug-97				30-Sep-97	ROOF INSPECTION
		87	0	59		
Task Order 0900F7		87	0			
'0900G7	11-Aug-97				30-Sep-97	PURGE ABSORPTION MACHINES
		20	0	30		
Task Order 0900G7		20	0			
'0900H7	11-Aug-97				30-Sep-97	EMERGENCY LIGHTS
		0	880	19		
		164	676	67		
Task Order 0900H7		164	1556			
'0900I7	11-Aug-97				30-Sep-97	TELECOMMUNICATIONS
		16	0	19		
Task Order 0900I7		16	0			
'0900K7	11-Aug-97				30-Sep-97	FIRE DETECTOR/FIRE ALARM
		0	194	19		
		503	463	67		
Task Order 0900K7		503	657			
'0900L7	11-Aug-97				30-Sep-97	CERTIFY GAGES
		253	941	26		
		0	1742	33		
Task Order 0900L7		253	2683			
'0918D7	8-Sep-97					FOLLOW UP TO PM
Task Order 0918D7		0	0			
'0918E7	9-Sep-97					REBUILD VALVE
		0	1726	29		
Task Order 0918E7		0	1726			
'0918F7	9-Sep-97					REPL VALVE
		0	5785	33		
Task Order 0918F7		0	5785			
'0918G7	9-Sep-97					INSTALL CONTROL VALVE
		8	0	29		
		16	0	31		
		18	9056	33		
Task Order 0918G7		42	9056			
'0918H6	24-Oct-96				21-Nov-96	NOS FIRE HYDRANTS
		0	74	35		
		11	0	57		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
Task Order 0918H6		11	74			
'0918H7	25-Sep-97				20-Oct-97	CUT AND CUT AIR LINE
		0	156	33		
Task Order 0918H7		0	156			
'0918J7	10-Sep-97				17-Sep-97	REPAIR ROOTS BLOWER COOLERS
		28	0	22		
		16	0	25		
		105	12	29		
		51	5	33		
Task Order 0918J7		200	17			
'0918L7	11-Sep-97				30-Sep-97	REMOVE INSULATION/MOVE PANEL
		277	2042	25		
		14	0	31		
Task Order 0918L7		291	2042			
'0918N7	17-Sep-97					REPLACE BLOWER UNIT
		0	69	19		
		0	207	29		
Task Order 0918N7		0	276			
'0918O7	17-Sep-97					CHANGE OIL AND ORDER PIPE DIES
		0	1139	29		
Task Order 0918O7		0	1139			
'0918Q7	17-Sep-97					REPLACE MOTOR
		3	154	19		
		20	57	29		
Task Order 0918Q7		23	211			
'0918V7	25-Sep-97				6-Oct-97	REPR LEAK IN STEAM TRAP
		4	0	25		
		3	0	30		
		16	234	33		
Task Order 0918V7		23	234			
'0918Y7	25-Sep-97					REPLACE SHAFT SEAL ROOTS BLOWE
		24	0	29		
Task Order 0918Y7		24	0			
'0920D7	22-Sep-97					PERFORM P.M.
Task Order 0920D7		0	0			
'0920T6	2-Oct-96					REPLACE LIGHTING FIXTURES
		125	0	41		
Task Order 0920T6		125	0			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0923A7	3-Sep-97				9-Oct-97	REPAIR A/C CONTROLS
		16	1657	30		
Task Order 0923A7		16	1657			
'0923D7	9-Sep-97					INSTALL AIR HOSE
		0	798	33		
Task Order 0923D7		0	798			
'0923E7	8-Sep-97				29-Sep-97	SUBCON REMOVE DOOR/REPAIR JAMB
		0	0	35		
Task Order 0923E7		0	0			
'0923G7	5-Sep-97				9-Sep-97	SEAL PIPE ENDS POLY AB PIPE
		37	0	25		
Task Order 0923G7		37	0			
'0923I7	8-Sep-97				9-Sep-97	REPAIR BROKEN HYD LINE/CLEAN
		1	0	26		
		8	0	33		
		16	0	61		
Task Order 0923I7		25	0			
'0923N7	15-Sep-97				14-Oct-97	GENERATOR BEARING HEATING
		4	0	13		
		40	0	29		
Task Order 0923N7		44	0			
'0923O7	16-Sep-97					REPAIR TOP OF DOOR
		0	0	35		
Task Order 0923O7		0	0			
'0923P7	15-Sep-97				26-Sep-97	REPAIR VALVE P-104
		5	0	26		
		24	3796	29		
		8	0	31		
		8	0	33		
Task Order 0923P7		45	3796			
'0923V6	5-Nov-96				27-Nov-96	REM BLACK BOARDS PAINT RM 206
		2	0	35		
		32	0	57		
Task Order 0923V6		34	0			
'0924A7	24-Sep-97				25-Sep-97	BLOCK UP LASER SEEDER APPARATU
		6	0	29		
		13	0	31		
Task Order 0924A7		19	0			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0924D7	26-Sep-97				8-Oct-97	REPAIR BREAKER/POTHEAD
		69	212	13		
		27	0	19		
		8	0	22		
		0	21	33		
		0	430	90		
Task Order 0924D7		104	663			
'0924G7	30-Sep-97				15-Oct-97	MODIFY BREAKERS
		32	0	13		
		12	0	31		
Task Order 0924G7		44	0			
'0924J7	30-Sep-97					REPR BATTERY CHARGER
Task Order 0924J7		0	0			
'0926I6	3-Oct-96					MOD'S TO SUBSTATION
Task Order 0926I6		0	0			
0926O6	3-Oct-96				18-Oct-96	INSTALL 1 1/4"CONDUIT
		14	0	19		
Task Order 0926O6		14	0			
'0926P6	3-Oct-96				31-Jan-97	PERFORM PM
		20	108	30		
Task Order 0926P6		20	108			
'0930A6	1-Oct-96				2-Oct-96	REPAIR A/C LEAKS
		0	367			
		48	0	30		
Task Order 0930A6		48	367			
'0930B6	1-Oct-96				20-Nov-96	REPLACE AIR HANDLER
		0	378			
		16	52	19		
		55	0	25		
		29	39	30		
		22	0	43		
		18	0	72		
Task Order 0930B6		140	469			
'0930C7	17-Sep-97				10-Oct-97	PERFORM P.M.
		16	0	13		
Task Order 0930C7		16	0			
'0930E7	22-Sep-97					PERFORM P.M.
Task Order 0930E7		0	0			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0930F7	22-Sep-97					PERFORM P.M.
Task Order 0930F7		0	0			
'0930G7	22-Sep-97				25-Sep-97	PERFORM P.M
Task Order 0930G7		0	0			
'0930H7	22-Sep-97					PERFORM P.M.
Task Order 0930H7		0	0			
'0938A7	4-Sep-97				25-Sep-97	REPL INSUL ON LN2 VALVES
		288	1127	25		
Task Order 0938A7		288	1127			
'0938C7	4-Sep-97					CLEAN/RECHAULK BLOCK WINDOWS
Task Order 0938C7		0	0			
'0938D7	4-Sep-97					REMOVE/REPLACE ROOF
Task Order 0938D7		0	0			
'0938E7	4-Sep-97				8-Sep-97	CHECK LN2 VACUUM PIPING
		40	0	33		
Task Order 0938E7		40	0			
'0938K7	10-Sep-97					REPR FLOOR REPAIR WALL
		16	43	35		
		14	0	58		
Task Order 0938K7		30	43			
'0938S7	15-Sep-97				25-Sep-97	CRATE COMPRESSORS
Task Order 0938S7		0	0			
'0938V7	16-Sep-97				29-Sep-97	INSTALL REPLACEMENT VALVES
		16	0	22		
		16	0	25		
		16	60	33		
Task Order 0938V7		48	60			
'0938Z7	16-Sep-97				7-Oct-97	EXCESSIVE CONDENSATION
		20	0	22		
		56	132	25		
		16	0	29		
		56	1858	33		
		9	0	41		
Task Order 0938Z7		157	1990			
'0939D7	24-Sep-97				25-Sep-97	LN2 LINES INSULATE
Task Order 0939D7		0	0			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0939I7	29-Sep-97					REPAIR STEAM LEAK ON EXCHANGER
		8	0	22		
		24	225	25		
		27	0	31		
		24	35	33		
Task Order 0939I7		83	260			
'0939J7	29-Sep-97					REPLACE RUPTURE DISC
		4	0	22		
		16	0	33		
Task Order 0939J7		20	0			
'0939K7	30-Sep-97					REPL DESICCANT
		0	1179	29		
Task Order 0939K7		0	1179			
'0940C7	11-Aug-97				30-Sep-97	PHOTO EQUIPMENT
		164	0	29		
Task Order 0940C7		164	0			
'0940D7	11-Aug-97				30-Sep-97	MODIFY EQUIPMENT
		347	5429	29		
Task Order 0940D7		347	5429			
'0940F7	8-Sep-97				19-Sep-97	PERFORM P.M.
		4	0	29		
Task Order 0940F7		4	0			
'0940G7	22-Sep-97					PERFORM PM.
Task Order 0940G7		0	0			
'0940H7	22-Sep-97				25-Sep-97	PERFORM P.M.
Task Order 0940H7		0	0			
'0940I7	22-Sep-97					PERFORM P.M.
Task Order 0940I7		0	0			
'0940J7	22-Sep-97					PERFORM P.M.
Task Order 0940J7		0	0			
'0940K7	22-Sep-97					PERFORM P.M.
Task Order 0940K7		0	0			
'0941E7	9-Sep-97				22-Oct-97	REPLACE 4 EA 8FT FIXTURES
		20	622	19		
Task Order 0941E7		20	622			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0941G7	10-Sep-97					INSTALL TEMP WINDOW UNIT
		7	0	19		
		8	0	30		
		2	0	35		
		22	0	43		
		24	0	72		
Task Order 0941G7		63	0			
'0941I7	11-Sep-97					REPAIR ROOF
		56	298	59		
		4	0	61		
Task Order 0941I7		60	298			
'0942A7	19-Sep-97					CK OUT GAS HEATERS
Task Order 0942A7		0	0			
'0942B7	19-Sep-97					SUBCON CK OUT GAS HEATERS
Task Order 0942B7		0	0			
'0942C7	19-Sep-97					CK OUT GAS HEATERS
Task Order 0942C7		0	0			
'0942D7	9-Sep-97					REPL 96 CEILING TILES
		64	566	35		
Task Order 0942D7		64	566			
'0942H7	25-Sep-97					REPR HAND OPERATED VALVES
Task Order 0942H7		0	0			
'0942J7	25-Sep-97					REPLACE INSULATION
Task Order 0942J7		0	0			
'0942N7	25-Sep-97				9-Oct-97	SEAL AROUND MOTOR
		6	157	19		
		22	0	25		
Task Order 0942N7		28	157			
'0942O7	25-Sep-97				14-Oct-97	REPL COMPRESSOR
		8	38	30		
		12	0	31		
Task Order 0942O7		20	38			
'0942Q7	30-Sep-97					REFURBISH FILTER
		0	129	29		
Task Order 0942Q7		0	129			
'0942T7	29-Sep-97				8-Oct-97	INSTALL ELECT TO CONEX
		90	606	19		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		15	0	31		
Task Order 0942T7		105	606			
'0942U7	30-Sep-97					CLEAN FLOOR AND REPL TILE
		0	115	35		
Task Order 0942U7		0	115			
'0944O6	7-Oct-96				21-Nov-96	REPR MOTOR ON FAN
		0	35			
		28	0	19		
		40	0	29		
		28	0	31		
Task Order 0944O6		96	35			
'0950C7	11-Aug-97				30-Sep-97	POWER DISTRIBUTION
		192	5	13		
		0	77	19		
		0	1017	90		
Task Order 0950C7		192	1099			
'0950F7	11-Aug-97				30-Sep-97	SUBSTATION INSPECTION
		64	13	13		
Task Order 0950F7		64	13			
'0950G7	11-Aug-97				30-Sep-97	SEWAGE LIFT STATIONS
		38	0	29		
		10	0	31		
		123	451	61		
		4	0	72		
Task Order 0950G7		175	451			
'0950H7	8-Sep-97				30-Sep-97	PERFORM P.M.
		8	0	13		
Task Order 0950H7		8	0			
'0959A7	2-Sep-97					MODIFY COOLING WATER SYSTEM
		19	0	26		
		24	0	29		
		56	0	31		
		68	481	33		
Task Order 0959A7		167	481			
'0959B7	3-Sep-97				15-Sep-97	REMOVE INSULATION
		52	0	25		
Task Order 0959B7		52	0			
'0959D7	8-Sep-97					MOVE INSULATORS
		8	0	13		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		10	0	61		
Task Order 0959D7		18	0			
'0959F7	9-Sep-97				11-Sep-97	REPR OIL LEAK ON TRANSFORMER
		32	0	13		
Task Order 0959F7		32	0			
'0959G7	9-Sep-97					REPL WINDOW AC
Task Order 0959G7		0	0			
'0959H7	16-Sep-97					REPR GAS LEAK
Task Order 0959H7		0	0			
'0959J7	23-Sep-97					REPR HIGH VOL FEEDER
		151	0	13		
		4	0	29		
		8	0	35		
Task Order 0959J7		163	0			
'0959K7	25-Sep-97				26-Sep-97	CHECK CIRCUITS ON 2E CIRCUIT
		32	0	13		
Task Order 0959K7		32	0			
'0959M7	30-Sep-97					REPAIR LEAK HEAT EXCHANGER
		4	0	25		
		8	0	26		
		46	0	29		
		72	0	31		
		42	50	33		
Task Order 0959M7		172	50			
'0959N7	30-Sep-97					INSTALL WATER MANIFOLD
		0	34	33		
Task Order 0959N7		0	34			
'0960D7	11-Aug-97				30-Sep-97	DIESELS
		32	0	29		
Task Order 0960D7		32	0			
'0960E7	11-Aug-97				30-Sep-97	REPRO EQUIPMENT
Task Order 0960E7		0	0			
'0960F7	8-Sep-97				23-Sep-97	PERFORM P.M.
		8	0	30		
Task Order 0960F7		8	0			
'0960G7	8-Sep-97				18-Sep-97	PERFORM P.M.
		32	0	29		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
Task Order 0960G7		32	0			
'0960H7	22-Sep-97				26-Sep-97	PERFORM P.M.
Task Order 0960H7		0	0			
'0960I7	22-Sep-97				26-Sep-97	PERFORM P.M.
Task Order 0960I7		0	0			
'0960J7	22-Sep-97					PERFORM P.M.
Task Order 0960J7		0	0			
'0960K7	22-Sep-97					PERFORM P.M.
Task Order 0960K7		0	0			
'0962G7	11-Sep-97					REPL ELECTRICAL RECEPTACLE
Task Order 0962G7		0	0			
'0962H7	15-Sep-97					REPR 110VOLT PLUG ON FAN
Task Order 0962H7		0	0			
'0962M7	17-Sep-97					REPLACE DOOR CLOSER
Task Order 0962M7		0	0			
'0962N7	17-Sep-97					REPLACE LIGHT FIXTURE
		0	787	19		
Task Order 0962N7		0	787			
'0962W7	25-Sep-97					REMOVE WINDOW UNIT
Task Order 0962W7		0	0			
'0963B7	22-Sep-97				15-Oct-97	CHANGE OUT ELECT PANEL
		17	1015	19		
Task Order 0963B7		17	1015			
'0963F7	30-Sep-97				21-Oct-97	MOVE WATER COOLER
		0	24	33		
Task Order 0963F7		0	24			
'0990A7	16-Jul-97				26-Sep-97	SHUTDOWN
Task Order 0990A7		0	0			
'0990C7	13-Aug-97				24-Sep-97	SHUTDOWN
		8	0	19		
		4	109	29		
		8	0	30		
Task Order 0990C7		20	109			
'0990E7	26-Aug-97					SHUTDOWN

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		0	42	30		
Task Order 0990E7		0	42			
'0990H7	18-Aug-97				19-Sep-97	SHUTDOWN
		0	46	33		
Task Order 0990H7		0	46			
'1000B7	15-Sep-97					REPLACE BATTERIES
		104	129	19		
		91	0	73		
Task Order 1000B7		195	129			
'1000C7	15-Sep-97					WATER TREATMENT
		168	46	30		
Task Order 1000C7		168	46			
'1000E7	15-Sep-97					PORTABLE EQUIPMENT
		26	0	29		
Task Order 1000E7		26	0			
'1000F7	15-Sep-97					INSPECTION OF ROOF
		136	0	59		
Task Order 1000F7		136	0			
'1000G7	15-Sep-97					PURGE ABSORPTION MACH
		8	0	30		
Task Order 1000G7		8	0			
'1000H7	15-Sep-97					EMERGENCY LIGHTS
		87	0	67		
Task Order 1000H7		87	0			
'1000I7	15-Sep-97					TELECOMMUNICATIONS
Task Order 1000I7		0	0			
'1000K7	15-Sep-97					FIRE ALARM/FIRE DETECTORS
		0	123	19		
		367	75	67		
Task Order 1000K7		367	198			
'1000L7	15-Sep-97					CERTIFY GAGES
		232	6835	26		
'1						
		0	881	33		
Task Order 1000L7		232	7716			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'1001F6	16-Oct-96				14-Nov-96	FREEZE PROTECTION
		46	0	19		
		105	0	25		
		24	0	33		
Task Order 1001F6		175	0			
'1001J6	22-Oct-96				23-Apr-97	DESIGN LASER WELDER
Task Order 1001J6		0	0			
'1009R6	26-Nov-96					REPAINT BACKRIVER SUBSTATION
Task Order 1009R6		0	0			
'1009U6	26-Nov-96					REPAINT ALL AREAS
Task Order 1009U6		0	0			
'1009Y6	26-Nov-96				21-Aug-97	REPAINT EXTERIOR TRIM
		359	713	57		
Task Order 1009Y6		359	713			
'1010C6	16-Oct-96				19-Nov-96	P.M. COOLING TOWER
		24	638	29		
Task Order 1010C6		24	638			
'1010D6	16-Oct-96				20-Nov-96	P.M. BREAKER
		16	0	19		
Task Order 1010D6		16	0			
'1010F6	16-Oct-96				29-Oct-96	P.M. COOLING TOWER
		16	0	29		
Task Order 1010F6		16	0			
'1012A6	2-Oct-96				4-Oct-96	REPLACE OIL SEAL
		0	10			
		32	0	29		
Task Order 1012A6		32	10			
'1012D6	8-Oct-96				26-Nov-96	SUPPORT IN-HOUSE WITHVALVE
		22	0	31		
Task Order 1012D6		22	0			
'1012E6	8-Oct-96				19-Oct-96	MAKE REPRS TO TANKS
		0	227			
		61	0	22		
		48	0	25		
		63	9	33		
Task Order 1012E6		172	236			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'1012F6	8-Oct-96				2-Dec-96	REPLACE BROKEN TRANSFORMER
		0	3248			
		1	0	19		
		5	0	31		
Task Order 1012F6		6	3248			
'1012I6	11-Oct-96				3-Apr-97	REPAIR ROOTS BLOWER
		0	10415			
		32	0	29		
		20	0	31		
		41	0	33		
		46	0	41		
Task Order 1012I6		139	10415			
'1012J6	11-Oct-96				24-Oct-96	REPAIR 2 VACUUM PUMPS
		0	948			
		32	0	29		
Task Order 1012J6		32	948			
Task Order 1012K6		46	123			
'1012O6	16-Oct-96				22-Oct-96	REPAIR CYLINDER
		0	0			
		24	0	29		
		5	0	31		
Task Order 1012O6		29	0			
'1012Q6	21-Oct-96				10-Apr-97	ROOF LEAKS
		0	52			
		0	25	35		
		72	0	59		
Task Order 1012Q6		72	77			
'1012S6	17-Oct-96				27-Nov-96	ALIGN TUNNEL NOZZLE
		60	0	31		
		64	0	33		
Task Order 1012S6		124	0			
'1012X6	23-Oct-96				20-Nov-96	REPR AC UNIT
		0	1136			
		4	0	25		
		33	177	30		
Task Order 1012X6		37	1313			
'1013G6	30-Oct-96				1-Nov-96	REPAIR NEW FILTERS VAC PUMP
		16	0	22		
		20	0	31		
		32	24	33		
Task Order 1013G6		68	24			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'1014A6	25-Oct-96				6-Jan-97	FLUSH OUT FRAME
		0	0			
		16	0	26		
		6	0	31		
		0	23	33		
Task Order 1014A6		22	23			
'1014D6	24-Oct-96				8-Jan-97	REPLACE COIL ON AIR HANDLER
		0	1121			
		8	0	22		
		48	0	25		
		24	0	33		
Task Order 1014D6		80	1121			
'1014G6	28-Oct-96				7-Nov-96	REPR PRECIPITRON POWER SUPPLY
		0	2195			
		32	0	19		
Task Order 1014G6		32	2195			
'1019A7	30-Sep-97					REPL HYDRAULIC RAM
		16	0	29		
		8	0	31		
Task Order 1019A7		24	0			
'1020C6	16-Oct-96				23-Oct-96	P.M. AIR HANDLER
		24	41	30		
Task Order 1020C6		24	41			
'1020D6	16-Oct-96				28-Oct-96	PERFORM P.M.
		16	67	30		
Task Order 1020D6		16	67			
'1022A6	1-Oct-96				15-Oct-96	REPAIR LEAK/CLEAN UP HYD SPILL
		0	585			
		20	0	31		
		1	0	33		
		0	3	35		
		30	0	61		
Task Order 1022A6		51	588			
'1022D6	11-Oct-96				14-Nov-96	REMOVE OIL FRM RESERVOIR
		44	2573	29		
Task Order 1022D6		44	2573			
'1022E6	11-Oct-96				30-Dec-96	REPL BRUSHES
		64	0	19		
		16	0	29		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
Task Order 1022E6		80	0			
'1022G6	11-Oct-96				22-Jul-97	REPL SPRAY NOZZLE
		0	347			
		48	192	19		
Task Order 1022G6		48	539			
'1022H6	11-Oct-96				12-Feb-97	CUT CURB
		0	179			
		14	0	58		
		10	0	61		
Task Order 1022H6		24	179			
'1022I6	10-Oct-96				31-Dec-96	REPAIR ACTUATOR/SEATS ON VAC
		48	0	29		
		20	0	31		
Task Order 1022I6		68	0			
'1022J6	16-Oct-96				7-Feb-97	SUPPORT INSTALLING PUMP
		0	21481			
		181	17	29		
		94	0	31		
Task Order 1022J6		275	21498			
'1022K6	18-Oct-96				15-Nov-96	DISCONNECT AND MOVE EQUIPMENT
		0	0			
		44	0	19		
		61	0	31		
Task Order 1022K6		105	0			
'1022L6	18-Oct-96				5-Dec-96	REPAIR VOLTAGE BREAKER
		0	302			
		24	14	19		
		0	0	29		
Task Order 1022L6		24	316			
'1022N6	13-Nov-96				31-Dec-96	INST ANT SLIP PADS
		0	115	35		
		32	0	57		
Task Order 1022N6		32	115			
'1022O6	21-Oct-96				22-Jan-97	REWORK ROOF DRAIN
		0	44			
		0	0	31		
		28	0	59		
Task Order 1022O6		28	44			
'1022R6	31-Oct-96				4-Nov-96	INSPECT BEARINGS ON MOTOR

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		0	60			
		32	15	19		
		40	0	29		
		46	0	31		
Task Order 1022R6		118	75			
'1030D6	2-Oct-96				8-Oct-96	WELD RIBS 0N
		20	0	22		
		0	16	33		
Task Order 1030D6		20	16			
'1030E6	16-Oct-96				30-Oct-96	P.M. BATTERY
		1	0	19		
Task Order 1030E6		1	0			
'1032A6	2-Oct-96				15-Oct-96	REPAIR LEAK HEAT EXCHANGER
		0	808			
		11	0	19		
		14	0	22		
		8	0	25		
		2	0	26		
		103	1423	29		
		57	898	33		
		16	0	71		
Task Order 1032A6		211	3129			
'1032C6	3-Oct-96				4-Oct-96	REPAIR DOOR LOCK
Task Order 1032C6		0	0			
'1032D6	3-Oct-96				7-Oct-96	R/R INSULATION ON 8FT W/LINE
		40	0	25		
		25	0	61		
Task Order 1032D6		65	0			
'1032H6	7-Oct-96				16-Oct-96	INST WINCH SUPPORT
		24	0	22		
		0	15	33		
		3	0	57		
Task Order 1032H6		27	15			
'1032I6	7-Oct-96				18-Feb-97	INSTALL STAGING
		0	575			
		21	0	22		
		0	13	35		
		311	0	61		
Task Order 1032I6		332	588			
'1032K6	9-Oct-96				30-Oct-96	REPAIR WINDOWS AS NEEDED

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
Task Order 1032K6		0	0			
'1032O6	15-Oct-96				14-Feb-97	CHAULK WINDOWS/SEAL ROOM
		32	0	59		
Task Order 1032O6		32	0			
'1032S6	17-Oct-96				11-Dec-96	REPR FLOOD LIGHTS
		0	109			
		40	466	19		
Task Order 1032S6		40	575			
'1032W6	22-Oct-96				16-Dec-96	INSTALL RIDGE
		0	902			
		8	0	57		
		51	0	58		
Task Order 1032W6		59	902			
'1033C6	5-Nov-96				7-Feb-97	REMOVE/REFURBISH INSTALL BLADE
		0	3981			
		41	0	22		
		106	0	29		
		312	0	31		
		219	780	35		
		4	0	57		
		151	0	61		
		8	0	71		
Task Order 1033C6		841	4761			
'1033H6	1-Nov-96				3-Dec-96	REPR FAN COIL
		0	309			
		16	0	30		
		20	0	61		
Task Order 1033H6		36	309			
'1040C7	15-Sep-97					PHOTO EQUIPMENT
		56	0	29		
Task Order 1040C7		56	0			
'1040D7	15-Sep-97					MODIFY EQUIPMENT
		208	1642	29		
Task Order 1040D7		208	1642			
'1040F6	16-Oct-96				29-Nov-96	P.M. AIR HANDLER
		14	912	30		
Task Order 1040F6		14	912			
'1040I6	16-Oct-96				30-Oct-96	P.M. SAW
		12	0	29		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
Task Order 104016		12	0			
'1042D6	10-Oct-96				18-Oct-96	REPAIR SHAFT IN WATER PUMP
		0	22			
		24	83	29		
Task Order 1042D6		24	105			
'1042E6	10-Oct-96				28-Oct-96	HOT PATCH ROOF
Task Order 1042E6		0	0			
'1042K6	21-Oct-96				19-Nov-96	REPR INSULATION
		20	0	25		
Task Order 1042K6		20	0			
'1042P6	21-Oct-96				12-Nov-96	REPLACE 2 VALVES
		0	272			
		16	0	25		
		24	0	33		
Task Order 1042P6		40	272			
'1042Q6	22-Oct-96				7-Nov-96	REPLACE CRACK CHECK VALVE
		0	1004			
		8	0	22		
		16	0	25		
		9	0	31		
		12	0	33		
Task Order 1042Q6		45	1004			
'1042V6	25-Oct-96				22-Aug-97	REPL LEAKING ROOF
		172	0	41		
Task Order 1042V6		172	0			
'1042W6	24-Oct-96				29-Oct-96	REBUILD AIR COMPRESSOR
		20	0	29		
Task Order 1042W6		20	0			
'1043C6	28-Oct-96				27-Jun-97	HOT PATCH ROOF
		0	173	35		
		155	0	59		
Task Order 1043C6		155	173			
'1043E6	30-Oct-96				24-Jun-97	PRESSURE WASH RUBBER ROOF
		0	1290			
		206	0	25		
		0	19	30		
		28	327	43		
		79	0	59		
		8	0	61		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		19	0	72		
Task Order 1043E6		340	1636			
'1043F6	31-Oct-96				26-Nov-96	INSTALL HANGERS
		0	92			
		24	97	33		
Task Order 1043F6		24	189			
'1043G6	31-Oct-96				20-Nov-96	REPR AC CONTROLS
		0	1639			
		22	0	30		
Task Order 1043G6		22	1639			
'1050C7	15-Sep-97					POWER DISTRIBUTION
		184	0	13		
		0	137	90		
Task Order 1050C7		184	137			
'1050E7	15-Sep-97					MONTHLY METER READINGS
Task Order 1050E7		0	0			
'1050F7	15-Sep-97					SUB STATION INSPECTION
		94	8	13		
Task Order 1050F7		94	8			
'1050G7	15-Sep-97					SEWAGE LIFT STATIONS
		16	0	29		
		65	0	61		
Task Order 1050G7		81	0			
'1052B6	17-Oct-96				21-Oct-96	PM
		24	0	19		
		4	0	22		
Task Order 1052B6		28	0			
'1052C6	21-Oct-96				11-Mar-97	RELAMP ST LAMPS
		0	571			
		140	0	13		
		10	39	19		
Task Order 1052C6		150	610			
'1052D6	22-Oct-96				25-Mar-97	REPL SIX BUSHING
		0	9907			
		157	0	13		
		77	0	31		
Task Order 1052D6		234	9907			
'1052E6	22-Oct-96				14-Jan-97	REPAIR HEAT EXCHANGER(RE-TUBE)

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		0	3317			
		6	0	26		
		72	89	29		
		23	0	31		
Task Order 1052E6		101	3406			
'1052F6	25-Oct-96				11-Dec-96	REMOVE FAN MOTOR
		0	207			
		16	0	19		
		8	0	22		
		48	0	25		
		128	0	29		
		38	0	31		
Task Order 1052F6		238	207			
'1052H6	31-Oct-96				6-Nov-96	MOVE CHEMICALS
		15	0	31		
Task Order 1052H6		15	0			
'1060D7	15-Sep-97					DIESEL PUMPS
		20	0	29		
Task Order 1060D7		20	0			
'1060E7	15-Sep-97					REPRO EQUIPMENT
		8	0	29		
Task Order 1060E7		8	0			
'1060F6	16-Oct-96				21-Oct-96	P.M. ENVIRONMENTAL UNIT
		12	0	30		
Task Order 1060F6		12	0			
'1062A6	2-Oct-96				21-Oct-96	REPLACE TOP DOOR CLOSURE
		0	0			
Task Order 1062A6		0	0			
'1062C6	3-Oct-96				8-Aug-97	REPLACE OLD A/C INIT
Task Order 1062C6		0	0			
'1062D6	26-Sep-97					INSTALL FIRE ALARM BELL/STROBE
Task Order 1062D6		0	0			
'1062J6	11-Oct-96				8-Nov-96	RESTORE STEAM SERVICE
		0	986			
		40	0	22		
		96	0	25		
		1	0	26		
		15	0	31		
		95	1899	33		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		14	0	43		
		8	0	61		
Task Order 1062J6		269	2885			
'1062S6	21-Oct-96				12-Nov-96	INSULATE WATER LINE
		0	66			
		17	0	25		
Task Order 1062S6		17	66			
'1062U6	18-Oct-96				17-Dec-96	REPR LEAKS CK SYSTEM
		20	0	25		
		32	0	30		
Task Order 1062U6		52	0			
'1062W6	21-Oct-96				4-Nov-96	REPAIR METAL SHEARS
		23	0	29		
Task Order 1062W6		23	0			
'1062Y6	23-Oct-96				31-Mar-97	ROOF REPAIRS
		0	199	35		
		108	0	59		
Task Order 1062Y6		108	199			
'1063A6	24-Oct-96				6-Jan-97	REPRS TO OUTSIDE WALL
		0	0	57		
		30	0	59		
		0	0	61		
Task Order 1063A6		30	0			
'1063C6	28-Oct-96				20-Dec-96	REPL WINDOW UNIT
		24	1385	30		
		12	22	35		
		2	0	57		
Task Order 1063C6		38	1407			
'1063F6	31-Oct-96				5-Dec-96	INSTALL STARTER
		0	232			
		78	180	29		
Task Order 1063F6		78	412			
'1090A7	29-Jul-97				12-Sep-97	SHUTDOWN
		4	0	29		
		15	25	30		
Task Order 1090A7		19	25			
'1090C7	30-Jul-97				14-Oct-97	SHUTDOWN
		1	0	19		
		4	0	29		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		72	564	30		
Task Order 1090C7		77	564			
'1090F7	25-Sep-97				24-Oct-97	SHUTDOWN
Task Order 1090F7		0	0			
'1090G7	26-Sep-97					SHUTDOWN
		122	1909	30		
		32	63	33		
Task Order 1090G7		154	1972			
'1090H7	8-Sep-97				24-Sep-97	SHUTDOWN
		32	0	30		
Task Order 1090H7		32	0			
'1090K7	19-Sep-97					SHUTDOWN
Task Order 1090K7		0	0			
'1090M7	17-Sep-97				14-Oct-97	SHUTDOWN
Task Order 1090M7		0	0			
'1090N7	25-Sep-97					SHUTDOWN
		0	363	30		
Task Order 1090N7		0	363			
'1090O7	10-Sep-97				7-Oct-97	PERFORM P.M
Task Order 1090O7		0	0			
'1090Q7	17-Sep-97					SHUTDOWN
Task Order 1090Q7		0	0			
'1090R7	10-Sep-97				26-Sep-97	PERFORM P.M.
		32	317	30		
Task Order 1090R7		32	317			
'1090S7	17-Sep-97					SHUTDOWN
Task Order 1090S7		0	0			
'1100B6	21-Oct-96				30-Nov-96	MAINTAIN BATTERIED
		0	17			
		265	15	19		
Task Order 1100B6		265	32			
'1100C6	21-Oct-96				30-Nov-96	WATER TREATMENT
		262	0	30		
Task Order 1100C6		262	0			
'1100E6	21-Oct-96				30-Nov-96	PORTABLE EQUIPT

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		0	101			
		39	0	29		
		32	0	71		
Task Order 1100E6		71	101			
'1100F6	21-Oct-96				30-Nov-96	ROOF INSPECTION
Task Order 1100F6		0	0			
'1100G6	21-Oct-96				30-Nov-96	ABSORPTION MACHINES
		33	0	30		
		0	0	61		
Task Order 1100G6		33	0			
'1100H6	21-Oct-96				30-Nov-96	EMERG LIGHTS
		0	504	19		
		141	0	67		
Task Order 1100H6		141	504			
'1100K6	21-Oct-96				30-Nov-96	FIRE ALARM FIRE DETECTOR
		0	358			
		8	0	19		
		490	0	67		
Task Order 1100K6		498	358			
'1101A6	13-Nov-96				24-Mar-97	DOMESTIC WATER SYSTEMS
		0	238			
		0	9	19		
		0	5	29		
		0	41	30		
		590	3	33		
Task Order 1101A6		590	296			
'1101C6	3-Dec-96				12-Dec-96	PM HYDRANTS
		60	0	67		
Task Order 1101C6		60	0			
'1101E6	14-Nov-96				25-Nov-96	PERFORM P.M.
Task Order 1101E6		0	0			
'1110B6	21-Oct-96				30-Nov-96	CERTIFY GAGES
		0	227			
		45	0	26		
Task Order 1110B6		45	227			
'1110C6	13-Nov-96				10-Nov-96	PERFORM P.M.
		1	0	19		
Task Order 1110C6		1	0			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'1110D6	13-Nov-96				19-Dec-96	PERFORM P.M.
		4	2	30		
Task Order 1110D6		4	2			
'1110H6	14-Nov-96				25-Nov-96	PERFORM P.M.
		4	0	30		
Task Order 1110H6		4	0			
'1112B6	25-Apr-97					REPAIR FACILITY SIDING
		4	0	35		
		73	553	57		
		4	0	61		
Task Order 1112B6		81	553			
'1112D6	13-Nov-96				2-Dec-96	REPAIR PIPING TO AVOID DAMAGE
		0	165			
		8	0	22		
		44	0	25		
		16	0	31		
		16	81	33		
Task Order 1112D6		84	246			
'1112E6	22-Nov-96				6-Dec-96	REPAIR TRANSFORMER
		0	1843			
		102	4	19		
Task Order 1112E6		102	1847			
'1113A6	8-Nov-96				26-Nov-96	SUPPORT IN-HOUSE
		148	0	31		
Task Order 1113A6		148	0			
'1113C6	7-Nov-96				20-Nov-96	REPAIR WATER BREAK OUTSIDE BLD
		0	1			
		44	0	33		
		2	14	35		
		8	0	58		
		21	0	61		
Task Order 1113C6		75	15			
1113K6	15-Nov-96				29-Nov-96	REPLACE INSULATION AIR LINE
		0	512			
		122	0	25		
Task Order 1113K6		122	512			
'1113P6	22-Nov-96				13-Dec-96	REPLACE CONDENSER ON ROOF
		0	1294			
		28	0	25		
		60	249	30		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		12	0	31		
Task Order 1113P6		100	1543			
'1113R6	25-Nov-96				23-Jan-97	REPL LIGHTS
		97	0	13		
Task Order 1113R6		97	0			
'1113T6	26-Nov-96				5-Dec-96	REPAIR HOT WATER PUMP
		0	80			
		32	26	29		
		5	18	33		
Task Order 1113T6		37	124			
'1113U6	2-Dec-96				31-Dec-96	REPAIR MAIN WATER BREAK
		0	805			
		6	0	19		
		8	0	31		
		36	71	33		
		0	0	57		
		14	0	58		
		0	0	59		
		77	0	61		
Task Order 1113U6		141	876			
'1113V6	3-Dec-96				13-Dec-96	REPR OIL LEAKS
		116	0	19		
		0	6	33		
Task Order 1113V6		116	6			
'1120B6	21-Oct-96				30-Nov-96	CERTIFY GAGES
		0	227			
		48	0	26		
Task Order 1120B6		48	227			
'1120C6	13-Nov-96				2-Dec-96	PERFORM P.M.
		2	0	29		
Task Order 1120C6		2	0			
'1120E6	15-Nov-96				29-Jan-97	PERFORM P.M.
		30	0	30		
Task Order 1120E6		30	0			
'1122A6	5-Nov-96				19-Nov-96	REPAIR LEAKING COND.STEAM LINE
		0	68	19		
		48	0	25		
		32	78	33		
		20	0	61		
Task Order 1122A6		100	146			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'1122C6	7-Nov-96				6-Jun-97	REPL SCREEN ROFF VENT
		0	535			
		76	0	25		
		4	186	30		
		18	0	31		
		57	0	43		
		24	0	61		
		35	0	72		
Task Order 1122C6		214	721			
'1122E6	7-Nov-96				13-Nov-96	REPAIR RUSTED OUT PIPE
		16	0	33		
		3	0	58		
Task Order 1122E6		19	0			
'1122F6	8-Nov-96				11-Jun-97	REPAIR CEILING BEAM
		32	0	22		
		0	39	30		
		39	0	43		
		4	0	57		
		75	0	61		
Task Order 1122F6		150	39			
'1122G6	14-Nov-96				6-Dec-96	BLOCKAGE IN LINE ON COND.PUMP
		0	36			
		30	0	25		
		16	0	29		
		19	0	33		
Task Order 1122G6		65	36			
'1122K6	20-Nov-96				26-Nov-96	CLEAN UP ASBESTOS HALLWAY
		29	76	25		
		19	0	61		
Task Order 1122K6		48	76			
'1130B6	21-Oct-96				30-Nov-96	CERTIFY GAGES
		0	227			
		38	0	26		
Task Order 1130B6		38	227			
'1130E6	15-Nov-96				23-Dec-96	PERFORM P.M.
		8	0	19		
		12	0	30		
Task Order 1130E6		20	0			
'1130F6	15-Nov-96				15-Apr-97	PERFORM P.M.
		16	0	30		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
Task Order 1130F6		16	0			
'1132E6	7-Nov-96				8-Nov-96	REPR ABSORBER
		0	183			
		23	0	30		
Task Order 1132E6		23	183			
'1132E6	13-Nov-96					REPR ABSORBER
		0	183			
		23	0	30		
Task Order 1132E6		23	183			
'1134C6	6-Nov-96				8-Nov-96	MOVE 2 EA A/C UNITS 195 TO 193
		8	83	30		
		15	0	31		
Task Order 1134C6		23	83			
'1134D6	7-Nov-96				18-Nov-96	LINE RUSTED OUT
		15	0	25		
		16	0	33		
		13	0	61		
Task Order 1134D6		44	0			
'1134N6	13-Nov-96				19-Feb-97	AC NOT COOLING
		8	0	25		
		40	146	30		
Task Order 1134N6		48	146			
'1134P6	19-Nov-96				27-Dec-96	REPL INSULATION
		0	200			
		66	0	25		
		0	22	35		
Task Order 1134P6		66	222			
'1134Q6	19-Nov-96				6-Aug-97	REPL RETURN AIR FAN
		0	1551			
		80	0	30		
		63	0	31		
		32	13	35		
		0	0	57		
		15	0	61		
Task Order 1134Q6		190	1564			
Task Order 1134R6		22	33			
'1134S6	15-Nov-96				9-Dec-96	REPL CONTROL CUBICLE
		0	779			
		21	67	19		
		12	0	30		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
Task Order 1134S6		33	846			
'1134V6	20-Nov-96				5-Dec-96	REPLACE HYD SEAL STAND
		0	792			
		64	74	29		
Task Order 1134V6		64	866			
'1134X6	25-Nov-96				17-Dec-96	REBUILD VALVE
		0	1671			
		2	0	26		
		16	0	29		
Task Order 1134X6		18	1671			
'1134Y6	25-Nov-96				25-Feb-97	REPLACE SUPPLY FAN
		0	19			
		22	0	30		
Task Order 1134Y6		22	19			
'1134Z6	25-Nov-96				27-Feb-97	REPL FAN MOTOR
		0	303			
		112	1042	30		
Task Order 1134Z6		112	1345			
'1135B6	2-Dec-96				27-Feb-97	PREPARE CONTROL SYSTEM
		44	0	30		
Task Order 1135B6		44	0			
'1140B6	21-Oct-96				30-Nov-96	CERTIFY GAGES
		0	227			
		38	0	26		
Task Order 1140B6		38	227			
'1140C6	22-Oct-96				30-Nov-96	PHOTO EQUIPT
		166	0	29		
Task Order 1140C6		166	0			
'1140D6	21-Oct-96				30-Nov-96	MODIFY EQUIPT
		0	403			
		401	967	29		
Task Order 1140D6		401	1370			
'1140E6	13-Nov-96				29-Nov-96	PERFORM P.M.
		4	36	30		
Task Order 1140E6		4	36			
'1140G6	15-Nov-96				17-Apr-97	PERFORM P.M.
		16	0	30		
Task Order 1140G6		16	0			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'1140H6	15-Nov-96				31-Jan-97	PERFORM P.M.
		8	0	30		
Task Order 1140H6		8	0			
'1140I6	15-Nov-96				17-Mar-97	PERFORM P.M.
		0	2722			
		16	0	25		
		32	27	30		
Task Order 1140I6		48	2749			
'1140J6	15-Nov-96				27-Dec-96	PERFORM P.M.
		16	0	30		
Task Order 1140J6		16	0			
'1142B6	6-Nov-96				29-Jan-97	CLEAN PIT
		26	0	61		
Task Order 1142B6		26	0			
'1142O6	18-Nov-96				14-Aug-97	REPL AC UNIT
Task Order 1142O6		0	0			
'1142S6	19-Nov-96				21-Nov-96	REPAIR/REPLACE S/STATION BREAK
		28	0	19		
		4	0	30		
Task Order 1142S6		32	0			
'1142T6	2-Dec-96				22-Jan-97	REPL ROLL UP DOOR
		0	0			
Task Order 1142T6		0	0			
'1143B6	25-Nov-96				21-Apr-97	AIR SWITCHES
		0	0			
		32	0	13		
		64	0	19		
Task Order 1143B6		96	0			
'1143C6	25-Nov-96					REPR AIR SWITCHES
		32	0	13		
		2	0	31		
Task Order 1143C6		34	0			
'1143D6	25-Nov-96				9-Jan-97	REPL COMPRESSOR
		0	504			
		40	2	30		
Task Order 1143D6		40	506			
'1143K6	29-Nov-96				2-Dec-96	HOOK UP UPS SYSTEM

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		24	249	19		
Task Order 1143K6		24	249			
'1150B6	21-Oct-96				30-Nov-96	CERTIFY GAGES
		0	227			
		43	0	26		
Task Order 1150B6		43	227			
'1150C6	22-Oct-96				30-Nov-96	POWER MAINTENANCE
		20	0	19		
Task Order 1150C6		20	0			
'1150D6	21-Oct-96				30-Nov-96	ENERGY MONITOR
		0	192	30		
		513	0	64		
Task Order 1150D6		513	192			
'1150F6	22-Oct-96				30-Nov-96	SUB STATION INSPECT
		72	43	19		
Task Order 1150F6		72	43			
'1150G6	21-Oct-96				30-Nov-96	SEWAGE LIFT STATIONS
		36	0	29		
		99	0	61		
		24	0	71		
Task Order 1150G6		159	0			
'1153B6	5-Nov-96				15-Nov-96	REPAIR STORM DRAIN PIPES
		40	0	33		
		0	7	35		
		2	0	58		
		2	0	61		
Task Order 1153B6		44	7			
'1153D6	8-Nov-96				19-Nov-96	OVERHAUL VACUUM PUMP
		0	54			
		34	0	29		
		10	0	31		
Task Order 1153D6		44	54			
'1153E6	13-Nov-96				14-Nov-96	MAIN WATER LINE BREAK
		0	272			
		19	0	33		
Task Order 1153E6		19	272			
'1153F6	19-Nov-96				17-Dec-96	REPR PIPE CLAMPS
		0	53			
		7	0	22		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		16	7	33		
		3	0	57		
Task Order 1153F6		26	60			
'1153G6	18-Nov-96				20-Nov-96	REMOVE ASBESTOS FROM CABLE
		4	0	19		
		16	0	25		
Task Order 1153G6		20	0			
'1153I6	21-Nov-96				13-Jan-97	REMOVE ASBESTOS 2-H CABLE
		17	0	19		
		72	259	25		
Task Order 1153I6		89	259			
'1153J6	22-Nov-96				25-Nov-96	REPR SEWAGE LEAK
		8	0	22		
		16	0	33		
Task Order 1153J6		24	0			
'1160B6	21-Oct-96				30-Nov-96	CERTIFY GAGES
		0	227			
		40	0	26		
Task Order 1160B6		40	227			
'1160C6	22-Oct-96				1-Nov-96	PHOTO EQUIPT
Task Order 1160C6		0	0			
'1160D6	21-Oct-96				30-Nov-96	DIESELS
		0	275			
		34	0	29		
		16	0	71		
Task Order 1160D6		50	275			
'1160F6	13-Nov-96				19-Nov-96	PERFORM P.M.
		2	0	29		
Task Order 1160F6		2	0			
'1160G6	15-Nov-96				25-Feb-97	PERFORM P.M.
		0	306			
		24	20	30		
Task Order 1160G6		24	326			
'1160H6	15-Nov-96				22-Nov-96	PERFORM PM
Task Order 1160H6		0	0			
'1160I6	15-Nov-96				13-Mar-97	PERFORM P.M.
Task Order 1160I6		0	0			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'1162K6	12-Nov-96					COST RENOVATE AREA
		255	0	41		
Task Order 1162K6		255	0			
'1162N6	7-Nov-96				7-Jan-97	REPL COMPRESSOR
		0	19			
		89	301	30		
		12	0	31		
Task Order 1162N6		101	320			
'1162T6	19-Nov-96				15-Jan-97	REPAIR FLOOR AT ENTRANCE
		0	64			
		8	48	35		
		44	0	59		
Task Order 1162T6		52	112			
'1163E6	22-Nov-96				18-Feb-97	REPLACE HUMIDIFIER
		0	2777			
		2	0	25		
		54	69	30		
Task Order 1163E6		56	2846			
'1163F6	22-Nov-96				6-Dec-96	REPAIR SAGGING FLOOR T-3
		0	148			
		8	0	19		
		8	0	25		
		53	19	35		
Task Order 1163F6		69	167			
'1163Q6	26-Nov-96				26-Dec-96	INSTALL VENT LINES
		32	289	33		
		0	0	57		
		3	0	58		
		4	0	67		
Task Order 1163Q6		39	289			
'1163R6	26-Nov-96				18-Feb-97	REPR OR REPL DOORS
		0	720			
		48	152	19		
		4	0	30		
		124	53	35		
		8	0	57		
		4	0	59		
Task Order 1163R6		188	925			
'1191A6	17-Oct-96				5-Dec-96	SHUTDOWN
		0	411			
		48	0	19		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		15	0	26		
		82	1557	29		
		50	13	30		
		18	0	33		
		16	0	71		
Task Order 1191A6		229	1981			
'1191B6	28-Oct-96				2-Dec-96	SHUTDOWN
Task Order 1191B6		0	0			
'1191C6	16-Oct-96				29-Jan-97	SHUTDOWN
Task Order 1191C6		0	0			
'1191D6	14-Nov-96				6-Dec-96	SHUTDOWN
		0	795			
Task Order 1191D6		0	795			
'1191H6	10-Oct-96				26-Nov-96	SHUTDOWN
Task Order 1191H6		0	0			
'1191I6	11-Oct-96				14-Nov-96	SHUTDOWN
		0	39	29		
Task Order 1191I6		0	39			
'1191K6	3-Oct-96				13-Dec-96	SHUTDOWN 11-9 THRU 12-13-96
		22	0	29		
		80	94	30		
Task Order 1191K6		102	94			
'1191L6	28-Oct-96				21-Nov-96	SHUTDOWN
		0	506			
		2	0	19		
		16	4	29		
		92	194	30		
Task Order 1191L6		110	704			
'1193G6	3-Oct-96				27-Jan-97	SHUTDOWN 11-9 THRU 12-13-96
		0	931			
		1	0	19		
		34	0	29		
		78	259	30		
Task Order 1193G6		113	1190			
'1194J6	3-Oct-96				21-Oct-96	SHUTDOWN 11-4 THRU 11-8-96
		0	176			
		40	238	30		
Task Order 1194J6		40	414			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'1194M6	3-Oct-96				25-Nov-96	SHUTDOWN 11-25 THRU 11-29-96
		1	4	30		
Task Order 1194M6		1	4			
'1196E6	3-Oct-96				23-Oct-96	SHUTDOWN 11-4 THRU 11-8-96
		32	0	30		
Task Order 1196E6		32	0			
'1196F6	3-Oct-96				11-Dec-96	SHUTDOWN 11-9 THRU 12-13-96
		16	0	30		
Task Order 1196F6		16	0			
'1200B6	19-Nov-96				31-Dec-96	REPL OR MAINTAIN BATTERIES
		0	413			
		262	87	19		
		24	0	73		
Task Order 1200B6		286	500			
'1200C6	19-Nov-96				31-Dec-96	WATER TREATMENT
		0	405			
		351	0	30		
Task Order 1200C6		351	405			
'1200E6	19-Nov-96				31-Dec-96	PORTABLE EQUIPMENT
		154	0	29		
		24	0	71		
Task Order 1200E6		178	0			
'1200F6	19-Nov-96				31-Dec-96	ROOF INSPECTION
Task Order 1200F6		0	0			
'1200H6	19-Nov-96				31-Dec-96	EMERGENCY LIGHTS
		135	0	67		
Task Order 1200H6		135	0			
'1200K6	19-Nov-96				31-Dec-96	FIRE ALARM FIRE DETECTOR
		0	314			
		16	57	19		
		523	0	67		
Task Order 1200K6		539	371			
'1200L6	25-Nov-96				31-Dec-96	CERTIFY GAGES
		227	0	26		
		0	966	33		
Task Order 1200L6		227	966			
'1201B6	3-Dec-96				19-Dec-96	CHANGE TRANSFORMER
		18	126	19		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
Task Order 1201B6		18	126			
'1201D6	9-Dec-96				17-Jun-97	BACKFLO PREVENTERS
		200	4177	33		
Task Order 1201D6		200	4177			
'1209E6	10-Jan-97					REPL AC SYSTEM ABOVE SHOP
		305	0	41		
Task Order 1209E6		305	0			
'1210B6	19-Nov-96				25-Nov-96	CERTIFY GAGES
Task Order 1210B6		0	0			
'1210C6	9-Dec-96				16-Dec-96	PERFORM P.M.
		30	0	19		
Task Order 1210C6		30	0			
'1210E6	10-Dec-96				11-Dec-96	PERFORM P.M.
Task Order 1210E6		0	0			
'1212A6	2-Dec-96				4-Dec-96	REMOVE OLD PIPE/REINSULATE
		0	85			
		58	0	25		
		12	70	33		
Task Order 1212A6		70	155			
'1212B6	6-Dec-96				30-Jan-97	REPAIR STOKES VAC PUMP
		0	2756			
		134	87	29		
		39	0	31		
		32	28	33		
		0	7	35		
		14	0	58		
Task Order 1212B6		219	2878			
'1212C6	10-Dec-96				4-Mar-97	REPLACE DEFECTIVE TRAPS
		0	1675			
		24	0	25		
		52	188	33		
		0	2	35		
		52	0	61		
Task Order 1212C6		128	1865			
'1212D6	11-Dec-96				22-Jan-97	LEAKING ROOF
		0	212			
		0	339	35		
		56	0	59		
		4	0	61		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
Task Order 1212D6		60	551			
'1212G6	12-Dec-96				10-Jan-97	COVER HOLES IN WALL
Task Order 1212G6		0	0			
'1212J6	19-Dec-96				6-Jan-97	REPR INSULATION
		0	75			
		32	0	25		
Task Order 1212J6		32	75			
'1212M6	11-Jul-97				13-Aug-97	REBUILD BOTTLES
		108	16	29		
Task Order 1212M6		108	16			
'1212O6	17-Dec-96				3-Feb-97	REPR WIRING ON LIGHTS
		32	541	19		
Task Order 1212O6		32	541			
'1212Q6	27-Dec-96				31-Dec-96	REMOVE RELIEF VALVE
		0	22	19		
		3	0	26		
		30	0	31		
		12	0	33		
Task Order 1212Q6		45	22			
'1212T6	31-Dec-96				9-Jan-97	TRANSFORMER LEAKING
		33	22	19		
Task Order 1212T6		33	22			
'1212V6	8-Jan-97				10-Jan-97	REPL /REMOVE INSULATION
		36	0	25		
Task Order 1212V6		36	0			
'1212Y6	10-Jan-97				23-Jan-97	REPL AC CONTROLS
		0	1876			
		16	4	30		
Task Order 1212Y6		16	1880			
'1213B6	4-Dec-96				9-Jan-97	REMOVE INSUL AND REINSTALL
		0	502			
		120	0	25		
		21	0	31		
Task Order 1213B6		141	502			
'1213C6	5-Dec-96				19-Feb-97	CLEAN STRAINERS/REMOVE TRAPS
		0	474			
		50	0	25		
		4	0	26		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		24	9	33		
Task Order 1213C6		78	483			
'1213G6	17-Dec-96				24-Dec-96	CHANGE FILTERS 2 VAC PUMPS
		0	0	22		
		6	0	31		
		16	121	33		
Task Order 1213G6		22	121			
'1220B6	19-Nov-96				25-Nov-96	CERTIFY GAGES
Task Order 1220B6		0	0			
'1220C6	11-Dec-96				2-Jan-97	PERFORM P.M.
		151	0	19		
Task Order 1220C6		151	0			
'1222A6	2-Dec-96				2-Dec-96	CLEAN UP OIL SPILL
		10	0	31		
		0	35	35		
		12	0	61		
Task Order 1222A6		22	35			
'1222B6	3-Dec-96				25-Mar-97	REPLACE ASBESTOS FLOOR TILE
		0	323			
		48	0	25		
		37	0	35		
Task Order 1222B6		85	323			
'1222C6	3-Dec-96					REPLACE GASKETS ON VACUUM PUMP
		0	4165			
		122	0	29		
		28	0	31		
		17	0	58		
Task Order 1222C6		167	4165			
'1222D6	3-Dec-96				30-Dec-96	INSTALL CONDUIT TO NACELLE
		48	116	19		
Task Order 1222D6		48	116			
'1222E6	4-Dec-96				30-Dec-96	INPUT LIST PARTS
		16	0	29		
		4	0	30		
		6	0	31		
Task Order 1222E6		26	0			
'1222F6	6-Dec-96				21-Jul-97	REPAIR MODEL CART TURNTABLE
		228	0	31		
Task Order 1222F6		228	0			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'1222G6	9-Dec-96				13-Jan-97	REPAIR TO ARC SECTOR
		131	0	31		
		24	0	61		
Task Order 1222G6		155	0			
'1222H6	10-Dec-96				4-Feb-97	OVERHAUL SEAL AIR PUMP
		0	0			
		4	0	19		
		91	0	29		
Task Order 1222H6		95	0			
'1222I6	11-Dec-96				21-Jul-97	REAPIR COUPLING MOD CART
Task Order 1222I6		0	0			
'1222K6	12-Dec-96				18-Dec-96	CLEAN HYD OIL SPILL
		0	116	35		
		24	0	61		
Task Order 1222K6		24	116			
'1222N6	18-Dec-96				7-Feb-97	INSTALL FLOOD LIGHTS
		0	517			
		40	73	19		
Task Order 1222N6		40	590			
'1222O6	18-Dec-96				24-Jan-97	CLEAN TUNNEL TEST SECT/VANE 2
		0	43	35		
		0	0	57		
		52	0	61		
Task Order 1222O6		52	43			
'1222P6	23-Dec-96				30-Dec-96	CLEAN CRANKCASE VAC PUMP
		0	302			
		34	0	29		
Task Order 1222P6		34	302			
'1222Q6	23-Dec-96				2-Jan-97	REPLACE LOCKING PIN
		0	0			
		32	1	29		
Task Order 1222Q6		32	1			
'1222T6	23-Dec-96				2-Jan-97	REINSULATE STEAM LINE
		0	71			
		141	18	25		
Task Order 1222T6		141	89			
'1222U6	30-Dec-96				3-Jan-97	MOVE BLADES /HYD UNIT
		38	0	31		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
Task Order 1222U6		38	0			
'1229	20-May-97				26-Aug-97	REPR LEAKING CHILLER
Task Order 1229		0	0			
'1230B6	19-Nov-96				25-Nov-96	CERTIFY GAGES
Task Order 1230B6		0	0			
'1230C6	9-Dec-96				17-Dec-96	PERFORM P.M.
		8	0	19		
Task Order 1230C6		8	0			
'1236B6	12-Dec-96					REPL ROOFS
		120	0	41		
Task Order 1236B6		120	0			
'1236C6	6-Dec-96				27-Jan-97	REPAIR CONCRETE
		0	0			
		12	0	58		
		6	0	61		
Task Order 1236C6		18	0			
'1236E6	6-Dec-96				19-Dec-96	REINSULATE CEILING
		0	38			
		54	0	25		
Task Order 1236E6		54	38			
'1236G6	9-Dec-96				28-Feb-97	REPR AC CONTROLS
		26	0	30		
Task Order 1236G6		26	0			
'1236J6	9-Dec-96				24-Dec-96	REPL INSULATION
		0	121			
		46	0	25		
Task Order 1236J6		46	121			
'1236M6	11-Dec-96				23-Dec-96	INSTALL INSULATION ON PIPE
		34	65	25		
Task Order 1236M6		34	65			
'1236O6	12-Dec-96				13-Feb-97	OIL LEAK PEDISTAL OF M.G.SET
		0	251			
		88	0	13		
		2	7	19		
		100	28	29		
		60	0	31		
		8	16	33		
Task Order 1236O6		258	302			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'1236Q6	12-Dec-96				24-Dec-96	MODIFY VENT
		8	0	22		
		23	0	25		
		14	125	33		
Task Order 1236Q6		45	125			
'1236S6	19-Dec-96				20-Feb-97	REROUTE SUPPLY LINE
		0	2276			
		104	0	22		
		2	0	26		
		90	3269	33		
		0	50	35		
		13	0	57		
Task Order 1236S6		209	5595			
'1236X6	30-Dec-96				16-Jan-97	REPRS TO GEAR TRAIN OR MOTOR
		38	0	13		
		48	0	29		
Task Order 1236X6		86	0			
'1236Y6	30-Dec-96				7-Jan-97	REPAIR HEATING SYSTEM
		8	0	22		
		34	43	30		
		8	0	33		
Task Order 1236Y6		50	43			
'1236Z6	2-Jan-97				27-Jan-97	REPR LEAK ON COOLING TOWER
		0	982			
		15	0	19		
		191	151	25		
		20	0	29		
		16	63	33		
		16	0	71		
Task Order 1236Z6		258	1196			
'1240B6	19-Nov-96				25-Nov-96	CERTIFY GAGES
Task Order 1240B6		0	0			
'1240C6	19-Nov-96				31-Dec-96	PHOTO EQUIPMENT
		186	0	29		
Task Order 1240C6		186	0			
'1240D6	19-Nov-96				31-Dec-96	MODS TO EQUIPMENT
		0	9			
		472	53	29		
		24	0	71		
Task Order 1240D6		496	62			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'1240E6	9-Dec-96				17-Dec-96	PERFORM P.M.
		6	0	29		
Task Order 1240E6		6	0			
'1242E6	12-Dec-96					REPLACE ROOFS
		141	0	41		
Task Order 1242E6		141	0			
'1242G6	10-Dec-96				16-Dec-96	WATER HEATER UNIT LEAKING
		0	153			
		4	0	19		
		16	34	33		
Task Order 1242G6		20	187			
'1242K6	12-Dec-96				18-Dec-96	REPLACE BAD STEAM TRAP
		22	0	25		
		24	0	33		
Task Order 1242K6		46	0			
'1242O6	28-Jan-97				20-Feb-97	REPAINT FAN
		0	205	35		
		34	0	57		
Task Order 1242O6		34	205			
'1242P6	17-Dec-96				15-Jan-97	REPAIR WALL OF 102A
Task Order 1242P6		0	0			
'1242W6	19-Dec-96				14-Mar-97	REPL AC UNIT
		22	714	30		
		0	4	35		
Task Order 1242W6		22	718			
'1242Z6	18-Dec-96				19-Dec-96	REBUILD REGULATORS
		6	0	26		
		8	0	30		
		24	9	33		
Task Order 1242Z6		38	9			
'1250B6	19-Nov-96				25-Nov-96	CERTIFY GAGES
Task Order 1250B6		0	0			
'1250C6	19-Nov-96				31-Dec-96	POWER MAINTENANCE
		29	3	19		
Task Order 1250C6		29	3			
'1250D6	19-Nov-96				31-Dec-96	ENERGY MONITORING
		643	0	64		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
Task Order 1250D6		643	0			
'1250F6	19-Nov-96				31-Dec-96	POWER DISTRIBUTION
		53	66	19		
Task Order 1250F6		53	66			
'1250G6	19-Nov-96				31-Dec-96	SEWAGE LIFT STATIONS
		32	0	29		
		15	0	31		
		0	0	58		
		59	0	61		
		24	0	71		
Task Order 1250G6		130	0			
'1250H6	9-Dec-96				17-Dec-96	PERFORM P.M.
		8	0	19		
Task Order 1250H6		8	0			
'1252	28-Jan-97				27-Apr-97	PERFORM P.M.
Task Order 1252		0	0			
'1254A6	2-Dec-96				2-Dec-96	REPAIR LN2 PUMP (TRLR)
		0	2786			
		16	0	29		
Task Order 1254A6		16	2786			
'1254B6	3-Dec-96				6-Dec-96	RELOC VEEDER TANK
		18	3	19		
Task Order 1254B6		18	3			
'1254C6	9-Dec-96				7-Feb-97	RE-INSUL PIPING
		0	340			
		174	0	25		
Task Order 1254C6		174	340			
'1254E6	18-Dec-96				6-Jan-97	LIFT PUMP FROM TANK
		0	47			
		16	0	19		
		31	0	31		
Task Order 1254E6		47	47			
'1254F6	11-Dec-96				16-Dec-96	REPL GASKET
		8	0	22		
		48	229	29		
		20	0	31		
Task Order 1254F6		76	229			
'1254H6	11-Dec-96				23-Jan-97	REPLACE VALVE

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		0	993			
		1	0	26		
		8	0	29		
		8	0	33		
Task Order 1254H6		17	993			
'1254I6	11-Dec-96				14-Jan-97	REPL SWITCH
		0	756			
		48	0	29		
Task Order 1254I6		48	756			
'1254J6	13-Dec-96				24-Feb-97	COMPRESSOR NOS 6 SMOKING
		0	367			
		74	0	13		
		102	0	19		
		60	0	22		
		5	0	26		
		182	7	29		
		377	0	31		
		24	0	33		
		6	0	35		
		2	0	41		
Task Order 1254J6		832	374			
'1254K6	19-Dec-96				23-Jan-97	REPR COUNTER
		0	27			
		19	0	29		
Task Order 1254K6		19	27			
'1254M6	19-Dec-96				8-Feb-97	REMOVE ASBESTOS
		0	24			
		109	324	25		
Task Order 1254M6		109	348			
'1254N6	19-Dec-96				23-Dec-96	REINSULATE STEAM LINE
		52	0	25		
Task Order 1254N6		52	0			
'1254O6	23-Dec-96				8-Jan-97	REPR AIR COMPRESSOR
		0	178			
		27	19	19		
		24	792	33		
Task Order 1254O6		51	989			
'1254R6	2-Jan-97				13-Jan-97	REPR AIR LEAK ON FLANGE
		50	0	31		
		31	0	33		
Task Order 1254R6		81	0			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'1254S6	2-Jan-97				27-Jan-97	INSTALL WELDOLET
		0	924			
		72	0	22		
		4	0	26		
		9	0	31		
		80	132	33		
Task Order 1254S6		165	1056			
'1254T6	2-Jan-97				28-Jan-97	REMOVE HEAD ON COOLER
		0	0			
		82	0	22		
		8	0	26		
		136	20	29		
		45	0	31		
		180	60	33		
Task Order 1254T6		451	80			
'1260B6	19-Nov-96				25-Nov-96	CERTIFY GAGES
Task Order 1260B6		0	0			
'1260D6	19-Nov-96				31-Dec-96	DIESEL PUMPS
		0	82			
		72	14	29		
		22	0	71		
Task Order 1260D6		94	96			
'1260F6	9-Dec-96				19-Dec-96	PERFORM P.M.
		12	0	30		
Task Order 1260F6		12	0			
'1260G6	9-Dec-96				19-Dec-96	PERFORM P.M.
		8	0	30		
Task Order 1260G6		8	0			
'1260H6	10-Dec-96				17-Dec-96	PERFORM P.M.
		4	0	30		
Task Order 1260H6		4	0			
'1262B6	2-Dec-96				6-Dec-96	REPAIR 2 COND.PUMPS
		8	0	25		
		34	0	29		
		16	38	33		
		8	0	71		
Task Order 1262B6		66	38			
'1262E6	4-Dec-96				5-Dec-96	BROKEN WATER LINE
		28	0	33		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
Task Order 1262E6		28	0			
'1262F6	6-Dec-96				2-Apr-97	REMOVE ASBESTOS
		0	2138			
		429	120	25		
Task Order 1262F6		429	2258			
'1262G6	6-Dec-96				26-Feb-97	REPL COMPRESSOR
		0	1141			
		58	0	30		
Task Order 1262G6		58	1141			
'1262I6	9-Dec-96				6-Jan-97	LEAKING CYLINDER
		0	32			
		60	0	29		
Task Order 1262I6		60	32			
'1262N6	11-Dec-96				18-Dec-96	LOAD TEST FIXTURES
		24	0	31		
Task Order 1262N6		24	0			
'1262O6	9-Dec-96				6-Jan-97	REPL FILTER
		0	274			
		0	0	19		
		24	0	33		
Task Order 1262O6		24	274			
'1262V6	17-Dec-96				13-Jan-97	REPLACE HOT WATER HEATER
		0	1518			
		16	0	19		
		16	0	25		
		16	43	33		
Task Order 1262V6		48	1561			
'1262Z6	23-Jan-97				10-Apr-97	REPR WINDOW ADD OUTLETS ETC
		0	81			
		8	0	19		
		8	2	33		
		61	23	35		
		12	0	57		
		14	0	59		
Task Order 1262Z6		103	106			
'1291A6	26-Nov-96				26-Dec-96	SHUTDOWN
		24	0	19		
		14	0	29		
		72	376	30		
		20	0	33		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
Task Order 1291A6		130	376			
'1291A7	11-Aug-97					SHUTDOWN
		0	10	29		
		65	207	30		
Task Order 1291A7		65	217			
'1291B6	15-Nov-96				17-Dec-96	SHUTDOWN
Task Order 1291B6		0	0			
'1291C6	2-Dec-96				18-Dec-96	SHUTDOWN
		0	73			
		40	4	30		
Task Order 1291C6		40	77			
'1291D6	25-Nov-96				27-Dec-96	SHUTDOWN
		4	0	26		
		8	0	29		
		8	0	30		
		24	46	33		
Task Order 1291D6		44	46			
'1291E6	4-Dec-96				18-Dec-96	SHUTDOWN
		6	14	30		
Task Order 1291E6		6	14			
'2090F7	25-Sep-97				24-Oct-97	SHUTDOWN
		172	999	30		
		2	0	33		
Task Order 2090F7		174	999			
'2090K7	19-Sep-97					SHUTDOWN
		4	0	13		
Task Order 2090K7		4	0			
'2090M7	17-Sep-97				9-Oct-97	SHUTDOWN
		4	0	29		
		20	74	30		
Task Order 2090M7		24	74			
'2090O7	10-Sep-97				7-Oct-97	PM
		1	0	19		
		18	0	29		
		48	1532	30		
Task Order 2090O7		67	1532			
'2090S7	17-Sep-97					SHUTDOWN
Task Order 2090S7		0	0			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'2190A7	23-Jan-97				14-Feb-97	SHUTDOWN
		0	14			
		48	30	30		
Task Order 2190A7		48	44			
'2190B7	21-Nov-96				24-Jan-97	SHUTDOWN
		0	497			
		8	0	13		
		41	22	29		
		24	0	30		
		8	0	33		
		8	0	71		
Task Order 2190B7		89	519			
'2190C7	15-Nov-96				24-Jan-97	SHUTDOWN
		0	32			
		4	0	29		
		30	87	30		
Task Order 2190C7		34	119			
'2190E7	13-Jan-97				13-Feb-97	SHUTDOWN
		24	0	29		
		112	0	30		
		8	0	71		
Task Order 2190E7		144	0			
'2190F7	15-Nov-96				15-Nov-96	SHUTDOWN
Task Order 2190F7		0	0			
'2190K7	10-Dec-96				9-Jan-97	SHUTDOWN
		0	420			
		40	14	19		
		4	0	29		
		8	4	30		
Task Order 2190K7		52	438			
'2191B6	28-Oct-96				2-Dec-96	SHUTDOWN
		6	0	29		
		38	18	30		
Task Order 2191B6		44	18			
'2191C6	16-Oct-96				29-Jan-97	SHUTDOWN
		4	0	19		
		60	9	29		
		197	884	30		
Task Order 2191C6		261	893			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'2191D6	14-Nov-96				6-Dec-96	SHUTDOWN
		0	2062			
		5	0	19		
		34	0	29		
		172	1346	30		
		16	0	71		
Task Order 2191D6		227	3408			
'2191H6	10-Oct-96				26-Nov-96	SHUTDOWN
		8	0	29		
		20	9	30		
Task Order 2191H6		28	9			
'2191I6	11-Oct-96				14-Nov-96	SHUTDOWN
		0	376			
		20	0	19		
		100	108	29		
		98	436	30		
		44	0	33		
Task Order 2191I6		262	920			
'2290A7	15-Jan-97				14-Feb-97	SHUTDOWN
		0	105			
		43	0	13		
		2	0	26		
		16	0	29		
		8	3	30		
		20	0	33		
Task Order 2290A7		89	108			
'2290J7	21-Jan-97				5-Feb-97	SHUTDOWN
		4	0	29		
		12	19	30		
Task Order 2290J7		16	19			
'2291B6	15-Nov-96				12-Dec-96	SHUTDOWN
		0	33			
		16	10	30		
Task Order 2291B6		16	43			
'2390A7	21-Jan-97				14-Mar-97	SHUTDOWN
		16	0	30		
Task Order 2390A7		16	0			
'2390C7	25-Mar-97				4-Apr-97	SHUTDOWN
		4	0	29		
		40	101	30		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
Task Order 2390C7		44	101			
'2390D7	3-Feb-97				26-Mar-97	SHUTDOWN
		1	0	29		
		12	0	30		
Task Order 2390D7		13	0			
'2390F7	6-Feb-97				2-Apr-97	SHUTDOWN
		0	138			
		30	19	29		
		180	1544	30		
		71	0	67		
		8	0	71		
Task Order 2390F7		289	1701			
'2390I7	7-Feb-97				7-Mar-97	SHUTDOWN
		0	67			
		34	0	13		
		2	0	19		
		44	100	29		
		148	883	30		
Task Order 2390I7		228	1050			
'2390J7	25-Feb-97				2-Apr-97	SHUTDOWN
		12	0	29		
		1	0	33		
Task Order 2390J7		13	0			
'2490A7	27-Feb-97				17-Apr-97	SHUTDOWN
		0	219			
		4	0	26		
		28	126	29		
		64	5	30		
		32	0	33		
Task Order 2490A7		128	350			
'2490C7	12-Mar-97				10-Apr-97	SHUTDOWN
		24	0	30		
Task Order 2490C7		24	0			
'2490H7	25-Mar-97				15-Apr-97	SHUTDOWN
		12	10	30		
Task Order 2490H7		12	10			
'2490L7	21-Jan-97				7-May-97	SHUTDOWN
		0	6			
		2	0	29		
		36	331	30		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
Task Order 2490L7		38	337			
'2590D7	15-Apr-97				8-May-97	SHUTDOWN
		0	102			
		12	0	30		
Task Order 2590D7		12	102			
'2590E7	15-Apr-97				22-May-97	SHUTDOWN
		4	118	30		
Task Order 2590E7		4	118			
'2590K7	15-Apr-97				22-Apr-97	SHUTDOWN
		19	0	13		
		16	0	29		
		48	0	30		
		4	0	33		
Task Order 2590K7		87	0			
'2790D7	16-Jul-97				14-Aug-97	SHUTDOWN
		18	0	13		
		1	0	19		
		30	0	29		
		190	181	30		
		8	0	33		
Task Order 2790D7		247	181			
'2990A7	16-Jul-97				19-Sep-97	SHUTDOWN
		1	0	26		
		0	11	30		
		10	0	31		
		14	0	33		
		40	0	61		
Task Order 2990A7		65	11			
'2990H7	18-Aug-97				15-Sep-97	SHUTDOWN
		6	302	30		
		5	0	33		
Task Order 2990H7		11	302			
'3090F7	25-Sep-97				7-Oct-97	SHUTDOWN
		16	40	30		
Task Order 3090F7		16	40			
'3090K7	19-Sep-97					SHUTDOWN
		0	1612	30		
Task Order 3090K7		0	1612			
'3090M7	17-Sep-97				14-Oct-97	SHUTDOWN

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		12	0	29		
		48	147	30		
Task Order 3090M7		60	147			
'3090O7	23-Sep-97				30-Sep-97	SHUTDOWN
		24	38	30		
Task Order 3090O7		24	38			
'3090S7	17-Sep-97					SHUTDOWN
Task Order 3090S7		0	0			
'3190A7	23-Jan-97				14-Feb-97	SHUTDOWN
		16	0	30		
Task Order 3190A7		16	0			
'3190B7	21-Nov-96				21-Jan-97	SHUTDOWN
		4	0	13		
		5	0	29		
		8	0	30		
Task Order 3190B7		17	0			
'3190C7	15-Nov-96				22-Jan-97	SHUTDOWN
		0	1002			
		5	0	13		
		4	0	26		
		138	142	29		
		47	711	30		
		8	0	33		
		16	0	71		
Task Order 3190C7		218	1855			
'3190E7	13-Jan-97				11-Feb-97	SHUTDOWN
		46	0	30		
Task Order 3190E7		46	0			
'3190F7	15-Nov-96				15-Nov-96	SHUTDOWN
Task Order 3190F7		0	0			
'3190K7	10-Dec-96				31-Dec-96	SHUTDOWN
		54	0	30		
Task Order 3190K7		54	0			
'3191B6	28-Oct-96				20-Nov-96	SHUTDOWN
		2	0	29		
Task Order 3191B6		2	0			
'3191C6	16-Oct-96				9-Dec-96	SHUTDOWN
		0	114			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		16	119	30		
Task Order 3191C6		16	233			
'3191D6	14-Nov-96				3-Dec-96	SHUTDOWN
		16	24	30		
Task Order 3191D6		16	24			
'3191H6	10-Oct-96				22-Nov-96	SHUTDOWN
		16	0	29		
		42	136	30		
Task Order 3191H6		58	136			
'3191I6	11-Oct-96				14-Nov-96	SHUTDOWN
		0	1155			
		24	0	19		
		94	115	29		
		44	109	30		
		4	0	33		
		0	2	35		
		32	0	61		
Task Order 3191I6		198	1381			
'3290A7	15-Jan-97				13-Feb-97	SHUTDOWN
		1	0	26		
		4	0	29		
		4	0	33		
Task Order 3290A7		9	0			
'3290J7	21-Jan-97				6-Feb-97	SHUTDOWN
		1	0	13		
		8	0	29		
		8	0	30		
Task Order 3290J7		17	0			
'3291B6	15-Nov-96				13-Dec-96	SHUTDOWN
		16	20	30		
'3						
Task Order 3291B6		16	20			
'3390A7	21-Jan-97				13-Mar-97	SHUTDOWN
		56	0	30		
Task Order 3390A7		56	0			
'3390D7	3-Feb-97				27-Mar-97	SHUTDOWN
		0	242			
		2	0	29		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		64	138	30		
Task Order 3390D7		66	380			
'3390F7	6-Feb-97				28-Mar-97	SHUTDOWN
		0	77			
		2	0	26		
		12	0	29		
		62	40	30		
		12	0	33		
		8	0	71		
Task Order 3390F7		96	117			
'3390I7	7-Feb-97				3-Mar-97	SHUTDOWN
		28	2120	30		
Task Order 3390I7		28	2120			
'3390J7	25-Feb-97				1-Apr-97	SHUTDOWN
		1	0	29		
Task Order 3390J7		1	0			
'3490A7	27-Feb-97				11-Apr-97	SHUTDOWN
		8	0	13		
		4	0	29		
Task Order 3490A7		12	0			
'3490C7	12-Mar-97				11-Apr-97	SHUTDOWN
		6	0	29		
		80	54	30		
Task Order 3490C7		86	54			
'3490H7	25-Mar-97				15-Apr-97	SHUTDOWN
		4	0	30		
Task Order 3490H7		4	0			
'3490L7	21-Jan-97				29-Apr-97	SHUTDOWN
		2	0	29		
		12	21	30		
Task Order 3490L7		14	21			
'3590D7	15-Apr-97				9-May-97	SHUTDOWN
		16	0	30		
Task Order 3590D7		16	0			
'3590E7	15-Apr-97				23-May-97	SHUTDOWN
		2	0	19		
		8	0	29		
		14	259	30		
Task Order 3590E7		24	259			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'3590K7	15-Apr-97				22-Apr-97	SHUTDOWN
		4	0	13		
		1	0	29		
Task Order 3590K7		5	0			
'3790D7	16-Jul-97				4-Aug-97	SHUTDOWN
		11	0	30		
Task Order 3790D7		11	0			
'3990A7	16-Jul-97				26-Sep-97	SHUTDOWN
		110	0	13		
		4	0	26		
		78	808	29		
		31	44	30		
		35	0	31		
		40	0	33		
		0	166	90		
Task Order 3990A7		298	1018			
'3990H7	18-Aug-97				16-Sep-97	SHUTDOWN
		108	0	13		
		33	1098	26		
		279	1239	29		
		77	1101	30		
		44	111	33		
Task Order 3990H7		541	3549			
'4090M7	17-Sep-97				8-Oct-97	SHUTDOWN
		20	54	30		
Task Order 4090M7		20	54			
'4090S7	17-Sep-97					SHUTDOWN
		26	21	30		
Task Order 4090S7		26	21			
'4191B6	28-Oct-96				29-Nov-96	SHUTDOWN
		2	0	19		
		8	2	29		
		4	0	30		
		8	0	33		
Task Order 4191B6		22	2			
'4191H6	10-Oct-96				22-Nov-96	SHUTDOWN
		24	25	30		
Task Order 4191H6		24	25			
'4290A7	15-Jan-97				13-Feb-97	SHUTDOWN

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		0	56			
		4	0	13		
		2	0	26		
		8	0	29		
		6	67	30		
		4	0	33		
Task Order 4290A7		24	123			
'4291B6	15-Nov-96				17-Dec-96	SHUTDOWN
		12	20	30		
Task Order 4291B6		12	20			
'4390C7	25-Mar-97				3-Apr-97	SHUTDOWN
		0	208			
		29	45	30		
Task Order 4390C7		29	253			
'4390F7	6-Feb-97				21-Mar-97	SHUTDOWN
		0	120			
		12	0	29		
		46	307	30		
		4	0	33		
Task Order 4390F7		62	427			
'4390I7	7-Feb-97				4-Mar-97	SHUTDOWN
		4	0	30		
Task Order 4390I7		4	0			
'4490C7	12-Mar-97				9-Apr-97	SHUTDOWN
		0	796			
		48	55	30		
Task Order 4490C7		48	851			
'4590D7	15-Apr-97				9-May-97	SHUTDOWN
		16	0	30		
Task Order 4590D7		16	0			
'4590E7	15-Apr-97				15-May-97	SHUTDOWN
		8	3	29		
		8	20	30		
Task Order 4590E7		16	23			
'4590K7	15-Apr-97				22-Apr-97	SHUTDOWN
		1	0	13		
		4	0	33		
Task Order 4590K7		5	0			
'4790D7	16-Jul-97				30-Jul-97	SHUTDOWN

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		1	0	19		
		4	0	26		
		16	0	33		
Task Order 4790D7		21	0			
'4990H7	18-Aug-97				19-Sep-97	SHUTDOWN
		132	0	13		
Task Order 4990H7		132	0			
'5090S7	17-Sep-97					SHUTDOWN
Task Order 5090S7		0	0			
'5191B6	28-Oct-96				29-Nov-96	SHUTDOWN
		4	0	30		
Task Order 5191B6		4	0			
'5290A7	15-Jan-97				10-Feb-97	SHUTDOWN
		3	0	26		
		16	0	29		
		24	0	30		
		4	0	33		
Task Order 5290A7		47	0			
'5291B6	15-Nov-96				13-Dec-96	SHUTDOWN
		16	0	30		
Task Order 5291B6		16	0			
'5490C7	12-Mar-97				8-Apr-97	SHUTDOWN
		0	77			
		24	47	30		
Task Order 5490C7		24	124			
'5590E7	15-Apr-97				16-May-97	SHUTDOWN
		8	0	29		
		4	0	30		
Task Order 5590E7		12	0			
'5990D7	18-Aug-97				26-Aug-97	SHUTDOWN
		0	55	30		
Task Order 5990D7		0	55			
'5990H7	26-Aug-97				11-Sep-97	SHUTDOWN
		4	0	30		
Task Order 5990H7		4	0			
'6090S7	17-Sep-97					SHUTDOWN
		0	338	29		
Task Order 6090S7		0	338			

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'6191B6	28-Oct-96				27-Nov-96	SHUTDOWN
		3	0	19		
		32	246	29		
		8	0	71		
Task Order 6191B6		43	246			
'903010	6-Jun-97					INVENTORY LUMBER
		0	-5205	0		
		0	4418	35		
Task Order 903010		0	-787			
0100D7	6-Nov-96				31-Jan-97	ELEV. CRANES,WIRE ROPE INSP.
		286		28		
Task Order 0100D7		286				
'0110E7	9-Jan-97				27-Feb-97	PM OXYGEN DET/ & GAS AL. MSA
		4		39		
Task Order 0110E7		4				
'0112H7	28-Jan-97				31-Jan-97	CAL. TRANS. ON 22" TUNNEL
		24		39		
Task Order 0112H7		24				
'0112K7	28-Jan-97				28-Jun-97	CAL. VARIOUS EQUIP. RM. 114
		26		39		
Task Order 0112K7		26				
'0130C7	9-Jan-97				22-Feb-97	PM OXYGEN ALARM SENSOR
		6		39		
Task Order 0130C7		6				
'0190B7	20-Nov-96				24-Jan-97	YEARLY PM
		8		28		
		8		39		
Task Order 0190B7		16				
'0190C7	15-Nov-96				24-Jan-97	1238A & 1238B YEARLY PM
		2		28		
		30		39		
Task Order 0190C7		32				
'0190D7	14-Nov-96				24-Jan-97	YEARLY PM
		5		28		
		36		39		
Task Order 0190D7		41				
'0190E7	15-Jan-97				22-Jul-97	PM

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		5		28		
Task Order 0190E7		5				
'0190F7	13-Nov-96				7-Jan-97	ANNUAL PM
		2		28		
Task Order 0190F7		2				
'0190G7	13-Nov-96				30-Jan-97	YEARLY PM
		7		28		
Task Order 0190G7		7				
'0190J7	11-Dec-96				29-Apr-97	PM
		2		28		
Task Order 0190J7		2				
'0200D7	27-Feb-97				25-Mar-97	MONTHLY CRANE INSPECTIONS
		254		28		
Task Order 0200D7		254				
'0201D7	19-Feb-97				11-Mar-97	PM FORK LIFTS
		40		28		
Task Order 0201D7		40				
'0210C7	19-Feb-97				20-Feb-97	PM
		8		39		
Task Order 0210C7		8				
'0210D7	19-Feb-97				30-Apr-97	PM
		3		39		
Task Order 0210D7		3				
'0220G7	19-Feb-97				3-Apr-97	PM
		2		39		
Task Order 0220G7		2				
'0230C7	19-Feb-97				24-Apr-97	PM OXYGEN
		4		39		
Task Order 0230C7		4				
'0230F7	19-Feb-97				4-Mar-97	PM
		6		39		
Task Order 0230F7		6				
'0233J7	11-Feb-97				12-Feb-97	REPAIR ROLL-UP DOOR
		12		28		
Task Order 0233J7		12				
'0240E7	19-Feb-97				28-Mar-97	PM

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		3		39		
Task Order 0240E7		3				
'0260F7	19-Feb-97				28-Feb-97	PM
		4		39		
Task Order 0260F7		4				
'0290A7	15-Jan-97				5-Aug-97	PM
		22		28		
Task Order 0290A7		22				
'0290B7	7-Jan-97				29-Apr-97	YEARLY PM
		10		28		
Task Order 0290B7		10				
'0290D7	23-Dec-96				5-Aug-97	P/M SHUTDOWN
		10		39		
Task Order 0290D7		10				
'0290G7	29-Nov-96				6-Feb-97	YEARLT PM
		8		28		
Task Order 0290G7		8				
'0290H7	20-Nov-96				7-Feb-97	YEARLY PM
		4		28		
Task Order 0290H7		4				
'0300D7	11-Mar-97				14-Apr-97	INSPECTION OF CRANES/ELEV
		241		28		
Task Order 0300D7		241				
'0310D7	10-Mar-97				2-May-97	PM H2 GAS ALARM
		3		39		
Task Order 0310D7		3				
'0310G7	10-Mar-97				1-Apr-97	PM HYDRAULIC DOOR
		2		28		
Task Order 0310G7		2				
'0310J7	10-Mar-97				30-Apr-97	PM O2 ANALYZER
		3		39		
Task Order 0310J7		3				
'0323M7	31-Mar-97				3-Apr-97	CLEAN RELAY CONTACTS
		50		28		
Task Order 0323M7		50				
'0340E7	10-Mar-97				8-Mar-97	PM HYDROGEN DETECTOR

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		3		39		
Task Order 0340E7		3				
'0343X7	7-Mar-97				19-Mar-97	REPR. ELVAT.
		138		28		
Task Order 0343X7		138				
'0350I7	10-Mar-97				24-Apr-97	PM YOKOGOWA PEN
		14		39		
Task Order 0350I7		14				
'0390A7	17-Jan-97				5-Aug-97	1145 / 1155 YEARLY PM
		6		28		
Task Order 0390A7		6				
'0390D7	3-Feb-97				28-Mar-97	1198 /1199 YEARLY PM
		18		28		
Task Order 0390D7		18				
'0390F7	5-Feb-97				2-Apr-97	YEARLY PM
		12		28		
Task Order 0390F7		12				
'0390G7	13-Jan-97				5-Aug-97	PM
		35		28		
Task Order 0390G7		35				
'0390H7	19-Feb-97				27-Mar-97	P/M SHUTDOWN
		6		28		
Task Order 0390H7		6				
'0390I7	7-Feb-97				2-Apr-97	PM
		61		28		
Task Order 0390I7		61				
'0390J7	24-Feb-97				2-Apr-97	P/M SHUTDOWN
		4		28		
Task Order 0390J7		4				
'0390K7	15-Jan-97				10-Mar-97	PM
		10		28		
Task Order 0390K7		10				
'0390Q7	17-Mar-97				4-Apr-97	YEARLY PM
		3		28		
Task Order 0390Q7		3				
'0400D7	26-Mar-97				30-Apr-97	INSPECTION OF CRANES/ELEV

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		257		28		
Task Order 0400D7		257				
'0410C7	14-Apr-97				2-Jun-97	PM
		2		39		
Task Order 0410C7		2				
'0410E7	14-Apr-97				2-Jun-97	PM
		10		39		
Task Order 0410E7		10				
'0423J7	11-Apr-97				13-Aug-97	MINI PM
		15		28		
Task Order 0423J7		15				
'0430D7	14-Apr-97				28-May-97	PM
		6		39		
Task Order 0430D7		6				
'0430F7	14-Apr-97				30-Apr-97	PM
		3		39		
Task Order 0430F7		3				
'0437T7	18-Apr-97				16-May-97	INSPECT CABLES & BREAKS
		48		28		
Task Order 0437T7		48				
'0438K7	25-Apr-97				29-May-97	REPAIR CRANE (SOUTH)
		72		28		
Task Order 0438K7		72				
'0440E7	14-Apr-97				2-Jun-97	PM
		2		39		
Task Order 0440E7		2				
'0463G7	22-Apr-97				14-May-97	LOAD TEST LIFTING HARDWARE
		28		28		
Task Order 0463G7		28				
'0490A7	29-Jan-97				5-Aug-97	PM
		7		28		
		2		39		
Task Order 0490A7		9				
'0490B7	10-Feb-97				5-Aug-97	YEARLY PM
		4		28		
		66		39		
Task Order 0490B7		70				

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0490C7	11-Mar-97				11-Apr-97	PM
		1		28		
Task Order 0490C7		1				
'0490F7	17-Jan-97				11-Apr-97	YEARLY PM
		1		28		
Task Order 0490F7		1				
'0490I7	29-Jan-97				25-Apr-97	PM
		6		28		
Task Order 0490I7		6				
'0500D7	2-May-97				31-May-97	INSPECTION OF CRANES/ELEV
		242		28		
Task Order 0500D7		242				
'0510C7	13-May-97				31-Jul-97	PM OXYGEN DETECTOR
		3		39		
Task Order 0510C7		3				
'0510D7	13-May-97				28-Jul-97	PM O2 DETECTOR & H2 TRANSMITT
		24		39		
Task Order 0510D7		24				
'0510E7	13-May-97				2-Jun-97	PM FREON ANAL. ALARM
		2		39		
Task Order 0510E7		2				
'0511H7	28-May-97				28-May-97	CHECK OUT/REPAIR CRANE
		28		28		
Task Order 0511H7		28				
'0520C7	13-May-97				31-Jul-97	PM YOUNG VANE SENSOR
		3		39		
Task Order 0520C7		3				
'0524T7	1-Jul-97				11-Jul-97	REPR. FREIGHT ELEV.
		24		28		
Task Order 0524T7		24				
'0540E7	13-May-97				24-Jun-97	PM GAS ALARM SYSTEM
		2		39		
Task Order 0540E7		2				
'0540F7	13-May-97				28-May-97	PM GAS ALARM
		3		39		
Task Order 0540F7		3				

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'0560G7	13-May-97				2-Jun-97	PM OXYGEN ANALYZER
		3		39		
Task Order 0560G7		3				
'0590A7	3-Apr-97				5-Aug-97	PM
		153		24		
		8		28		
		36		39		
Task Order 0590A7		197				
'0590B7	13-Mar-97				3-Jun-97	PM
		9		28		
Task Order 0590B7		9				
'0590C7	24-Apr-97				5-Aug-97	YEARLY PM
		49		28		
		40		39		
Task Order 0590C7		89				
'0590E7	11-Apr-97				23-May-97	PM
		17		28		
Task Order 0590E7		17				
'0590H7	21-Apr-97				5-Aug-97	YEARLY PM
		1		28		
		8		39		
Task Order 0590H7		9				
'0590I7	29-Apr-97					YEARLY PM
		7		28		
Task Order 0590I7		7				
'0590J7	29-Apr-97				30-May-97	YEARLY PM
		2		28		
Task Order 0590J7		2				
'0590K7	11-Apr-97				22-Apr-97	PM
		3		28		
		33		39		
Task Order 0590K7		36				
'0600D7	3-Jun-97				15-Jul-97	INSPECTION OF CRANES/ELEV
		202		28		
Task Order 0600D7		202				
'0610C7	4-Jun-97				7-Jul-97	PM OXYGEN ANALYZER
		3		39		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
Task Order 0610C7		3				
'0610E7	4-Jun-97				2-Sep-97	PM GAS ALARM
		3		39		
Task Order 0610E7		3				
'0610G7	4-Jun-97				5-Jun-97	PM HYDRAULIC DOOR
		4		28		
Task Order 0610G7		4				
'0623N7	12-Jun-97				21-Jul-97	REPLACE SIDE WALL CABLES
		42		28		
Task Order 0623N7		42				
'0640E7	4-Jun-97				24-Jun-97	PM HYDROGEN DETECTOR
		2		39		
Task Order 0640E7		2				
'0642T7	1-Jul-97					REPL. STRIKE EDGE ON ELVATRS 4
		21		28		
Task Order 0642T7		21				
'0700D7	1-Jul-97				31-Jul-97	INSPECTION OF CRANES/ELEV
		267		28		
Task Order 0700D7		267				
'0710C7	8-Jul-97				5-Sep-97	PM GAS ALARM
		11		39		
Task Order 0710C7		11				
'0710E7	8-Jul-97				30-Sep-97	PM OXYGEN DETECTOR
		3		39		
Task Order 0710E7		3				
'0714N7	9-Jul-97				10-Jul-97	REPLACE/REPAIR-CABLE/WIRING
		29		28		
Task Order 0714N7		29				
'0723H7	10-Jul-97				22-Aug-97	S/U 3409 RPR. PMP.
		32		24		
Task Order 0723H7		32				
'0723Z7	25-Jul-97				8-Aug-97	S/U 4408 REPAIR CRANE
		96		28		
Task Order 0723Z7		96				
'0730D7	8-Jul-97				31-Jul-97	PM O2 ANALYZER
		2		39		

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
Task Order 0730D7		2				
'0730F7	8-Jul-97				28-Aug-97	PM OXYGEN SENSOR
		6		39		
Task Order 0730F7		6				
'0735H7	24-Jul-97				28-Jul-97	FOLLOW UP CRANE S&U 4405
		78		28		
Task Order 0735H7		78				
'0740F7	8-Jul-97				27-Aug-97	PM GAS ALARM
		3		39		
Task Order 0740F7		3				
'0740L7	8-Jul-97				20-Aug-97	PM ENVIRONMENTAL CHAMBER
		16		39		
Task Order 0740L7		16				
'0740N7	8-Jul-97				15-Aug-97	PM JOINTER AND MTR
		2		39		
Task Order 0740N7		2				
'0790A7	27-Jun-97				31-Jul-97	ANNUAL P.M.
		2		28		
		57		39		
Task Order 0790A7		59				
'0800D7	30-Jul-97				31-Aug-97	LRC - INSPECTION OF CRANS/ELEV
		308		28		
Task Order 0800D7		308				
'0810E7	13-Aug-97				30-Oct-97	PM OXYGEN DETECTOR
		3		39		
Task Order 0810E7		3				
'0810F7	13-Aug-97				27-Aug-97	PM FREON ANZ ALARM
		3		39		
Task Order 0810F7		3				
'0810G7	13-Aug-97				30-Oct-97	PM HYDROGEN TRANSMITTER
		21		39		
Task Order 0810G7		21				
'0830F7	13-Aug-97					PM OXYGEN ANALYZER
		3		39		
Task Order 0830F7		3				
'0830G7	13-Aug-97				20-Oct-97	PM OXYGEN DETECTOR

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		3		39		
Task Order 0830G7		3				
'0830H7	13-Aug-97				27-Aug-97	PM MULTIPOINT FREON MONITOR
		4		39		
Task Order 0830H7		4				
'0840H7	13-Aug-97				30-Sep-97	PM GAS ALARM SYSTEM
		2		39		
Task Order 0840H7		2				
'0841B7	4-Aug-97				8-Aug-97	REPLACE LEAKING CABLE REEL
		18		28		
Task Order 0841B7		18				
'0860K7	13-Aug-97				27-Aug-97	PM
		3		39		
Task Order 0860K7		3				
'0900D7	29-Aug-97					LRC-INSPECTION OF CRANES/ELEV
		255		28		
Task Order 0900D7		255				
'0923X7	23-Sep-97				23-Sep-97	ADJUST CABLES
		39		28		
Task Order 0923X7		39				
'0940E7	15-Sep-97				8-Sep-97	PM HYDROGEN DETECTOR
		2		39		
Task Order 0940E7		2				
'0990A7	22-Jul-97					YEARLY PM
		22		39		
Task Order 0990A7		22				
'0990C7	13-Aug-97					PM
		14		39		
Task Order 0990C7		14				
'0990E7	26-Aug-97				10-Nov-97	PM SHUTDOWN
		1		28		
Task Order 0990E7		1				
'1000D7	30-Sep-97				28-Nov-97	LRC-INSPECTION OF CRANES/ELV.
		293		28		
Task Order 1000D7		293				
'1010E6	21-Oct-96				26-Nov-96	PM DETECTORS

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
		3		39		
Task Order 1010E6		3				
'1010G6	21-Oct-96				3-Dec-96	P.M. GAS ALARMS
		7		39		
Task Order 1010G6		7				
'1012W6	18-Oct-96				25-Nov-96	REPAIR OVERHEAD CRANE BRAKE
		34		28		
Task Order 1012W6		34				
'1030F6	21-Oct-96				27-Nov-96	P.M. SENSORS/MONITOR
		6		39		
Task Order 1030F6		6				
'1033G6	30-Oct-96				4-Nov-96	REPAIR ELEV.
		40		28		
Task Order 1033G6		40				
'1040F6	21-Oct-96				29-Nov-96	PM AIR HANDLERS
		2		39		
Task Order 1040F6		2				
'1090B6	3-Oct-96				21-Nov-96	P/M SHUTDOWN
		2		28		
Task Order 1090B6		2				
'1090C7	30-Jul-97				14-Oct-97	SHUTDOWN
		2		28		
Task Order 1090C7		2				
'1090D6	4-Oct-96				22-Nov-96	P/M SHUTDOWN
		4		28		
		3		39		
Task Order 1090D6		7				
'1090E7	30-Sep-97					ANNUAL PM
		36		28		
		50		39		
Task Order 1090E7		86				
'1090F7	24-Sep-97				24-Oct-97	ANNUAL PM
		4		28		
Task Order 1090F7		4				
'1090G7	24-Sep-97					ANNUAL PM
		10		28		
Task Order 1090G7		10				

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'1090H6	3-Oct-96				20-Nov-96	P/M SHUTDOWN
		16		28		
Task Order 1090H6		16				
'1090L7	23-Sep-97					PM--SHUT-DOWN
		26		39		
Task Order 1090L7		26				
'1090R7	11-Sep-97				26-Sep-97	ANNUAL SHUTDOWN
		4		28		
Task Order 1090R7		4				
'1100D6	31-Oct-96				30-Nov-96	CRANES, ELEV. WIRE ROPE INSP.
		273		28		
Task Order 1100D6		273				
'1110E6	14-Nov-96				5-Dec-96	PM OXYGEN MONITORING MACHINE
		2		39		
Task Order 1110E6		2				
'1110F6	14-Nov-96				31-Jan-97	PM OXYGEN DETECTOR
		3		39		
Task Order 1110F6		3				
'1110G6	14-Nov-96				14-Feb-97	PM
		24		39		
Task Order 1110G6		24				
'1120D6	14-Nov-96				3-Jan-97	PM GENERATOR
		3		39		
Task Order 1120D6		3				
'1130D6	14-Nov-96				30-Dec-96	PM OXYGEN ANALYZER
		6		39		
Task Order 1130D6		6				
'1134W6	21-Nov-96				30-Dec-96	REPLACE CABLES ON WINCHES
		32		28		
Task Order 1134W6		32				
'1140F6	14-Nov-96				30-Dec-96	PM GAS ALARM SYSTEM
		3		39		
Task Order 1140F6		3				
'1142B6	1-Nov-96				29-Jan-97	REPAIR DRAIN LINE
		42		28		
Task Order 1142B6		42				

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'1191A6	16-Oct-96				5-Aug-97 PM	
		30		28		
		27		39		
Task Order 1191A6		57				
'1191B6	25-Oct-96				5-Dec-96 P/M SHUTDOWN, B-1206 COMPLEX	
		14		28		
Task Order 1191B6		14				
'1191C6	17-Oct-96				5-Aug-97 P/M SHUTDOWN	
		15		28		
Task Order 1191C6		15				
'1191D6	14-Nov-96				5-Aug-97 PM	
		18		28		
		3		39		
Task Order 1191D6		21				
'1191H6	28-Oct-96				29-Nov-96 SHUTDOWN	
		27		39		
Task Order 1191H6		27				
'1191I6	11-Oct-96				5-Aug-97 PM	
		46		28		
		48		39		
Task Order 1191I6		94				
'1191K6	3-Oct-96				13-Dec-96 SHUTDOWN	
		1		28		
Task Order 1191K6		1				
'1194C6	6-Jan-97				6-Dec-96 YEARLY PM	
		10		28		
		3		39		
Task Order 1194C6		13				
'1196F6	3-Oct-96				11-Dec-96 SHUTDOWN	
		3		28		
Task Order 1196F6		3				
'1200D6	31-Oct-96				31-Dec-96 CRANE, ELEV. WIRE ROPE INSP.	
		253		28		
Task Order 1200D6		253				
'1210D6	10-Dec-96				11-Feb-97 PM GAS ALARMS	
		4		39		
Task Order 1210D6		4				

Work Req. Number	Date Received	Hours Used	Material Cost	Craft	Actual Compl.Date	Description
'1210F6	10-Dec-96				2-Jan-97	PM O2 ANALYZER
		4		39		
Task Order 1210F6		4				
'1242S6	16-Dec-96				21-Feb-97	MODIFY CMF CRANE
		21		28		
Task Order 1242S6		21				

ATTACHMENT J-C9-12A

FY1998 ANNUAL BUILDING SHUT DOWN SCHEDULE

NOTE: This schedule is included as an example.

FACILITY	BLDG. NO.	O	N	D	J	F	M	A	M	J	J	A
FLIGHT ELECT LAB	1202	Sep 29 thru Oct 24										
STABILITY & CONTROL LAB	1298	Sep 29 thru Oct 24										
VEHICLE ANTENNA LAB	1299	Sep 29 thru Oct 24										
ATOMSPHERIC CHEMISTRY	1273	1-7										
LASER RES & APPLI LAB	1201	1-7										
SYSTEM ENGINEERING BLDG.	1209	1-7										
RESEARCH LAB	1293	1-20										
ACTIVITIES CENTER	1222, 1216	8-14										
ENVIRONMENTAL LAB	1250	20-31										
HPTA	1275	20-31										
SHIPPING & RECEIVING COMP	1206, 1240	20-31										
STRUCTURES/DYN RESEARCH	1229	27-31										
NASA FIRE STATION	1248	27-31										
ADVANCED TECH RESEARCH LAB	1200	27-31										
INSTRUMENT RESEARCH LAB	1230	27-31										
GAS DYN COMPLEX	1247D		3-20									
HYPERSONIC PROP TEST	1221		3-20									
ANECHOIC NOISE FACILITY	1218A		3-20									
8' HIGH TEMP. TUNNEL	1265		10-28									
NITROGEN PUMPING STATION	1277		10-28									
COMPRESSOR STATION	1247E		10-28									
FSSD COMPLEX	1188, 1191			1-5								
STRUCTURE LAB	1148			1-12								
FATIGUE RESEARCH LAB	1205			1-12								
SED SYSTEM LAB	1272			1-12								
FLIGHT CONTROL RESEARCH	1168			1-12								
LOGISTICS & PROPERTY	1169			1-12								
CAFETERIA	1213			23-31								
4X7 METER TUNNEL/7X10 TUNNEL	1212, 1212C			24	4							

FACILITY	BLDG. NO.	O	N	D	J	F	M	A	M	J	J	A
GROUNDS MAINTENANCE	1285, 1286				5-9							
20' VERTICAL SPIN TUNNEL	645				5-9							
BASIC AERO. RESEARCH TUNNEL	1214				5-9							
PROJECTS OFFICE	1300				5-9							
FOUNDRY	1237A				12-23							
COMPOSITE MODEL SHOP	1238				12-23							
SPACE TECH/FAB SHOP	1232				12-23							
EMERGENCY EQUIP. STORAGE	1156				26-30							
HOT WATER CONVERTER FACILITY	1154				26-30							
12' LOW SPEED TUNNEL	644				26-30							
SYS SAFETY QUAL & REL	1162				26-30							
ELECT CONT LAB	1283					2-6						
BUILDING TRADES SHOP	1292					2-6						
COMPONENT VERIFICATION BLDG	1284B					2-6						
CER HEATED COMB/7"M-7 TUNNEL	1263, 1264					2-6						
AIRCRAFT LANDING DYN COMP	1257-1262					9-13						
WATER TANK #2	1244A					17-23						
EXPERIMENTAL MACHINE	1225					17-27						
0.3 METER TRANS CRYO TUNNEL	1242					23	6					
FREQUENCY CONVERTER	1235					23	6					
LARC HEADQUARTERS	1219						2-6					
HANGAR COMPLEX	1244						2-6					
SIMULATION RESEARCH LAB	1220						2-6					
PHOTO LAB & SOLAR FIELD	1155, 1145						9-13					
PROF SERVICE ANNEX	1153						9-13					
MANAGEMENT SUPPORT	1151						9-13					
GRAPHICS	1163						16-20					
IMPACT DYNAMICS COMPLEX	1297						16-20					
DATA REDUCTION COMPLEX	1268						16-20					
AIR COND SHOP/PLANT SUPPORT	1198, 1199						23-27					
GATE GUARD HOUSES	1228/1101						23-27					
TECH EDITING BRANCH OFFICE	1183						30	3				
HAZ WASTE/PCP STORAGE	1166, 1167						30	3				
FINANCIAL MANAGEMENT	1192						30	3				
AIRCRAFT NOISE REDUCTION LAB	1208, 1287						30	10				
41' X 60' SPHERE	1295						30	10				
HIGH TEMP MATERIALS LAB	1267							6-10				

FACILITY	BLDG. NO.	O	N	D	J	F	M	A	M	J	J	A
MATERIALS PROP & NDE LAB	1296							6-10				
ACQ/PERS TRAINING CLASS	1195A							6-10				
SYS ENGINEERING DEVEL	1204							13-17				
POLLUTION CONTROL PLANT	1223, 1223A							13-17				
CHILD DEV CENTER/ASTRON CLUB	1231							13-17				
GENERAL ROTOR AERO LAB	647							20-24				
WATER TANK	1252							25-26				
PROF SERV & OCCUP MEDICINE	1149							27	1			
TECH LIBRARY	1194							27	1			
HEATING & STEAM GENERATION	1215							30	8			
PURO/SYS ENVIRON TEST FACILITY	1158-1161								11-15			
EVAL & INFO CENTER	1130T								11-15			
PUBLICATION FACILITY	1152								11-15			
TELEPHONE SWITCH ROOM	1211								18-22			
TRANSONIC DYN TUNNEL	648									27-28		
UNITARY WIND TUNNEL	1251										24	TO
31-INCH MACH 10 TUNNEL	1251A										24	TO
JET EXIT TEST FACILITY	1234										24	7
16' TRANSONIC TUNNEL	1146										27	22
DRIVE CONTROL BUILDING	1241										27	22
NATIONAL TRANSONIC TUN	1236											8-9
ANECHOIC NOISE FACILITY	1218A											31
HYPERSONIC PROP TEST	1221											31
GAS DYN COMPLEX	1247											31
STRATTON RD SUBSTATION	1233											
TRANSONIC DYN TUNNEL	648											
NATIONAL TRANSONIC TUNNEL	1236											

PM Changes between Oct. 1, 1996 - Sept. 30, 1997

1234	From:	Not scheduled for 1997	
	To:	May 26 - June 6, 1997	
	Building was initially on closed building list		

FACILITY	BLDG. NO.	O	N	D	J	F	M	A	M	J	J	A
1208/1287	From: March 31 - April 11, 1997											
		To: July 28 - August 8, 1997										
		To prepare the Quiet Flow Facility for a critical airframe noise test										
1218A	From:	September 2 - 12, 1997										
		To: November 3 - 20, 1997										
		To minimize research downtime in the Anechoic Noise Research Facility										
1247D	From:	September 2 - 19, 1997										
		To: November 3 - 20, 1997										
		To afford sufficient time to complete testing of a nozzle exhaust system model in the High Speed Researc										
1221		From: September 2 - 19, 1997										
		To: November 3 - 20, 1997										
		To afford sufficient time to complete testing of a nozzle exhaust system model in the High Speed Researc										
582/582A	From:	October 13 - 24, 1997										
		To: September 15 - 26, 1997										
		To resolve conflict with research test requirement priorities										

ATTACHMENT J-C9-24

BACKUP SERVICE AIR PREVENTIVE MAINTENANCE

The following preventive maintenance actions shall be performed weekly on the service air compressor in Building 643 per Subsection C.24, paragraph C.24.g.(2).©2

1. Perform visual inspection.

2. Check oil level, add if required.

3. Report any discrepancies.

ATTACHMENT J-C9-30

SEWAGE PUMPING STATIONS INSPECTION CHECK LIST

Warning do not enter any confined space without full compliance with LaRC safety regulations.

1. Visually inspect pumps and their auxiliary equipment for loose parts & abnormal noises.

2. Check piping systems within immediate area for leakage.

3. Operate float mechanisms to assure proper operation.

4. Activate alarm float and verify reception at alarm panel in bldg. 1215

5. Change the lead-lag orientation in stations with multiple pumps.

6. Lubricate equipment as required.

7. At bldg. 1223 only, check operation of chopper.

8. At bldg.1223 only, verify operation of emergency power transfer switch.

9. Clean area in and around sewage pumping stations.

10. Correct any discrepancies found that are within trouble call limits

11. Document findings and provide a copy of the report to the CO.

ATTACHMENT J-C17-22

COOLING TOWER SYSTEMS CHEMICAL TREATMENT REQUIREMENTS

Below is a listing of facilities with systems that require chemical treatment of cooling tower condenser water, as described in Subsection C.22.i and historical chemical treatment data.

			Water	Betz Chemicals Used Historically (1997)				Storage
Tower	Tons	GPM	Meter	341W (gals)	554 (gals)	362 (LBS)	240 (gals)	Capacity (gals)
582	666	n/a	Y					30 gal
648	333	n/a	Y	70	80			n/a
1146-1	1,033	n/a	Y	18	35		19	30 (554)
1146-2	400	1,200	N	18	40		19	30 (554)
1148	50	150	N	3	30	20		30 (554)
1200	8	n/a	N			20		30 (554)
1202-1	135	n/a	N	10	30		1.5	30 (554)
1202-2	180	n/a	N	10	25		1.5	30 (554)
1205-1	183	300	N		25	25		30 (554)
1205-2	100	600	N		30	20		30 (554)
1205-3	120	n/a	N		15	15		30 (554)
1208-1	63	n/a	N	8	18		1.5	30 (554)
1208-2	63	n/a	N	10		10		30 (554)
1209	183	n/a	N	25		30		30 (554)
1212-C	166	n/a	Y	10	20	10	1.5	30 (554)
1215	183	n/a	Y	18	40			30 (554)
1230-1	600	2,400	Y	19	45		2	30 (554)
1230-2	32	n/a	N		12	10		30 (554)
1232	183	n/a	Y	22	35		2	n/a
1236	3,400	10,000	Y	50	65	30		30 (554)
1238-1	125	n/a	Y	15	35		2	30 (554)
1244	141	n/a	N		30	30		30g
1247-C	5,400	16,600	Y	75	90		3	347W-125g & 554-125g
1247-E-1	1,375	n/a	Y	25	55		3	30g (554)
1247-E-2	1,000	n/a	Y	30	65		2.5	30g (554)
1250	700	n/a	Y	20	40			30g
1251	6,700	n/a	Y	125	200			347W-200g & 554-200g
1258	20	n/a	N					n/a
1267	1,300	4,000	N					n/a
1267-A	170	n/a	N		15	25		30g (554)
1268	1,800	4,200	Y	100	185		10	347W-125g & 554-200g
1268-B	1,000	n/a	N					30g (554)
1268-C1	500	n/a	N			10		30g (554)
1268-C2	500	n/a	N			10		30g (554)
1293-A	500	n/a	Y	20	35		2g	30g (554)
1293-B	670	1,800	Y		25	30		30g (554)
1293-C	190	n/a	Y		20	20		30g (554)
Totals				**701**	**1340**	**315**	**70.5**	

Towers: 646, 647-1, 1159, and 1267-B have been treated twice a year with a can of EASY TREAT. Towers: 1232-2 and 1284 are not in use at this time. Tower 1267-X is a back-up for 1265 and has been checked monthly, tower 1238-2 receives no treatment, tower 1161 is in use temporarily and has been checked monthly, and tower 1295 has been treated with antifreeze only with no other chemical treatment.
The following historical information is proviced for information purposes only:
There is generally a 6 month supply of chemicals on hand. The CDC containers are owned by Betz Entec

ATTACHMENT J-C18-22A

CLOSED LOOP SYSTEMS CHEMICAL TREATMENT REQUIREMENTS

This Attachment provides a listing of facilities with chilled water systems and hot water systems that require chemical treatment. The Contractor shall provide treatment services in accordance with Subsection C.22.j.

Building / System		Chemical Used	Location in Facility
582	Hot Water System	Betz Dearborn 556	Equipment Room 105, Catwalk
647	Hot Water System	Betz Dearborn 556	Outside Equipment Room
648	Chill Water System-1	Betz Dearborn 556	Equipment Room 11
648	Chill Water System-2	Betz Dearborn 556	Outside Equipment Room
648	Hot Water System	Betz Dearborn 556	Equipment Room 107
1145	Hot Water System	Betz Dearborn 556	Outside Equipment Room
1145	Chill Water System	Betz Dearborn 556	Outside Equipment Room
1146	Chill Water System-1	Betz Dearborn 556	Equipment Room 107
1146	Chill Water System-2	Betz Dearborn 556	Equipment Room 107
1146	Chill Water System-3	Betz Dearborn 556	Equipment Room 118
1146	Hot Water System-1	Betz Dearborn 556	Equipment Room 107
1146	Hot Water System-2	Betz Dearborn 556	Equipment Room 107
1148	Hot Water System-1	Betz Dearborn 556	Attic, Chemical Feeder Is In Room 104
1148	Hot Water System-2	Betz Dearborn 556	Attic, Equipment Platform
1148	Hot Water System-3	Betz Dearborn 556	Attic, Equipment Platform
1148	Hot Water System-4	Betz Dearborn 556	Attic, Equipment Platform
1149	Hot Water System	Betz Dearborn 556	Equipment Room 112
1152	Chill Water System	Betz Dearborn 556	Equipment Room 109
1152	Chill Water System-GI	Glycol	Equipment Room 109
1152	Chill Water System-G2	Glycol	Equipment Room 109
1152	Hot Water System	Betz Dearborn 556	Equipment Room 109
1153	Hot Water System	Betz Dearborn 556	Basement Under Room 101
1154	Hot Water System	Betz Dearborn 556	Equipment Room 100
1168	Chill Water System	Betz Dearborn 556	Outside Equipment Room
1168	Hot Water System	Betz Dearborn 556	Outside Equipment Room
1192	Hot Water System	Betz Dearborn 556	Equipment Room 110
1192C	Hot Water System	Betz Dearborn 556	Balcony Above Room C187
1194	Chill Water System	Betz Dearborn 556	Equipment Room 126
1194	Hot Water System	Betz Dearborn 556	Outside Equipment Room
1195	Hot Water System	Betz Dearborn 556	Equipment Room 112
1195	Chill Water System	Betz Dearborn 556	Equipment Room 112
1195A	Chill Water System	Betz Dearborn 556	Outside Equipment Room
1199	Chill Water System	Betz Dearborn 556	Room 113
1200	Hot Water System-1	Betz Dearborn 556	Equipment Room 107
1200	Hot Water System-2	Betz Dearborn 556	Equipment Room 107
1201	Hot Water System	Betz Dearborn 556	Basement From Room 115-C

1202	Chill Water System-1	Betz Dearborn 556	Equipment Room 119
1202	Chill Water System-2	Betz Dearborn 556	Equipment Room 119
1202	Chill Water System-3	Betz Dearborn 556	Equipment Room Above Room 136
1202	Hot Water System	Betz Dearborn 556	Equipment Room 119
1205	Chill Water System	Betz Dearborn 556	Equipment Room 216
1205	Hot Water System-1	Betz Dearborn 556	Equipment Room 216
1205	Hot Water System-2	Betz Dearborn 556	Equipment Room 216
1205	Research System	Betz Dearborn 556	Equipment Room 216
1205A	Chill Water System	Betz Dearborn 556	Equipment Room 156
1205A	Hot Water System	Betz Dearborn 556	Equipment Room 156
1205A	Research System-ISP	Betz Entec 338	Laboratory Room 159
1205A	Research System	Betz Dearborn 556	Equipment Room 156
1208	Chill Water System	Betz Dearborn 556	Equip. Room 154 Chem. Feeder In Basement Room 10
1208	Hot Water System-1	Betz Dearborn 556	Balcony Room 229
1208	Hot Water System-2	Betz Dearborn 556	Basement Room 03
1208	Hot Water System-3	Betz Dearborn 556	Basement Room 10
1209	Chill Water System	Betz Dearborn 556	Equipment Room 202
1209	Hot Water System	Betz Dearborn 556	Equipment Room 202
1212B	Chill Water System-1	Betz Dearborn 556	Equipment Room 137
1212B	Chill Water System-2	Betz Dearborn 556	Equipment Room 137
1212B	Hot Water System	Betz Dearborn 556	Equipment Room 137
1212C	Chill Water System-1	Betz Dearborn 556	Equipment Room 105
1212C	Chill Water System-3	Betz Dearborn 556	Equipment Room 301
1212C	Hot Water System	Betz Dearborn 556	Equipment Room 301
1212C	Portable Chiller	Glycol	Primary Room 108
1215	Chill Water System	Betz Dearborn 556	Main Boiler Room 106
1215	Hot Water System	Betz Dearborn 556	Main Boiler Room 106
1216	Hot Water System-1	Betz Dearborn 556	Outside Equipment Room
1216	Hot Water System-2	Betz Dearborn 556	Outside Equipment Room
1219	Hot Water System-1	Betz Dearborn 556	Equipment Room 105
1219	Hot Water System-2	Betz Dearborn 556	Equipment Room 105
1220	Chill Water System-1	Betz Dearborn 556	Balcony, 3rd Floor, Sample Outside
1220	Chill Water System-2	Betz Dearborn 556	Equipment Room 131
1220	Hot Water System-1	Betz Dearborn 556	Equipment Room 109B
1220	Hot Water System-2	Betz Dearborn 556	Equipment Room 109B
1220	Hot Water System-3	Betz Dearborn 556	Equipment Room 109B
1221	Research System	Betz Dearborn 556	Room 116
1221	Hot Water System	Betz Dearborn 556	Equipment Room 123
1222	Chill Water System	Betz Dearborn 556	Equipment Room 111
1222	Hot Water System	Betz Dearborn 556	Equipment Room 111
1229	Chill Water System	Betz Dearborn 556	Equipment Room 127
1229	Hot Water System	Betz Dearborn 556	Equipment Room 127
1230	Chill Water System	Betz Dearborn 556	Basement Room 11
1230	Hot Water System	Betz Dearborn 556	Basement Room 11
1230A	Chill Water System	Betz Dearborn 556	Room 153
1230B	Hot Water System	Betz Dearborn 556	Equipment Room 191
1230B	Chill Water System	Betz Dearborn 556	Equipment Room 191
1232	Hot Water System	Betz Dearborn 556	Basement Room 10
1232	Chill Water System-1	Betz Dearborn 556	Basement Room 10
1232	Chill Water System-2	Betz Dearborn 556	Basement Room 10
1232A	Hot Water System	Betz Dearborn 556	Balcony From Room 205

1232B	Hot Water System	Betz Dearborn 556	Basement Room 10
1232B	Chill Water System	Betz Dearborn 556	Outside Equipment Room 144
1236	Chill Water System-1	Betz Dearborn 556	Outside
1236	Chill Water System-2	Betz Dearborn 556	Outside
1236	Hot Water System-1	Betz Dearborn 556	Basement Room 16
1236	Hot Water System-2	Betz Dearborn 556	Basement Room 16
1236C	Hot Water System	Betz Dearborn 556	Room 100
1238	Chill Water System	Betz Dearborn 556	Equipment Room 135
1244	Chill Water System-1	Betz Dearborn 556	Basement Room 10
1244	Chill Water System-2	Betz Dearborn 556	Basement Room 10
1244	Hot Water System-1	Betz Dearborn 556	Catwalk Above Room 141
1244	Hot Water System-2	Betz Dearborn 556	Catwalk Above Room 141
1244	Hot Water System-3	Betz Dearborn 556	Catwalk Above Room 141
1244	Hot Water System-4	Betz Dearborn 556	Catwalk Above Room 141
1244	Hot Water System-5	Betz Dearborn 556	Catwalk Above Room 141
1244	Hot Water System-6	Betz Dearborn 556	Catwalk Above Room 141
1244	Hot Water System-7	Betz Dearborn 556	Basement Room 10
1247A	Hot Water System	Betz Dearborn 556	Basement Room A10
1247D	Research System	Betz Dearborn 556	Basement Room D12
1247E	Compressor#'s 1,2,3	Betz Dearborn 556	Basement Room 10
1247E	Compressor #4	Betz Dearborn 556	Basement Room 12
1247E	Compressor #5	Betz Dearborn 556	Basement Room 12
1247E	Compressor #6	Betz Dearborn 556	Basement Room 13
1250	Chill Water System-1	Betz Dearborn 556	Equipment Room 109
1250	Chill Water System-2	Betz Dearborn 556	Room 180
1250	Hot Water System	Betz Dearborn 556	Equipment Room 109
1251	Chill Water System-1	Betz Dearborn 556	Equipment Room 118
1251	Chill Water System-2	Betz Dearborn 556	3rd Floor Balcony
1251	Hot Water System	Betz Dearborn 556	Equipment Room 118
1262	Chill Water System	Betz Dearborn 556	Balcony Above Room 101
1265	Chill Water System	Betz Dearborn 556	Equipment Room 110A
1265	Hot Water System	Betz Dearborn 556	Equipment Room 110A
1267	Chill Water System	Betz Dearborn 556	Equipment Room 115
1267	Hot Water System	Betz Dearborn 556	Equipment Room 115
1268A	Chill Water System	Betz Dearborn 556	Basement Room 50
1268A	Hot Water System	Betz Dearborn 556	Basement Room 50
1268	Chill Water System	Betz Dearborn 556	Basement Room 114
1268	Hot Water System	Betz Dearborn 556	Basement Room 114
1268B	Chill Water System	Betz Dearborn 556	Basement Room 1205
1268B	Hot Water System-1	Betz Dearborn 556	Basement Room 1205
1268B	Hot Water System-2	Betz Dearborn 556	Basement Room 1205
1268C	Chill Water System	Betz Dearborn 556	Equipment Room 1303
1268C	Hot Water System	Betz Dearborn 556	Equipment Room 1303
1271	Hot Water System	Betz Dearborn 556	Outside Equipment Room 100
1275	Research System	Betz Entec 436	Room 110
1283	Chill Water System	Betz Dearborn 556	Outside Equipment Room 118
1292	Hot Water System	Betz Dearborn 556	Room 106, Chemical Feeder in Bldg. 1206, Outside Equipment Room
1293A	Chill Water System	Betz Dearborn 556	Basement Room 10
1293B	Hot Water System-1	Betz Dearborn 556	Equipment Room 211-A
1293B	Hot Water System-2	Betz Dearborn 556	Equipment Room 300
1293C	Chill Water System	Betz Dearborn 556	Equipment Room 146

1293C	Hot Water System	Betz Dearborn 556	Equipment Room 146
1297	Chill Water System-1	Betz Dearborn 556	Equipment Room 109
1297	Chill Water System-2	Betz Dearborn 556	Equipment Room 109
1297	Hot Water System	Betz Dearborn 556	Equipment Room 109
1298	Hot Water System	Betz Dearborn 556	Basement Room 10
1299	Chill Water System	Betz Dearborn 556	Room 146
1299	Hot Water System	Betz Dearborn 556	Room 146
1299F	Chill Water System G-1	Glycol	Outside
1299F	Chill Water System G-2	Glycol	Outside
1299F	Chill Water System-3	Betz Dearborn 556	Outside
1300	Hot Water System	Betz Dearborn 556	Basement Room 11

Annual Chemical Use:

1995 CY	Betz Entec 556	302 Gallons
1996 CY	Betz Entec 556	265 Gallons

ATTACHMENT J-C19-17

PAINT SCHEDULE AND REQUIREMENTS FOR ARCHITECTURAL PAINTING AND CORROSION CONTROL AND COATING SERVICES

Paint specifications for preparation, materials and application are included in SPECSINTACT, Division 09 – Finishes, Sections 09901, 09960, 09970. The following schedule is for general guidance only. Specific project needs/applications, especially for high performance and steel coatings should be guided by the applicable sections in SPECSINTACT and the standards of the Steel Structures Painting Council (SSPC), as applicable. This schedule includes most of the painting applications used at Langley including corrosion control and/or high performance coatings (C.17), architectural (C.21), preservation (C.21), spot, touch-up incidental to repair (various C-subsections, and traffic (C.27) painting. The Contracting Officer will specify the colors for finish coats from Federal Standard 595. Paint shall be delivered to the job site in original, unopened containers bearing the manufacturer's name, brand designation, and instructions for application. Thinners shall be used only when mandatory for the type of paint being used and with prior approval of the Contracting Officer.

PAINTING SCHEDULE

Surface	Spot Prime	First Coat	Second Coat
Exterior Wood Work	Latex Primer	Exterior Acrylic Latex	Exterior Acrylic Latex
Exterior Ferrous	Ext. Acrylic Hi Gloss	Ext. Acrylic Hi Gloss	Ext. Acrylic Hi Gloss
Ext. Structural Steel	Ext. "Direct To Metal" (DTM) Acrylic	Ext. "DTM" Acrylic	Ext. "DTM" Acrylic
Ext. Galvanized	Galvanized Primer	Ext. "DTM" Acrylic	Ext. "DTM" Acrylic
Int. Ferrous Metal	Ext. "DTM" Acrylic	Ext. "DTM" Acrylic	Ext. "DTM" Acrylic
Int. Ceilings and Walls, Flat Finish	Interior Flat Latex	Interior Flat Latex	Interior Flat Latex
Int. Ceilings and Walls, Gloss Finish	Interior "DTM" Acrylic	Interior "DTM" Acrylic	Interior "DTM" Acrylic
Interior Trim	Interior Latex Primer	Int. "DTM" Acrylic	Int. "DTM" Acrylic
Interior Wood , Clear Finish	Water-Based Polyurethane	Water-Based Polyurethane	Water-Based Polyurethane
Miscellaneous	Miscellaneous surfaces requiring re-coating, not otherwise covered herein, shall be painted with water based paints only. No solvent materials will be used. All will be approved by the Contracting Officer.		

Paint products that meet NASA's performance specifications are manufactured by Pittsburgh Paints,Sherwin-Williams and Glidden (See SPECSINTACT Section 09901 – Painting –). Note that NASA follows the specifications and standards of the Steel Structures Painting Council (SSPC) for coating exposed structural steel. Miscellaneous surfaces requiring re-coating, not otherwise covered herein, shall be painted or otherwise treated in accordance with the best current practice and manufacturer recommendations, subject to the approval of the Contracting Officer. See SPECSINTACT Division 09, Section 09960, for High Performance Coatings concerning Heat-Resistant, Epoxy, Polyurethane and Chlorinated-Rubber Coatings.

SANDBLASTING, CONTAINMENT SYSTEMS AND LEAD PAINT REMOVAL Instructions for removing lead paint are provided in SSPC – Guide 61 (CON) and SSPC – Guide 71 (DIS). Langley also follows the Industrial Lead Paint Removal Handbook, 2nd Edition, by K. A. Trimber, which covers such subjects as lead paint removal, containment systems and disposal of hazardous waste.

ATTACHMENT J-C27-15A

GENERAL DESCRIPTION OF ENERGY MANAGEMENT AND CONTROL SYSTEM

A. GENERAL DESCRIPTION OF MANAGEMENT AND CONTROL SYSTEM.

The primary EMCS function is to efficiently control HVAC, lighting, and other energy consuming equipment. The Contractor utilizing the EMCS is responsible for monitoring and reporting the energy consumption of LaRC and the Langley Air Force Base. The EMCS consists of host console computers that have the ability to provide a manned interface for monitoring and controlling remote systems through an integrated network control system. The EMCS controls the HVAC loads in 103 buildings and 104 trailers by direct digital control, radio switches, and infoscan, it monitors 235 electrical meters for energy consumption, controls the operation of 150 hot water heaters, and controls interior lights in two (2) buildings.

B. SUMMARY OF HVAC LOADS CONTROLLED BY THE EMCS UTILIZING VARIOUS CONTROL SYSTEMS

SYSTEM	FACILITIES	TOTAL SQ./FT.
INFOSCAN	18 BLDG.'S	961,318
RADIO	55 BLDG.'S 104 TRAILERS	398,285
DDC	30 BLDG.'S	262,173

TOTAL SQ. FT. MONITORED AND/OR CONTROLLED 1,621,776 SQ./FT.

TOTAL SQ. FT. MISSION AND NON-MISSION VARIABLE BLDG.'S LaRC.3,346,234 SQ. FT.

TOTAL A/C TONNAGE ON THE EMCS SYSTEMS

SYSTEM	A/C TONNAGE
INFOSCAN	2700
RADIO	812
DDC	617
TOTAL A/C TONNAGE	4129

BLDG.'S WITH DDC CONTROLS.
1232, 1216, 1250, 1162, 1168, 1208, 1213, 1205, 1192E, 1195, 1214, 1220, 1221, 1145, 1209, 648.

HOT WATER HEATERS CONTROLLED BY RADIO SWITCHES.
63 HOT WATER HEATERS-TOTAL ELECTRICAL LOAD 362,564 WATTS.

TYPES OF LOADS CONTROLLED BY ALL SYSTEMS.
AIRHANDLERS, DX UNITS, CHILLERS, PUMPS, LIGHTS

C. Direct Digitally Controlled Facilities

Control System	Facilities Controlled	Facility Number	Approx. Sq. Ft. Controlled	Tonnage of Air Conditioning *
Barber Colman	1	1216	10,000	36
Robertshaw	2	1205	60,000	214
		1209	64,000	228
Trane	9	1232	23,000	82
		1162	3,000	11
		1250	68,000	243
		1206	6,500	23
		1213	25,000	89
		1251	2,000	7
		1208	4,500	16
		1216	10,000	36
		1168	10,000	36
Enviro-Tec.	1	1205	6,400	23
Carrier/Parker	7	648	34,000	121
		1221	4,000	14
		1192E	10,000	36
		1145	4,000	14
		1220	2,000	7
		1214	5,000	18
Infoscan	17	1148	39,000	140
		1202	89,000	317
		1205	60,000	214
		1208	25,000	89
		1212	57,600	206
		1220	35,000	125
		1221	86,000	307
		1229	40,000	143
		1230	77,000	275
		1232	28,000	100
		1238	53,000	189
		1244	80,000	286
		1250	68,000	243
		1251	128,000	457
		1267	31,000	110
		1293	67,000	239
		1299	44,000	157

* Based on Avg. Cooling Load of 280 Sq. Ft./Ton.

D. Radio Switch Controlled System

Control System	Facilities Controlled	Controlled Sq. Ft.	Tonnage of Air Conditioning
Scientific Atlanta	111 Office Bldgs	1,053,000	3,761
	81 Trailers	53,900	243
	150 HW Heaters		

E. RADIO SWITCH LOCATIONS

BLDG. NO,	Add.	Message	Switch Location	Load	Comments
1237T	158	(19-6)	On unit	Heat Pump	Formally 1270T
1237T	206	(25-6)	On unit	Heat Pump	Formally 1293T
0582A	261	SA-205 Format	Courtyard	A/C	Split System
0582A	262	SA-205 Format	Courtyard	A/C	Split System
0582A	97	(12-1)	Mens' Rm.114	HWH	
0582A	97	(12-1)	Womens' Rm.113	HWH	
0583A	282	SA-205 Format	R-101	A/C	Located in "A" section of 583
0640	97	(12-1)	R-101	HWH	Beside sink&roll-up garage door
0640	97	(12-1)	Mezz.	HWH	2nd floor/Access from stairwell
0641	97	SA-205 Format	R-213	HWH	Between Mens & Ladies toilets (closet)
0641	97	(12-1)	R-117	HWH	
0643	97	SA-205 Format	R-101	HWH	
0643	97	(12-1)	R-123A	HWH	
0643	277	SA-205 Format	R-101	A/C	Repaired 1996
0643	278	SA-205 Format	R-101	A/C	Repaired 1996
0643	283	SA-205 Format	R-113	A/C	Inside closet
0643	284	SA-205 Format	R-104	A/C	Inside closet
0643	285	SA-205 Format	R-110	A/C	Inside closet
0645A	97	SA-205 Format	Mens' Rm.401	HWH	
0646	97	(12-1)	R-107	HWH	Key from personnel in room 209
0648	97	(12-1)	R-107	HWH	
0720	97	SA-205 Format	R-112	HWH	Repaired 1996
0720	279	SA-205 Format	R-123	A/C	Split system
0720A	280	SA-205 Format	R-101	A/C	Locked-Key from Mr. Don Ruth-43562
0720B	281	SA-205 Format	R-105	A/C	Split system
1130T-1	226	(28-2)	On unit	Heat Pump	
1130T-1	226	(28-2)	On unit	Heat Pump	
1130T-1	224	(28-0)	On unit	Heat Pump	
1130T-1	224	(28-0)	On unit	Heat Pump	
1130T-2	226	(28-2)	On unit	Heat Pump	
1130T-2	226	(28-2)	On unit	Heat Pump	
1130T-2	226	(28-2)	On unit	Heat Pump	
1130T-2	226	(28-2)	On unit	Heat Pump	
1130T-3	226	(28-2)	On unit	Heat Pump	
1130T-3	226	(28-2)	On unit	Heat Pump	
1145T	221	(27-5)	On unit	Heat Pump	

BLDG. NO,	Add.	Message	Switch Location	Load	Comments
1145T	221	(27-5)	On unit	Heat Pump	
1145T	221	(27-5)	On unit	Heat Pump	
1145T	97	SA-205 Format	Mens' Rm.107	HWH	
1162A	15	(01-7)	Roof	A/C	
1162T	144	(18-0)	On unit	Heat Pump	
1162T	144	(18-0)	On unit	Heat Pump	
1162T	144	(18-0)	On unit	Heat Pump	
1163T	97	SA-205 Format	R-107	HWH	Womens' restroom
1163T	163	(20-3)	On unit	Heat Pump	
1163T	164	(20-4)	On unit	Heat Pump	
1163T	165	(20-5)	On unit	Heat Pump	
1192C	22	(02-6)	Roof	A/C	
1192C	170	(21-2)	On unit	A/C	Split system
1192C	97	(12-1)	Mezz. (C-187)	HWH	
1192D	23	(02-7)	Roof	A/C	Package rooftop unit
1192D	24	(03-0)	Roof-inside unit	A/C	
1192D	25	(03-1)	Roof-inside unit	A/C	
1192E	169	(21-1)	On wall	A/C	Split system
1192E	297	669580	rms 101-190E	carrier	
1194A	132	(16-4)	R-103	A/C	Split system-Mechanical room
1194A	132	(16-4)	Inside unit	A/C	
1195A	63	(07-7)	On unit	Chiller	Repaired 1996
1195A	97	(12-1)	R-112	HWH	
1195B	64	(08-0)	On unit	A/C	
1195B	97	(12-1)	Mens' Rm.-226	HWH	
1195C	64	(08-0)	R-146	A/C	Split system
1195C	64	(08-0)	R-146	A/C	Split system
1206T	173	(21-5)	On unit	Heat Pump	Repaired 1996
1206T	174	(21-6)	On unit	Heat Pump	Repaired 1996
1206T	175	(21-7)	On unit	Heat Pump	Repaired 1996
1208A	97	SA-205 Format	R-118 M.E.	HWH	
1208A	139	(17-3)	Mech. Rm.	A/C	Removed
1209T-2	97	SA-205 Format	Mens' Rm.111	HWH	
1209T-2	108	(13-4)	On unit	Heat Pump	
1209T-2	108	(13-4)	On unit	Heat Pump	
1209T-2	108	(13-4)	On unit	Heat Pump	
1209T-2	108	(13-4)	On unit	Heat Pump	
1209T-3	194	(24-2)	On unit	Heat Pump	
1209T-3	194	(24-2)	On unit	Heat Pump	
1209T-4	97	SA-205 Format	Closet	HWH	Repaired 1996
1209T-4	220	(27-4)	On unit	Heat Pump	
1209T-5	97	SA-205 Format	R-301	HWH	Closet
1209T-5	150	(18-6)	On unit	Heat Pump	
1209T-6	97	SA-205 Format	R-307	HWH	Inside closet
1209T-6	149	(18-5)	On unit	Heat Pump	
1209T-7	147	(18-3)	On unit	Heat Pump	
1209T-8	97	SA-205 Format	Restroom	HWH	
1209T-8	223	(27-7)	On unit	Heat Pump	

1209T-8	223	(27-7)	On unit	Heat Pump	
BLDG. NO.	**Add.**	**Message**	**Switch Location**	**Load**	**Comments**
1209T-8	223	(27-7)	On unit	Heat Pump	
1209T-8	223	(27-7)	On unit	Heat Pump	
1212C	90	(11-2)	Roof	AHU	Removed
1212C	91	(11-3)	R-301	AHU	Third floor equpt. rm.
1212C	92	(11-4)	R-301	AHU	Third floor equpt. rm.
1212C	97	SA-205 Format	Womens' Rm.102	HWH	
1216T	15	(01-7)	O.S. On unit	Heat Pump	No schedule
1216T	15	(01-7)	O.S. On unit	Heat Pump	No schedule
1218A	77	(09-5)	R-204	A/C	Repaired 1996
1221A	97	SA-205 Format	R-128	HWH	
1221A	202	(25-2)	R-207	A/C	Above JC Pnl
1221B	97	SA-205 Format	R-118	HWH	
1221B	97	SA-205 Format	R-122	HWH	Underneath steps
1221B	259	SA-205 Format	R-127-Mezz.	A/C	Removed
1221B	260	SA-205 Format	R-116	Heat pump	
1221B	259	SA-205 Format	Mezz.	A/C	
1221C	203	(25-3)	R-123	A/C	Large shop unit
1221C	97	(12-1)	R-123	HWH	Beside counter sink-2 Heaters in here?
1221C	97	SA-205 Format	R-123B	HWH	
1221C	97	(12-1)	R-205	HWH	Above sink
1221C	258	SA-205 Format	R-123 Mezz.	A/C	
1221D	106	(13-2)	R-126 Test cell #1	A/C	Repaired 1996
1221D	106	(13-2)	R-124 Test cell #2	A/C	
1222B	182	(22-6)	On unit	A/C	Inoperative-Trane unit
1222B	182	(22-6)	On unit	A/C	Small split system
1222B	182	(22-6)	On unit	A/C	Small split system
1222B	295	669531	gym	mitsubishi	
1222B	296	669531	gym	mitsubishi	
1224T	97	SA-205 Format	Mens' Rm.	HWH	Repaired 1996
1224T	97	SA-205 Format	Womens' Rm.	HWH	Repaired 1996
1224T-1	114	(14-2)	On unit	Heat Pump	
1224T-1	115	(14-3)	On unit	Heat Pump	
1224T-10	101	(12-5)	On unit	Heat Pump	
1224T-10	101	(12-5)	On unit	Heat Pump	
1224T-11	101	(12-5)	On unit	Heat Pump	
1224T-11	101	(12-5)	On unit	Heat Pump	
1224T-12	129	(16-1)	On unit	Heat Pump	
1224T-12	129	(16-1)	On unit	Heat Pump	
1224T-3	116	(14-4)	On unit	Heat Pump	
1224T-7	121	(15-1)	On unit	Heat Pump	
1224T-7	122	(15-2)	On unit	Heat Pump	
1224T-7	123	(15-3)	On unit	Heat Pump	
1224T-7	124	(15-4)	On unit	Heat Pump	
1224T-8	125	(15-5)	On unit	Heat Pump	
1224T-8	126	(15-6)	On unit	Heat Pump	
1224T-8	127	(15-7)	On unit	Heat Pump	
1224T-8	128	(16-0)	On unit	Heat Pump	
1224T-9	101	(12-5)	On unit	Heat Pump	

1224T-9	101	(12-5)	On unit	Heat Pump	
BLDG. NO,	**Add.**	**Message**	**Switch Location**	**Load**	**Comments**
1229A	97	SA-205 Format	R-103	HWH	Repaired 1996
1230B	136	(17-0)	Inside unit	Chiller	Inoperative-Carded
1230B	185	(23-1)	R-191 Above JC Pnl.	AHU	
1231B	97	SA-205 Format	R-104	HWH	
1231B	184	(23-0)	On unit	A/C	Repaired 1996
1231T	112	(14-0)	On unit	Heat Pump	Formally 1148T
1231T	113	(14-1)	On unit	Heat Pump	Formally 1148T
1232A	97	SA-205 Format	Closet Rm.-116H	HWH	Between Rms.107 & 109
1232A	97	SA-205 Format	R-144	HWH	Pump Rm.-Locked-Key from Mr. Soule'
1232A	97	SA-205 Format	R-245	HWH	Repaired-Break room
1232A	97	(12-1)	R-130	HWH	Mark the position in the PM book
1232T	61	(07-5)	On unit	Heat Pump	Formally 1192T
1232T	62	(07-6)	On unit	Heat Pump	Formally 1192T
1232T	80	(10-0)	On unit	Heat Pump	Formally 1192T
1232T-3	138	(17-2)	On unit	Heat Pump	
1232T-3	138	(17-2)	On unit	Heat Pump	
1232T-3	138	(17-2)	On unit	Heat Pump	
1232T-3	138	(17-2)	On unit	Heat Pump	
1232T-4	142	(17-5)	On unit	Heat Pump	In rocket-test scrap yard
1236C	97	(12-1)	Shop-Rm.100	HWH	
1237A	4	(00-4)	On unit	A/C	
1237A	5	(00-5)	R-115	A/C	
1237A	97	(12-1)	R-111 Mezz.	HWH	Above Rm.112
1237B	2	(00-2)	On unit	A/C	Repaired-Package unit
1237B	97	SA-205 Format	Mens' Rm.-100A	HWH	
1237C	3	(00-3)	O.S. On wall	A/C	Locked-Call security dispatcher #45500
1237T	167	(20-7)	On unit	Heat Pump	Formally 1192T
1237T	168	(21-0)	In J-box on wall	Heat Pump	Formally 1192T
1237T	205	(25-5)	On unit	Heat Pump	Formally 1229T
1237T	97	SA-205 Format	Mens' Rm.	HWH	Repaired 1996
1237T-1	130	(16-2)	On unit	Heat Pump	Repaired-End unit
1237T-1	130	(16-2)	On unit	Heat Pump	
1237T-1	130	(16-2)	On unit	Heat Pump	
1237T-1	130	(16-2)	On unit	Heat Pump	
1237T-1	134	(16-6)	On unit	Heat Pump	Repaired-Unit near center walkway
1237T-1	134	(16-6)	On unit	Heat Pump	
1237T-1	134	(16-6)	On unit	Heat Pump	
1237T-1	134	(16-6)	On unit	Heat Pump	
1237T-2	208	(26-0)	On unit	Heat Pump	Mark the position in the PM book
1237T-2	208	(26-0)	On unit	Heat Pump	Mark the position in the PM book
1237T-2	210	(26-2)	On unit	Heat Pump	Mark the position in the PM book
1237T-2	210	(26-2)	On unit	Heat Pump	Mark the position in the PM book
1238A	97	(12-1)	R-135 M.E.	HWH	
1238B	187	(23-3)	Inside control box	A/C	Switch controls two units
1244D	97	SA-205 Format	R-148	HWH	Repaired 1996
1244D	97	SA-205 Format	R-146	HWH	Repaired 1996
1244T	269	476000	T-5	bard	
1244T-2	213	(26-5)	On unit	Heat Pump	

BLDG. NO,	Add.	Message	Switch Location	Load	Comments
1244T-2	97	(12-1)	Closet	HWH	
1244T-3	97	(12-1)	Mens' Rm.	HWH	
1244T-4	213	(26-5)	On unit	Heat Pump	
1244T-4	213	(26-5)	On unit	Heat Pump	
1244T-4	97	SA-205 Format	Restroom	HWH	
1244T-5	269	SA-205 Format	On unit	Heat Pump	
1244T-5	269	SA-205 Format	On unit	Heat Pump	Only one heat pump?
1247A	39	(04-7)	Basement	AHU	Must be kept in local
1247B	41	(05-1)	Small Penthouse	A/C	Repaired 1996
1247B	42	(05-2)	Small Penthouse	A/C	
1247B	79	(09-7)	Large Penthouse-B	A/C	
1247B	82	(10-2)	Large Penthouse-B	A/C	Repaired 1996
1247B	83	(10-3)	Large Penthouse-B	A/C	Repaired 1996
1247B	85	(10-5)	Large Penthouse-B	A/C	Repaired 1996
1247B	97	(12-1)	Basement	HWH	Near hydraulic fluid drums
1247D	65	(08-1)	Large Penthouse-D	A/C	Repaired 1996
1247D	66	(08-2)	Large Penthouse-D	A/C	Repaired 1996
1247D	67	(08-3)	Large Penthouse-D	A/C	Repaired 1996
1247D	68	(08-4)	Large Penthouse-D	A/C	
1247D	69	(08-5)	Large Penthouse-D	A/C	Repaired 1996
1247D	70	(08-6)	Large Penthouse-D	A/C	
1247D	71	(08-7)	Large Penthouse-D	A/C	Repaired 1996
1247D	72	(09-0)	Large Penthouse-D	A/C	Repaired 1996
1247D	73	(09-1)	Large Penthouse-D	A/C	Repaired 1996
1247D	74	(09-2)	D-123	A/C	2nd floor
1247D	191	(23-7)	Inside unit	A/C	Repaired 1996
1247D	225	(28-1)	D-114	A/C	Removed
1247D	227	(28-3)	On unit	A/C	Unit is ground mounted
1247G	97	(12-1)	R-104	HWH	
1248T	142	(17-6)	On unit	Heat Pump	
1250A	97	SA-205 Format	R-106	HWH	
1250T-A	100	(12-4)	On unit	Heat Pump	
1250T-A	100	(12-4)	On unit	Heat Pump	
1250T-A	100	(12-4)	On unit	Heat Pump	
1250T-A	100	(12-4)	On unit	Heat Pump	
1250T-A	97	SA-205 Format	Mens Rm.410	HWH	
1250T-B	104	(13-0)	On unit	Heat Pump	
1250T-B	104	(13-0)	On unit	Heat Pump	
1250T-B	104	(13-0)	On unit	Heat Pump	
1250T-B	97	(12-1)	Womens Rm.	HWH	
1250T-C	107	(13-3)	On unit	Heat Pump	Repaired 1996
1250T-C	97	(12-1)	Restroom	HWH	Removed
1250T-D	97	SA-205 Format	Womens' Rm-608	HWH	
1250T-D	217	(27-1)	On unit	Heat Pump	
1250T-D	217	(27-1)	On unit	Heat Pump	
1250T-E	215	(26-7)	On unit	Heat Pump	Repaired 1996
1250T-E	215	(26-7)	On unit	Heat Pump	
1250T-E	97	SA-205 Format	Mens' Rm-500	HWH	
1251A	97	SA-205 Format	Compressor Rm.136	HWH	

1251A	97	SA-205 Format	Compressor Rm.136	HWH	
BLDG. NO,	**Add.**	**Message**	**Switch Location**	**Load**	**Comments**
1256T	38	(04-6)	On unit	Heat Pump	Trailer Removed
1265T	103	(12-7)	On unit	Heat Pump	
1265T	103	(12-7)	On unit	Heat Pump	
1267A	195	(24-3)	On unit	A/C	Repaired 1996
1267A	196	(24-4)	Roof	A/C	Locked-Key from Rm.136 Mr. Bennet
1267A	97	SA-205 Format	R-134 Mezz.	HWH	
1267A	97	(12-1)	R-130 Mezz.	HWH	
1270A	97	(12-1)	R-103A	HWH	
1270T	97	SA-205 Format	Restroom	HWH	
1271T-Conex	274	SA-205 Format	On unit	Heat Pump	
1273T-Conex	272	SA-205 Format	On unit	Heat Pump	
1273T-Conex	272	SA-205 Format	On unit	Heat Pump	
1284A	199	(24-7)	R-112	A/C	Locked-Call security dispatcher #45500
1284B	52	(06-4)	R-118	A/C	
1284B	97	(12-1)	R-115	HWH	Repaired 1996
1284C	197	(24-5)	R-104	A/C	Locked-Call security dispatcher #45500
1284C	97	(12-1)	R-104	HWH	Locked-Call security dispatcher #45500
1297A	189	(23-5)	On unit	A/C	On mezz.
1297A	29	(03-5)	R-109	A/C	Inside Honeywell Panel
1297E	219	(27-3)	On unit	Heat Pump	Locked gate-Key from 1297A
1298T-200	159	(19-7)	On unit	Heat Pump	
1298T-300	179	(22-3)	On unit	Heat Pump	
1298T-400	180	(22-4)	On unit	Heat Pump	
1299F	97	(12-1)	Mech. Rm.103	HWH	Locked-Key from Mr. Langford #41846
1299F	183	(22-7)	Mech. Rm.103	A/C	Repaired 1996
1299T	97	SA-205 Format	Womens' Rm.	HWH	
1299T-6	222	(27-6)	On unit	Heat Pump	
1299T-6	222	(27-6)	On unit	Heat Pump	
1299T-7	222	(27-6)	On unit	Heat Pump	
1299T-7	222	(27-6)	On unit	Heat Pump	
583A	282	475999	rm 101A	carrier	
720A	280	476015	rm 101	carrier	
720B	281	475976	rm 105	carrier	
582	261	475941	rms 101-112	carrier	
582	262	475947	rms 204-208	carrier	
643	277	475971	rm 101	carrier	
643	278	475948	rm 101	carrier	
643	283	476004	rm 113	carrier	
643	284	476010	rm 104	carrier	
643	285	475975	rm 110	carrier	
720	279	476008	rm 123	carrier	
1101	97	(12-1)	R-102	HWH	
1120	148	(18-4)	R-102	A/C	Locked-Key from Mr. Gray 41295
1145	97	SA-205 Format	R-114	HWH	Mech. Equpt. Rm.
1145	286	669519	rms 101-112	carrier	
1145	287	669520	rms 202-208	carrier	
1146	156	(19-4)	R-107	A/C	
1148	154	(19-2)	Roof	A/C	Split system

BLDG. NO.	Add.	Message	Switch Location	Load	Comments
1149	8	(01-0)	R-112	A/C	
1149	9	(01-1)	R-209	A/C	Repaired 1996
1149	97	(12-1)	R-102	HWH	
1151	32	(04-0)	O.S. On wall	A/C	
1151	33	(04-1)	R-124	A/C	Disconnect OFF-Switch OK
1151	34	(04-2)	R-113	A/C	
1151	97	SA-205 Format	R-105	HWH	Repaired-In ceiling
1152	97	SA-205 Format	R-10 (Basement)	HWH	Locked-Key from Mr. Fachko Rm. 102
1155	97	(12-1)	R-106	HWH	Locked-Key from Mr. Fachko Rm. 102
1155	160	(20-0)	On unit	A/C	Repaired-Pump-down unit
1155	161	(20-1)	On unit	A/C	
1155	161	(20-1)	R-106	A/C	Repaired 1996
1156	97	(12-1)	R-100	HWH	Locked-Key from A/C shop-Curtis-In local mo
1159	35	(04-3)	R-202	A/C	Opens at 8:00 A.M.
1159	35	(04-3)	R-201	A/C	
1159	97	(12-1)	R-102	HWH	
1160	162	(20-2)	R-103	A/C	
1160	97	(12-1)	R-106	HWH	
1162	97	(12-1)	R-117	HWH	
1163	14	(01-6)	R-106	A/C	
1163	97	(12-1)	R-106	HWH	
1164	166	(20-6)	Inside unit	Heat Pump	
1164	119	(14-7)	R-104	HWH	Critical Load
1169	17	(02-1)	R-111	A/C	
1169	97	SA-205 Format	R-111	HWH	
1175	84	(10-4)	On unit	Heat Pump	
1175	84	(10-4)	On unit	Heat Pump	
1177	6	(00-6)	O.S. On Wall	Heat Pump	
1177	6	(00-6)	O.S. On Wall	Heat Pump	
1177	97	(12-1)	Access door	HWH	Need screwdriver for access door
1183	97	SA-205 Format	R-206	HWH	Underneath sink
1183	216	(27-0)	On unit	Heat Pump	By door to Rm.204
1183	216	(27-0)	On unit	Heat Pump	
1183	216	(27-0)	On unit	Heat Pump	
1183	216	(27-0)	On unit	Heat Pump	
1183	216	(27-0)	On unit	Heat Pump	
1183	216	(27-0)	On unit	Heat Pump	
1183	216	(27-0)	On unit	Heat Pump	
1183	216	(27-0)	On unit	Heat Pump	
1183	216	(27-0)	On unit	Heat Pump	
1188	265	SA-205 Format	On unit	Heat Pump	Repaired 1996
1188	266	SA-205 Format	On unit	Heat Pump	Repaired 1996
1188	267	SA-205 Format	On unit	Heat Pump	
1188	97	SA-205 Format	Mens' Rm.	HWH	Need screwdriver for access door
1188	265	475933	rm 110	carrier	
1188	266	475934	rm 100	carrier	
1188	267	476020	rm 101-103	trane	
1189	97	SA-205 Format	Closet-Rm.105	HWH	Locked-Key from Mr. Pierpont
1190	97	SA-205 Format	R-100	HWH	

1191	20	(02-4)	O.S. On wall	A/C	
BLDG. NO,	**Add.**	**Message**	**Switch Location**	**Load**	**Comments**
1191	20	(02-4)	O.S. On wall	A/C	
1192	26	(03-2)	Inside JC panel	A/C	Repaired 1996
1192	27	(03-3)	Machine Rm.110	A/C	Repaired 1996
1192	28	(03-4)	Machine Rm.110	A/C	
1194	151	(18-7)	Inside control cabinet	Chiller	
1197	97	SA-205 Format	Shop-Rm.100	HWH	
1198	133	(16-5)	Shop Rm.-100	A/C	Locked-Key from Mr. Slicer
1198	119	(14-7)	Lab-Rm.104	HWH	Critical Load
1199	10	(01-2)	O.S. Lower Unit	A/C	Repaired 1996
1199	11	(01-3)	O.S. Upper unit	A/C	
1199	12	(01-4)	Front roof	A/C	
1199	13	(01-5)	Front roof	A/C	
1199	181	(22-5)	On unit	Heat Pump	Front of building
1199	214	(26-6)	On unit	A/C	
1199	97	(12-1)	R-118a	HWH	
1199	97	(12-1)	R-113	HWH	
1200	36	(04-4)	R-107	A/C	Repaired 1996
1200	86	(10-6)	Rm.-222 Inside JC Pnl	A/C	Repaired 1996
1200	171	(21-3)	Inside unit	A/C	Repaired 1996
1200	172	(21-4)	Inside unit	A/C	
1200	97	(12-1)	R-107	HWH	
1200	97	(12-1)	R-116	HWH	
1200	97	(12-1)	R-129	HWH	
1201	137	(17-1)	Inside unit	A/C	On roof
1201	137	(17-1)	On unit	A/C	
1201	97	(12-1)	R-113 Pit	HWH	
1202	270	SA-205 Format	On unit	Heat pump	Repaired 1996
1202	97	(12-1)	R-129	HWH	
1202	270	475993	rm 139	bard	
1203	143	(17-7)	R-104	A/C	Locked-Key from security dispatcher #45500
1204	97	(12-1)	R-103	HWH	Locked-Key from Mr. Riley #47108
1204	146	(18-2)	On unit	A/C	To left of building
1204	146	(18-2)	On unit	A/C	
1206	97	SA-205 Format	Mech. Rm.110	HWH	Locked-Key from Mr. Ruth #44287
1206	97	SA-205 Format	R-105	HWH	
1206	288	669521	mens room	sanyo	
1206	289	669522	rm 103	sanyo	
1206	290	669523	office	sanyo	
1206	291	669524	office	sanyo	
1206	292	669525	office	sanyo	
1206	293	669526	ladies room	sanyo	
1206	294	669527	mens room	sanyo	
1208	97	(12-1)	R-154 (cage)	HWH	
1208	97	(12-1)	R-5 (Basement)	HWH	
1208	97	(12-1)	R-5 (Basement)	HWH	
1209	87	(10-7)	R-118	Chiller	
1209	87	(10-7)	R-118	AHU	
1209	87	(10-7)	R-195	AHU	
1209	97	(12-1)	R-172		

ATTACHMENT J-C27-15A

GENERAL DESCRIPTION OF ENERGY MANAGEMENT AND CONTROL SYSTEM

A. GENERAL DESCRIPTION OF MANAGEMENT AND CONTROL SYSTEM.

The primary EMCS function is to efficiently control HVAC, lighting, and other energy consuming equipment. The Contractor utilizing the EMCS is responsible for monitoring and reporting the energy consumption of LaRC and the Langley Air Force Base. The EMCS consists of host console computers that have the ability to provide a manned interface for monitoring and controlling remote systems through an integrated network control system. The EMCS controls the HVAC loads in 103 buildings and 104 trailers by direct digital control, radio switches, and infoscan, it monitors 235 electrical meters for energy consumption, controls the operation of 150 hot water heaters, and controls interior lights in two (2) buildings.

B. SUMMARY OF HVAC LOADS CONTROLLED BY THE EMCS UTILIZING VARIOUS CONTROL SYSTEMS

SYSTEM	FACILITIES	TOTAL SQ./FT.
INFOSCAN	18 BLDG.'S	961,318
RADIO	55 BLDG.'S 104 TRAILERS	398,285
DDC	30 BLDG.'S	262,173

TOTAL SQ. FT. MONITORED AND/OR CONTROLLED 1,621,776 SQ./FT.

TOTAL SQ. FT. MISSION AND NON-MISSION VARIABLE BLDG.'S LaRC.3,346,234 SQ. FT.

TOTAL A/C TONNAGE ON THE EMCS SYSTEMS

SYSTEM	A/C TONNAGE
INFOSCAN	2700
RADIO	812
DDC	617
TOTAL A/C TONNAGE	4129

BLDG.'S WITH DDC CONTROLS.
1232, 1216, 1250, 1162, 1168, 1208, 1213, 1205, 1192E, 1195, 1214, 1220, 1221, 1145, 1209, 648.

HOT WATER HEATERS CONTROLLED BY RADIO SWITCHES.
63 HOT WATER HEATERS-TOTAL ELECTRICAL LOAD 362,564 WATTS.

TYPES OF LOADS CONTROLLED BY ALL SYSTEMS.
AIRHANDLERS, DX UNITS, CHILLERS, PUMPS, LIGHTS

C. Direct Digitally Controlled Facilities

Control System	Facilities Controlled	Facility Number	Approx. Sq. Ft. Controlled	Tonnage of Air Conditioning *
Barber Colman	1	1216	10,000	36
Robertshaw	2	1205	60,000	214
		1209	64,000	228
Trane	9	1232	23,000	82
		1162	3,000	11
		1250	68,000	243
		1206	6,500	23
		1213	25,000	89
		1251	2,000	7
		1208	4,500	16
		1216	10,000	36
		1168	10,000	36
Enviro-Tec.	1	1205	6,400	23
Carrier/Parker	7	648	34,000	121
		1221	4,000	14
		1192E	10,000	36
		1145	4,000	14
		1220	2,000	7
		1214	5,000	18
Infoscan	17	1148	39,000	140
		1202	89,000	317
		1205	60,000	214
		1208	25,000	89
		1212	57,600	206
		1220	35,000	125
		1221	86,000	307
		1229	40,000	143
		1230	77,000	275
		1232	28,000	100
		1238	53,000	189
		1244	80,000	286
		1250	68,000	243
		1251	128,000	457
		1267	31,000	110
		1293	67,000	239
		1299	44,000	157

* Based on Avg. Cooling Load of 280 Sq. Ft./Ton.

D. Radio Switch Controlled System

Control System	Facilities Controlled	Controlled Sq. Ft.	Tonnage of Air Conditioning
Scientific Atlanta	111 Office Bldgs	1,053,000	3,761
	81 Trailers	53,900	243
	150 HW Heaters		

E. RADIO SWITCH LOCATIONS

BLDG. NO,	Add.	Message	Switch Location	Load	Comments
1237T	158	(19-6)	On unit	Heat Pump	Formally 1270T
1237T	206	(25-6)	On unit	Heat Pump	Formally 1293T
0582A	261	SA-205 Format	Courtyard	A/C	Split System
0582A	262	SA-205 Format	Courtyard	A/C	Split System
0582A	97	(12-1)	Mens' Rm.114	HWH	
0582A	97	(12-1)	Womens' Rm.113	HWH	
0583A	282	SA-205 Format	R-101	A/C	Located in "A" section of 583
0640	97	(12-1)	R-101	HWH	Beside sink&roll-up garage door
0640	97	(12-1)	Mezz.	HWH	2nd floor/Access from stairwell
0641	97	SA-205 Format	R-213	HWH	Between Mens & Ladies toilets (closet)
0641	97	(12-1)	R-117	HWH	
0643	97	SA-205 Format	R-101	HWH	
0643	97	(12-1)	R-123A	HWH	
0643	277	SA-205 Format	R-101	A/C	Repaired 1996
0643	278	SA-205 Format	R-101	A/C	Repaired 1996
0643	283	SA-205 Format	R-113	A/C	Inside closet
0643	284	SA-205 Format	R-104	A/C	Inside closet
0643	285	SA-205 Format	R-110	A/C	Inside closet
0645A	97	SA-205 Format	Mens' Rm.401	HWH	
0646	97	(12-1)	R-107	HWH	Key from personnel in room 209
0648	97	(12-1)	R-107	HWH	
0720	97	SA-205 Format	R-112	HWH	Repaired 1996
0720	279	SA-205 Format	R-123	A/C	Split system
0720A	280	SA-205 Format	R-101	A/C	Locked-Key from Mr. Don Ruth-43562
0720B	281	SA-205 Format	R-105	A/C	Split system
1130T-1	226	(28-2)	On unit	Heat Pump	
1130T-1	226	(28-2)	On unit	Heat Pump	
1130T-1	224	(28-0)	On unit	Heat Pump	
1130T-1	224	(28-0)	On unit	Heat Pump	
1130T-2	226	(28-2)	On unit	Heat Pump	
1130T-2	226	(28-2)	On unit	Heat Pump	
1130T-2	226	(28-2)	On unit	Heat Pump	
1130T-2	226	(28-2)	On unit	Heat Pump	
1130T-3	226	(28-2)	On unit	Heat Pump	
1130T-3	226	(28-2)	On unit	Heat Pump	
1145T	221	(27-5)	On unit	Heat Pump	

BLDG. NO,	Add.	Message	Switch Location	Load	Comments
1145T	221	(27-5)	On unit	Heat Pump	
1145T	221	(27-5)	On unit	Heat Pump	
1145T	97	SA-205 Format	Mens' Rm.107	HWH	
1162A	15	(01-7)	Roof	A/C	
1162T	144	(18-0)	On unit	Heat Pump	
1162T	144	(18-0)	On unit	Heat Pump	
1162T	144	(18-0)	On unit	Heat Pump	
1163T	97	SA-205 Format	R-107	HWH	Womens' restroom
1163T	163	(20-3)	On unit	Heat Pump	
1163T	164	(20-4)	On unit	Heat Pump	
1163T	165	(20-5)	On unit	Heat Pump	
1192C	22	(02-6)	Roof	A/C	
1192C	170	(21-2)	On unit	A/C	Split system
1192C	97	(12-1)	Mezz. (C-187)	HWH	
1192D	23	(02-7)	Roof	A/C	Package rooftop unit
1192D	24	(03-0)	Roof-inside unit	A/C	
1192D	25	(03-1)	Roof-inside unit	A/C	
1192E	169	(21-1)	On wall	A/C	Split system
1192E	297	669580	rms 101-190E	carrier	
1194A	132	(16-4)	R-103	A/C	Split system-Mechanical room
1194A	132	(16-4)	Inside unit	A/C	
1195A	63	(07-7)	On unit	Chiller	Repaired 1996
1195A	97	(12-1)	R-112	HWH	
1195B	64	(08-0)	On unit	A/C	
1195B	97	(12-1)	Mens' Rm.-226	HWH	
1195C	64	(08-0)	R-146	A/C	Split system
1195C	64	(08-0)	R-146	A/C	Split system
1206T	173	(21-5)	On unit	Heat Pump	Repaired 1996
1206T	174	(21-6)	On unit	Heat Pump	Repaired 1996
1206T	175	(21-7)	On unit	Heat Pump	Repaired 1996
1208A	97	SA-205 Format	R-118 M.E.	HWH	
1208A	139	(17-3)	Mech. Rm.	A/C	Removed
1209T-2	97	SA-205 Format	Mens' Rm.111	HWH	
1209T-2	108	(13-4)	On unit	Heat Pump	
1209T-2	108	(13-4)	On unit	Heat Pump	
1209T-2	108	(13-4)	On unit	Heat Pump	
1209T-2	108	(13-4)	On unit	Heat Pump	
1209T-3	194	(24-2)	On unit	Heat Pump	
1209T-3	194	(24-2)	On unit	Heat Pump	
1209T-4	97	SA-205 Format	Closet	HWH	Repaired 1996
1209T-4	220	(27-4)	On unit	Heat Pump	
1209T-5	97	SA-205 Format	R-301	HWH	Closet
1209T-5	150	(18-6)	On unit	Heat Pump	
1209T-6	97	SA-205 Format	R-307	HWH	Inside closet
1209T-6	149	(18-5)	On unit	Heat Pump	
1209T-7	147	(18-3)	On unit	Heat Pump	
1209T-8	97	SA-205 Format	Restroom	HWH	
1209T-8	223	(27-7)	On unit	Heat Pump	

1209T-8	223	(27-7)	On unit	Heat Pump	
BLDG. NO,	**Add.**	**Message**	**Switch Location**	**Load**	**Comments**
1209T-8	223	(27-7)	On unit	Heat Pump	
1209T-8	223	(27-7)	On unit	Heat Pump	
1212C	90	(11-2)	Roof	AHU	Removed
1212C	91	(11-3)	R-301	AHU	Third floor equpt. rm.
1212C	92	(11-4)	R-301	AHU	Third floor equpt. rm.
1212C	97	SA-205 Format	Womens' Rm.102	HWH	
1216T	15	(01-7)	O.S. On unit	Heat Pump	No schedule
1216T	15	(01-7)	O.S. On unit	Heat Pump	No schedule
1218A	77	(09-5)	R-204	A/C	Repaired 1996
1221A	97	SA-205 Format	R-128	HWH	
1221A	202	(25-2)	R-207	A/C	Above JC Pnl
1221B	97	SA-205 Format	R-118	HWH	
1221B	97	SA-205 Format	R-122	HWH	Underneath steps
1221B	259	SA-205 Format	R-127-Mezz.	A/C	Removed
1221B	260	SA-205 Format	R-116	Heat pump	
1221B	259	SA-205 Format	Mezz.	A/C	
1221C	203	(25-3)	R-123	A/C	Large shop unit
1221C	97	(12-1)	R-123	HWH	Beside counter sink-2 Heaters in here?
1221C	97	SA-205 Format	R-123B	HWH	
1221C	97	(12-1)	R-205	HWH	Above sink
1221C	258	SA-205 Format	R-123 Mezz.	A/C	
1221D	106	(13-2)	R-126 Test cell #1	A/C	Repaired 1996
1221D	106	(13-2)	R-124 Test cell #2	A/C	
1222B	182	(22-6)	On unit	A/C	Inoperative-Trane unit
1222B	182	(22-6)	On unit	A/C	Small split system
1222B	182	(22-6)	On unit	A/C	Small split system
1222B	295	669531	gym	mitsubishi	
1222B	296	669531	gym	mitsubishi	
1224T	97	SA-205 Format	Mens' Rm.	HWH	Repaired 1996
1224T	97	SA-205 Format	Womens' Rm.	HWH	Repaired 1996
1224T-1	114	(14-2)	On unit	Heat Pump	
1224T-1	115	(14-3)	On unit	Heat Pump	
1224T-10	101	(12-5)	On unit	Heat Pump	
1224T-10	101	(12-5)	On unit	Heat Pump	
1224T-11	101	(12-5)	On unit	Heat Pump	
1224T-11	101	(12-5)	On unit	Heat Pump	
1224T-12	129	(16-1)	On unit	Heat Pump	
1224T-12	129	(16-1)	On unit	Heat Pump	
1224T-3	116	(14-4)	On unit	Heat Pump	
1224T-7	121	(15-1)	On unit	Heat Pump	
1224T-7	122	(15-2)	On unit	Heat Pump	
1224T-7	123	(15-3)	On unit	Heat Pump	
1224T-7	124	(15-4)	On unit	Heat Pump	
1224T-8	125	(15-5)	On unit	Heat Pump	
1224T-8	126	(15-6)	On unit	Heat Pump	
1224T-8	127	(15-7)	On unit	Heat Pump	
1224T-8	128	(16-0)	On unit	Heat Pump	
1224T-9	101	(12-5)	On unit	Heat Pump	

1224T-9	101	(12-5)	On unit	Heat Pump	
BLDG. NO,	**Add.**	**Message**	**Switch Location**	**Load**	**Comments**
1229A	97	SA-205 Format	R-103	HWH	Repaired 1996
1230B	136	(17-0)	Inside unit	Chiller	Inoperative-Carded
1230B	185	(23-1)	R-191 Above JC Pnl.	AHU	
1231B	97	SA-205 Format	R-104	HWH	
1231B	184	(23-0)	On unit	A/C	Repaired 1996
1231T	112	(14-0)	On unit	Heat Pump	Formally 1148T
1231T	113	(14-1)	On unit	Heat Pump	Formally 1148T
1232A	97	SA-205 Format	Closet Rm.-116H	HWH	Between Rms.107 & 109
1232A	97	SA-205 Format	R-144	HWH	Pump Rm.-Locked-Key from Mr. Soule'
1232A	97	SA-205 Format	R-245	HWH	Repaired-Break room
1232A	97	(12-1)	R-130	HWH	Mark the position in the PM book
1232T	61	(07-5)	On unit	Heat Pump	Formally 1192T
1232T	62	(07-6)	On unit	Heat Pump	Formally 1192T
1232T	80	(10-0)	On unit	Heat Pump	Formally 1192T
1232T-3	138	(17-2)	On unit	Heat Pump	
1232T-3	138	(17-2)	On unit	Heat Pump	
1232T-3	138	(17-2)	On unit	Heat Pump	
1232T-3	138	(17-2)	On unit	Heat Pump	
1232T-4	142	(17-5)	On unit	Heat Pump	In rocket-test scrap yard
1236C	97	(12-1)	Shop-Rm.100	HWH	
1237A	4	(00-4)	On unit	A/C	
1237A	5	(00-5)	R-115	A/C	
1237A	97	(12-1)	R-111 Mezz.	HWH	Above Rm.112
1237B	2	(00-2)	On unit	A/C	Repaired-Package unit
1237B	97	SA-205 Format	Mens' Rm.-100A	HWH	
1237C	3	(00-3)	O.S. On wall	A/C	Locked-Call security dispatcher #45500
1237T	167	(20-7)	On unit	Heat Pump	Formally 1192T
1237T	168	(21-0)	In J-box on wall	Heat Pump	Formally 1192T
1237T	205	(25-5)	On unit	Heat Pump	Formally 1229T
1237T	97	SA-205 Format	Mens' Rm.	HWH	Repaired 1996
1237T-1	130	(16-2)	On unit	Heat Pump	Repaired-End unit
1237T-1	130	(16-2)	On unit	Heat Pump	
1237T-1	130	(16-2)	On unit	Heat Pump	
1237T-1	130	(16-2)	On unit	Heat Pump	
1237T-1	134	(16-6)	On unit	Heat Pump	Repaired-Unit near center walkway
1237T-1	134	(16-6)	On unit	Heat Pump	
1237T-1	134	(16-6)	On unit	Heat Pump	
1237T-1	134	(16-6)	On unit	Heat Pump	
1237T-2	208	(26-0)	On unit	Heat Pump	Mark the position in the PM book
1237T-2	208	(26-0)	On unit	Heat Pump	Mark the position in the PM book
1237T-2	210	(26-2)	On unit	Heat Pump	Mark the position in the PM book
1237T-2	210	(26-2)	On unit	Heat Pump	Mark the position in the PM book
1238A	97	(12-1)	R-135 M.E.	HWH	
1238B	187	(23-3)	Inside control box	A/C	Switch controls two units
1244D	97	SA-205 Format	R-148	HWH	Repaired 1996
1244D	97	SA-205 Format	R-146	HWH	Repaired 1996
1244T	269	476000	T-5	bard	
1244T-2	213	(26-5)	On unit	Heat Pump	

BLDG. NO,	Add.	Message	Switch Location	Load	Comments
1244T-2	97	(12-1)	Closet	HWH	
1244T-3	97	(12-1)	Mens' Rm.	HWH	
1244T-4	213	(26-5)	On unit	Heat Pump	
1244T-4	213	(26-5)	On unit	Heat Pump	
1244T-4	97	SA-205 Format	Restroom	HWH	
1244T-5	269	SA-205 Format	On unit	Heat Pump	
1244T-5	269	SA-205 Format	On unit	Heat Pump	Only one heat pump?
1247A	39	(04-7)	Basement	AHU	Must be kept in local
1247B	41	(05-1)	Small Penthouse	A/C	Repaired 1996
1247B	42	(05-2)	Small Penthouse	A/C	
1247B	79	(09-7)	Large Penthouse-B	A/C	
1247B	82	(10-2)	Large Penthouse-B	A/C	Repaired 1996
1247B	83	(10-3)	Large Penthouse-B	A/C	Repaired 1996
1247B	85	(10-5)	Large Penthouse-B	A/C	Repaired 1996
1247B	97	(12-1)	Basement	HWH	Near hydraulic fluid drums
1247D	65	(08-1)	Large Penthouse-D	A/C	Repaired 1996
1247D	66	(08-2)	Large Penthouse-D	A/C	Repaired 1996
1247D	67	(08-3)	Large Penthouse-D	A/C	Repaired 1996
1247D	68	(08-4)	Large Penthouse-D	A/C	
1247D	69	(08-5)	Large Penthouse-D	A/C	Repaired 1996
1247D	70	(08-6)	Large Penthouse-D	A/C	
1247D	71	(08-7)	Large Penthouse-D	A/C	Repaired 1996
1247D	72	(09-0)	Large Penthouse-D	A/C	Repaired 1996
1247D	73	(09-1)	Large Penthouse-D	A/C	Repaired 1996
1247D	74	(09-2)	D-123	A/C	2nd floor
1247D	191	(23-7)	Inside unit	A/C	Repaired 1996
1247D	225	(28-1)	D-114	A/C	Removed
1247D	227	(28-3)	On unit	A/C	Unit is ground mounted
1247G	97	(12-1)	R-104	HWH	
1248T	142	(17-6)	On unit	Heat Pump	
1250A	97	SA-205 Format	R-106	HWH	
1250T-A	100	(12-4)	On unit	Heat Pump	
1250T-A	100	(12-4)	On unit	Heat Pump	
1250T-A	100	(12-4)	On unit	Heat Pump	
1250T-A	100	(12-4)	On unit	Heat Pump	
1250T-A	97	SA-205 Format	Mens Rm.410	HWH	
1250T-B	104	(13-0)	On unit	Heat Pump	
1250T-B	104	(13-0)	On unit	Heat Pump	
1250T-B	104	(13-0)	On unit	Heat Pump	
1250T-B	97	(12-1)	Womens Rm.	HWH	
1250T-C	107	(13-3)	On unit	Heat Pump	Repaired 1996
1250T-C	97	(12-1)	Restroom	HWH	Removed
1250T-D	97	SA-205 Format	Womens' Rm-608	HWH	
1250T-D	217	(27-1)	On unit	Heat Pump	
1250T-D	217	(27-1)	On unit	Heat Pump	
1250T-E	215	(26-7)	On unit	Heat Pump	Repaired 1996
1250T-E	215	(26-7)	On unit	Heat Pump	
1250T-E	97	SA-205 Format	Mens' Rm-500	HWH	
1251A	97	SA-205 Format	Compressor Rm.136	HWH	

1251A	97	SA-205 Format	Compressor Rm.136	HWH	
BLDG. NO,	**Add.**	**Message**	**Switch Location**	**Load**	**Comments**
1256T	38	(04-6)	On unit	Heat Pump	Trailer Removed
1265T	103	(12-7)	On unit	Heat Pump	
1265T	103	(12-7)	On unit	Heat Pump	
1267A	195	(24-3)	On unit	A/C	Repaired 1996
1267A	196	(24-4)	Roof	A/C	Locked-Key from Rm.136 Mr. Bennet
1267A	97	SA-205 Format	R-134 Mezz.	HWH	
1267A	97	(12-1)	R-130 Mezz.	HWH	
1270A	97	(12-1)	R-103A	HWH	
1270T	97	SA-205 Format	Restroom	HWH	
1271T-Conex	274	SA-205 Format	On unit	Heat Pump	
1273T-Conex	272	SA-205 Format	On unit	Heat Pump	
1273T-Conex	272	SA-205 Format	On unit	Heat Pump	
1284A	199	(24-7)	R-112	A/C	Locked-Call security dispatcher #45500
1284B	52	(06-4)	R-118	A/C	
1284B	97	(12-1)	R-115	HWH	Repaired 1996
1284C	197	(24-5)	R-104	A/C	Locked-Call security dispatcher #45500
1284C	97	(12-1)	R-104	HWH	Locked-Call security dispatcher #45500
1297A	189	(23-5)	On unit	A/C	On mezz.
1297A	29	(03-5)	R-109	A/C	Inside Honeywell Panel
1297E	219	(27-3)	On unit	Heat Pump	Locked gate-Key from 1297A
1298T-200	159	(19-7)	On unit	Heat Pump	
1298T-300	179	(22-3)	On unit	Heat Pump	
1298T-400	180	(22-4)	On unit	Heat Pump	
1299F	97	(12-1)	Mech. Rm.103	HWH	Locked-Key from Mr. Langford #41846
1299F	183	(22-7)	Mech. Rm.103	A/C	Repaired 1996
1299T	97	SA-205 Format	Womens' Rm.	HWH	
1299T-6	222	(27-6)	On unit	Heat Pump	
1299T-6	222	(27-6)	On unit	Heat Pump	
1299T-7	222	(27-6)	On unit	Heat Pump	
1299T-7	222	(27-6)	On unit	Heat Pump	
583A	282	475999	rm 101A	carrier	
720A	280	476015	rm 101	carrier	
720B	281	475976	rm 105	carrier	
582	261	475941	rms 101-112	carrier	
582	262	475947	rms 204-208	carrier	
643	277	475971	rm 101	carrier	
643	278	475948	rm 101	carrier	
643	283	476004	rm 113	carrier	
643	284	476010	rm 104	carrier	
643	285	475975	rm 110	carrier	
720	279	476008	rm 123	carrier	
1101	97	(12-1)	R-102	HWH	
1120	148	(18-4)	R-102	A/C	Locked-Key from Mr. Gray 41295
1145	97	SA-205 Format	R-114	HWH	Mech. Equpt. Rm.
1145	286	669519	rms 101-112	carrier	
1145	287	669520	rms 202-208	carrier	
1146	156	(19-4)	R-107	A/C	
1148	154	(19-2)	Roof	A/C	Split system

1149	8	(01-0)	R-112	A/C	
BLDG. NO,	**Add.**	**Message**	**Switch Location**	**Load**	**Comments**
1149	9	(01-1)	R-209	A/C	Repaired 1996
1149	97	(12-1)	R-102	HWH	
1151	32	(04-0)	O.S. On wall	A/C	
1151	33	(04-1)	R-124	A/C	Disconnect OFF-Switch OK
1151	34	(04-2)	R-113	A/C	
1151	97	SA-205 Format	R-105	HWH	Repaired-In ceiling
1152	97	SA-205 Format	R-10 (Basement)	HWH	Locked-Key from Mr. Fachko Rm. 102
1155	97	(12-1)	R-106	HWH	Locked-Key from Mr. Fachko Rm. 102
1155	160	(20-0)	On unit	A/C	Repaired-Pump-down unit
1155	161	(20-1)	On unit	A/C	
1155	161	(20-1)	R-106	A/C	Repaired 1996
1156	97	(12-1)	R-100	HWH	Locked-Key from A/C shop-Curtis-In local mo
1159	35	(04-3)	R-202	A/C	Opens at 8:00 A.M.
1159	35	(04-3)	R-201	A/C	
1159	97	(12-1)	R-102	HWH	
1160	162	(20-2)	R-103	A/C	
1160	97	(12-1)	R-106	HWH	
1162	97	(12-1)	R-117	HWH	
1163	14	(01-6)	R-106	A/C	
1163	97	(12-1)	R-106	HWH	
1164	166	(20-6)	Inside unit	Heat Pump	
1164	119	(14-7)	R-104	HWH	Critical Load
1169	17	(02-1)	R-111	A/C	
1169	97	SA-205 Format	R-111	HWH	
1175	84	(10-4)	On unit	Heat Pump	
1175	84	(10-4)	On unit	Heat Pump	
1177	6	(00-6)	O.S. On Wall	Heat Pump	
1177	6	(00-6)	O.S. On Wall	Heat Pump	
1177	97	(12-1)	Access door	HWH	Need screwdriver for access door
1183	97	SA-205 Format	R-206	HWH	Underneath sink
1183	216	(27-0)	On unit	Heat Pump	By door to Rm.204
1183	216	(27-0)	On unit	Heat Pump	
1183	216	(27-0)	On unit	Heat Pump	
1183	216	(27-0)	On unit	Heat Pump	
1183	216	(27-0)	On unit	Heat Pump	
1183	216	(27-0)	On unit	Heat Pump	
1183	216	(27-0)	On unit	Heat Pump	
1183	216	(27-0)	On unit	Heat Pump	
1183	216	(27-0)	On unit	Heat Pump	
1188	265	SA-205 Format	On unit	Heat Pump	Repaired 1996
1188	266	SA-205 Format	On unit	Heat Pump	Repaired 1996
1188	267	SA-205 Format	On unit	Heat Pump	
1188	97	SA-205 Format	Mens' Rm.	HWH	Need screwdriver for access door
1188	265	475933	rm 110	carrier	
1188	266	475934	rm 100	carrier	
1188	267	476020	rm 101-103	trane	
1189	97	SA-205 Format	Closet-Rm.105	HWH	Locked-Key from Mr. Pierpont
1190	97	SA-205 Format	R-100	HWH	

BLDG. NO,	Add.	Message	Switch Location	Load	Comments
1191	20	(02-4)	O.S. On wall	A/C	
1191	20	(02-4)	O.S. On wall	A/C	
1192	26	(03-2)	Inside JC panel	A/C	Repaired 1996
1192	27	(03-3)	Machine Rm.110	A/C	Repaired 1996
1192	28	(03-4)	Machine Rm.110	A/C	
1194	151	(18-7)	Inside control cabinet	Chiller	
1197	97	SA-205 Format	Shop-Rm.100	HWH	
1198	133	(16-5)	Shop Rm.-100	A/C	Locked-Key from Mr. Slicer
1198	119	(14-7)	Lab-Rm.104	HWH	Critical Load
1199	10	(01-2)	O.S. Lower Unit	A/C	Repaired 1996
1199	11	(01-3)	O.S. Upper unit	A/C	
1199	12	(01-4)	Front roof	A/C	
1199	13	(01-5)	Front roof	A/C	
1199	181	(22-5)	On unit	Heat Pump	Front of building
1199	214	(26-6)	On unit	A/C	
1199	97	(12-1)	R-118a	HWH	
1199	97	(12-1)	R-113	HWH	
1200	36	(04-4)	R-107	A/C	Repaired 1996
1200	86	(10-6)	Rm.-222 Inside JC Pnl	A/C	Repaired 1996
1200	171	(21-3)	Inside unit	A/C	Repaired 1996
1200	172	(21-4)	Inside unit	A/C	
1200	97	(12-1)	R-107	HWH	
1200	97	(12-1)	R-116	HWH	
1200	97	(12-1)	R-129	HWH	
1201	137	(17-1)	Inside unit	A/C	On roof
1201	137	(17-1)	On unit	A/C	
1201	97	(12-1)	R-113 Pit	HWH	
1202	270	SA-205 Format	On unit	Heat pump	Repaired 1996
1202	97	(12-1)	R-129	HWH	
1202	270	475993	rm 139	bard	
1203	143	(17-7)	R-104	A/C	Locked-Key from security dispatcher #45500
1204	97	(12-1)	R-103	HWH	Locked-Key from Mr. Riley #47108
1204	146	(18-2)	On unit	A/C	To left of building
1204	146	(18-2)	On unit	A/C	
1206	97	SA-205 Format	Mech. Rm.110	HWH	Locked-Key from Mr. Ruth #44287
1206	97	SA-205 Format	R-105	HWH	
1206	288	669521	mens room	sanyo	
1206	289	669522	rm 103	sanyo	
1206	290	669523	office	sanyo	
1206	291	669524	office	sanyo	
1206	292	669525	office	sanyo	
1206	293	669526	ladies room	sanyo	
1206	294	669527	mens room	sanyo	
1208	97	(12-1)	R-154 (cage)	HWH	
1208	97	(12-1)	R-5 (Basement)	HWH	
1208	97	(12-1)	R-5 (Basement)	HWH	
1209	87	(10-7)	R-118	Chiller	
1209	87	(10-7)	R-118	AHU	
1209	87	(10-7)	R-195	AHU	
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07530	06/96	SINGLE PLY MEMBRANE ROOFING
07600	03/98	FLASHING AND SHEETMETAL
07920	06/96	SEALANTS AND CALKINGS

DIVISION 08 - DOORS & WINDOWS

08100	06/96	METAL DOORS AND FRAMES
08120	03/98	ALUMINUM DOORS AND FRAMES

08160	09/96	SLIDING METAL DOORS
08210	09/94	WOOD DOORS
08325	09/96	SECURITY DOORS
08331	06/96	OVERHEAD COILING DOORS
08345	03/98	SOUND CONTROL DOORS
08365	09/96	SECTIONAL OVERHEAD DOORS
08510	03/98	STEEL WINDOWS
08520	03/98	ALUMINUM WINDOWS
08710	03/98	DOOR HARDWARE
08711	03/98	HANGING HARDWARE
08805	06/96	GLASS AND GLAZING
08810	06/96	GLASS
08900	03/98	GLAZED CURTAIN WALLS

DIVISION 09 - FINISHES

09200	06/96	LATH AND PLASTER
09212	06/96	FIREPROOFING PLASTER
09250	06/96	GYPSUM BOARD
09260	09/96	GYPSUM BOARD ASSEMBLIES
09310	06/96	CERAMIC TILE
09330	06/96	QUARRY TILE
09510	06/96	ACOUSTICAL CEILINGS
09514	06/96	ACOUSTIC CEILINGS, EXPOSED GRID
09515	06/96	ACOUSTIC CEILINGS, CONCEALED GRID
09650	03/97	RESILIENT FLOORING
09675	09/96	HEAVY DUTY EPOXY FLOORING
09680	06/96	CARPET
09725	03/98	VINYL WALL COVERING
09901	08/98	ARCHITECTURAL PAINTING (LANGLEY SHELF MASTER)
09960	09/96	HIGH PERFORMANCE COATINGS
09970	09/96	COATINGS FOR STEEL

DIVISION 10 - SPECIALTIES

10160	03/98	METAL TOILET COMPARTMENTS
10165	03/98	PLASTIC LAMINATE TOILET COMPARTMENTS
10275	09/96	ELEVATED FLOOR SYSTEM
10500	03/98	LOCKERS
10523	06/96	FIRE EXTINGUISHERS
10600	03/98	PARTITIONS
10605	03/98	WIRE MESH PARTITIONS
10620	09/96	DEMOUNTABLE GYPSUM BOARD PARTITIONS
10655	06/96	ACCORDION-FOLDING PARTITIONS
10800	03/98	TOILET AND BATH ACCESSORIES

DIVISION 11 - EQUIPMENT

11025	09/96	FIRE-INSULATED, RECORD-VAULT DOORS
11161	09/94	DOCK LEVELERS
11165	06/96	DOCK BUMPERS

DIVISION 12 - FURNISHINGS

12303	03/98	CABINETS, STEEL AND WOOD
12485	09/96	ENTRANCE MATS
12495	09/96	HORIZONTAL LOUVER BLINDS

DIVISION 13 - SPECIAL CONSTRUCTION

13100	09/97	LIGHTNING PROTECTION SYSTEMS
13110	09/96	CATHODIC PROTECTION
13112	09/96	CATHODIC PROTECTION SYSTEM (IMPRESSED CURRENT)
13121	03/98	PRE-ENGINEERED BUILDINGS
13210	09/96	ELEVATED STEEL WATER TANK
13215	09/96	FIBERGLASS-REINFORCED POLYESTER STORAGE TANK
13412	03/97	INSTRUMENTATION
13852	03/98	FIRE-ALARM SYSTEMS
13854	03/98	GAS DETECTION SYSTEMS
13930	03/98	FIRE SPRINKLER SYSTEMS
13950	09/96	DELUGE SPRINKLER SYSTEMS
13960	03/98	CARBON DIOXIDE EXTINGUISHING SYSTEMS

DIVISION 14 - CONVEYING SYSTEMS

14210	06/96	ELECTRIC TRACTION ELEVATORS
14240	03/98	HYDRAULIC ELEVATORS
14600	03/98	HOISTS AND CRANES
14920	06/96	MONORAIL SYSTEMS

DIVISION 15 - MECHANICAL

15003	06/96	GENERAL MECHANICAL PROVISIONS
15050	03/98	BASIC MECHANICAL MATERIALS AND METHODS
15055	08/98	WELDING MECHANICAL (LANGLEY SHELF MASTER)
15072	03/98	VIBRATION ISOLATION FOR AIR CONDITIONING EQUIPMENT
15083	03/98	DUCT INSULATION
15085	03/98	PIPING INSULATION
15102	03/98	PLUMBING
15106	09/96	FERROUS PIPE AND FITTINGS
15107	09/96	PLASTIC PIPE AND FITTINGS
15108	09/96	STAINLESS STEEL PIPE AND FITTINGS
15110	03/98	VALVES
15119	06/96	SELF-CONTAINED CONTROL AND RELIEF VALVES
15120	09/96	PIPING SPECIALTIES
15125	06/96	STEAM TRAPS
15135	09/96	CENTRIFUGAL PUMPS
15185	03/98	REFRIGERATION PIPING AND SPECIALTIES
15186	09/96	CONDENSATE PUMPS
15195	09/96	NATURAL GAS SYSTEMS
15205	09/96	CLEANING PROCEDURES FOR PROCESS PIPING SYSTEMS
15211	03/98	LOW-PRESSURE COMPRESSED AIR SYSTEMS
15212	09/96	HIGH-PRESSURE COMPRESSED AIR SYSTEMS
15218	03/98	VACUUM SYSTEMS
15225	09/96	CHEMICAL-WASTE DRAINAGE SYSTEMS

15410	03/97	PLUMBING FIXTURES
15445	09/96	SUMP PUMPS
15510	03/98	BOILERS
15610	03/98	REFRIGERATION COMPRESSORS
15625	03/98	CHILLED WATER AIR CONDITIONING
15626	03/98	CENTRIFUGAL WATER CHILLERS
15627	03/98	RECIPROCATING WATER CHILLERS
15675	03/98	AIR-COOLED CONDENSERS
15700	03/98	HEATING / VENTILATION / AIR CONDITIONING SYSTEMS
15720	03/98	AIR HANDLING UNITS
15725	09/96	AIR HANDLING
15732	09/96	PACKAGED AIR-CONDITIONING UNITS
15736	03/98	COMPUTER ROOM AIR-CONDITIONING UNITS
15740	03/98	HEAT PUMPS
15762	03/98	AIR COILS
15764	09/96	FAN-COIL UNITS
15765	03/98	FINNED TUBE RADIATION
15766	03/98	UNIT HEATERS AND VENTILATORS
15767	03/97	ELECTRIC RESISTANCE HEATING
15768	09/96	DUCT HEATERS
15815	03/98	LOW PRESSURE DUCTWORK
15818	03/98	MEDIUM/HIGH PRESSURE DUCTWORK
15838	03/98	POWER VENTILATORS
15840	09/96	AIR TERMINAL UNITS
15852	03/98	DIFFUSERS
15855	09/96	GRAVITY VENTILATORS
15865	03/98	FILTERS
15902	03/98	CONTROL SYSTEMS
15915	09/96	ELECTRIC CONTROL SYSTEMS
15950	03/98	TESTING, ADJUSTING AND BALANCING
15972	01/98	DIRECT DIGITAL CONTROL SYSTEMS (LANGLEY SHELF MASTER)

DIVISION 16 - ELECTRICAL

16003	06/96	GENERAL ELECTRICAL PROVISIONS
16050	09/97	BASIC ELECTRICAL MATERIALS AND METHODS
16065	03/97	SECONDARY GROUNDING
16121	03/97	FIBER OPTIC CABLE
16124	06/96	MEDIUM VOLTAGE CABLE
16135	03/97	CABLE TRAYS
16145	03/97	STANDARD WIRING SYSTEMS
16225	09/96	MOTORS
16275	09/97	TRANSFORMERS
16276	03/97	MEDIUM VOLTAGE TRANSFORMERS
16285	03/97	MEDIUM VOLTAGE POWER FACTOR CORRECTION
16286	03/97	OVERCURRENT PROTECTIVE DEVICES
16288	03/97	SURGE ARRESTERS
16305	09/97	OVERHEAD HIGH-VOLTAGE WIRING
16315	03/97	MEDIUM VOLTAGE OVERHEAD POWER DISTRIBUTION
16325	09/97	LOAD-BREAK SWITCHES
16326	09/97	AIR-BREAK SWITCHES
16327	09/97	OIL SWITCHES
16328	09/96	LOAD BREAK SF6 GAS SWITCHES
16345	09/97	MOTOR CONTROL
16365	03/97	PRIMARY UNIT SUBSTATION

-- End of Table of Contents --

- National Electric Code
- NFPA Standards
- Asphalt Institute Manual
- Manual of Uniform Traffic Control Devices for Streets
- ASME Code
- ANSI Code

AND ANY ADDITIONAL AMENDMENTS OF REGULATIONS COVERING THESE ISSUES OVER THE LENGTH OF THE CONTRACT.

3. The Contractor shall adhere to the applicable portions of the current edition of the following publications and directives in performing the services required under this contract.

- Public Law 91-190, National Environmental Policy Act (NEPA).
- Public Law 92-516, Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) as amended.
- Public Law 93-205, Endangered Species Act.
- Public Law 94-580, Resource Conservation and Recovery Act (RCRA).
- Executive Order 12088, Prevention, Control, and Abatement of Environmental Pollution as Federal Installations.

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1	1

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. *(If applicable)*
1	FEB 18 1999	GL.2166	

6. ISSUED BY	CODE	7. ADMINISTERED BY *(If other than Item 6)*	CODE
National Aeronautics and Space Administration Langley Research Center Hampton, VA 23681-2199			

8. NAME AND ADDRESS OF CONTRACTOR *(No. Street, County, State and ZIP: Code)*	(✓)	9A. AMENDMENT OF SOLICITATION NO.
TO ALL CONCERNED	X	1-135-GL.2166 Final RFP
		9B. DATED *(SEE ITEM 11)* February 10, 1999
		10A. MODIFICATION OF CONTRACT/ORDER NO.
		10B. DATED *(SEE ITEM 13)*
CODE / FACILITY CODE		

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☒ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☒ is not extended.
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning one (1) copy of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATA SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and data specified.

12. ACCOUNTING AND APPROPRIATION DATA *(If required)*

N/A

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

(✓)	
	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: *(Specify authority)* THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES *(such as changes in paying office, appropriation date, etc.)* SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER Specify type of modification and authority)

E. **IMPORTANT:** Contractor ☐ is not, ☐ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

SUBJECT: NASA Final Request for Proposal 1-135-GC.2166 Facilities and Equipment Support Service (FESS) contract

The purpose of this amendment is to delete a sentence from Section M that was inadvertantly incorporated into the RFP.

M.3.A.2.a. is revised by deleting the following sentence:

"The offeror's approach to minimizing and controlling overtime on IDIQ work will be evaluated."

Except at provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER *(Type or print)*		16A. NAME AND TITLE OF CONTRACTING OFFICER *(Type or print)*	
		SANDRA S. RAY	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
(Signature of person authorized to sign)		BY *(Signature of Contracting Officer)*	2/18/99

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

2 AMENDMENT/MODIFICATION NO	3 EFFECTIVE DATE	4 REQUISITION/PURCHASE REQ NO	5 PROJECT NO (If applicable)
2	MAR 02 1999	GL2166	

6 ISSUED BY	CODE	7 ADMINISTERED BY (If other than Item 6)	CODE
National Aeronautics and Space Administration Langley Research Center Hampton, VA 23681-2199			

8 NAME AND ADDRESS OF CONTRACTOR (No. Street, County, State and ZIP Code)	(✓)	9A AMENDMENT OF SOLICITATION NO
TO ALL CONCERNED	X	1-135-GL2166 Final RFP
		9B DATED (SEE ITEM 11) February 10, 1999
		10A MODIFICATION OF CONTRACT/ORDER NO
		10B DATED (SEE ITEM 13)
CODE / FACILITY CODE		

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☒ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☒ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning one (1) copy of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATA SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and data specified.

12 ACCOUNTING AND APPROPRIATION DATA (If required)

N/A

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

(✓)	
	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER Specify type of modification and authority)

E. **IMPORTANT:** Contractor ☐ is not, ☐ is required to sign this document and return _____ copies to the issuing office.

14 DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

SUBJECT: NASA Final Request for Proposal 1-135-GC.2166 Facilities and Equipment Support Service (FESS) contract

The purposes of this amendment are to (1) make revisions to the RFP; and (2) provide answers to questions.

(continued)

Except at provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)	
		SANDRA S. RAY	
15B CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY (Signature of Contracting Officer)	16C DATE SIGNED 3-2-99

I. Part III, Section J, Exhibit F, Y2K Guideline and Compliance Verification Form, was inadvertently not released with the Final RFP. As a result, Exhibit F is being released as Enclosure 1 to this Amendment 2 to the RFP.

II. Section K-Representations, Certifications and Other Statements of Offerors, is revised to hereby incorporate clause "K.18 Compliance with Veterans' Employment Reporting Requirements (February 1999)". As a result, Section K is replaced in its entirety and attached as Enclosure 2 to this Amendment 2 to the RFP.

III. L.13.I.C.1. is revised to reduce the page limit for Volume I, Technical Proposal as follows:

" Volume	Page Limit
Volume I, Technical Proposal	75 "

IV. L.13.I.C.3. is revised to exclude the requirements of L.13.II.A.1.e. and L.13.II.A.3 from the technical proposal page limit. As a result, the following sentence is hereby added:

"The small and small disadvantaged business information required under L.13.II.A.1.e. and L.13.II.A.3. are excluded form the Volume I page limitation."

V. L.13.II.A.3., paragraph two, next to last sentence is revised to clarify the submission of past performance information applicable to Subfactor 3. As a result, the sentence is restated as follows:

"(For ease of presentation, this Factor 3 Past Performance information may be included in Volume III.)"

VI. L.13.IV.A.1., second sentence is revised to incorporate small business subcontracting goals as part of the required past performance information. As a result, the sentence is restated as follows:

"Past performance information will be used to assess the extent to which contract objective (including technical, safety performance, management, schedule, cost and small business subcontracting goals) have been achieved on related efforts."

VII. The following Attachment J Sections are being re-released via this Amendment 2 of the RFP: J-C1-23B, J-C3-5A, J-C3-5C, J-C3-6B, J-C9-4 and J-TOC. Changes have been annotated in bold print where possible. In addition, J-C3A, Tools and Miscellaneous Property, released October 29, 1998 is hereby deleted in its entirety. J-C3-5A is the accurate listing of tools and miscellaneous property for the RFP.

VIII. Section H is revised to incorporate the following clause to cover price adjustments for general decision wage determinations for this multi year/option fixed price contract.

"H.11. Davis-Bacon Act --Price Adjustment for General Decision Wage Determinations

(a) This clause applies to area prevailing general decision wage determinations as identified under Exhibit D of this contract.

(b) The Contractor warrants that the prices in this contract do not include any allowance for any contingency to cover increased costs for which adjustment is provided under this clause.

(c) The general decision wage determination, as amended by the Administrator, Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, current on the anniversary date of a multiple year contract or the beginning of each renewal option period, shall apply to this contract.

(d) The contract price or contract unit price labor rates will be adjusted to reflect the Contractor's actual increase or decrease in applicable wages and fringe benefits to the extent that the increase is made to comply with or the decrease is voluntarily made by the Contractor as a result of:

(1) The Department of Labor wage determination applicable on the anniversary date of the multiple year contract, or at the beginning of the renewal option period. For example, the prior year wage determination required a minimum wage rate of $4.00 per hour. The Contractor chose to pay $4.10. The new wage determination increases the minimum rate to $4.50 per hour. Even if the Contractor voluntarily increases the rate to $4.75 per hour, the allowable price adjustment is $.40 per hour;

(2) An increased or decreased wage determination otherwise applied to the contract by operation of law; or

(e) Any adjustment will be limited to increases or decreases in wages and fringe benefits as described in paragraph (c) of this clause, and the accompanying increases or decreases in social security and unemployment taxes and workers' compensation insurance, but shall not otherwise include any amount for general and administrative costs, overhead, or profit.

(f) The Contractor shall notify the Contracting Officer of any increase claimed under this clause within 30 days after receiving a new wage determination unless this notification period is extended in writing by the Contracting Officer. The Contractor shall promptly notify the Contracting Officer of any decrease under this clause, but nothing in the clause shall preclude the Government from asserting a claim within the period permitted by law. The notice shall contain a statement of the amount claimed and any relevant supporting data, including payroll records, that the Contracting Officer may reasonably require. Upon agreement of the parties, the contract price or contract unit price labor rates shall be modified in writing. The Contractor shall continue performance pending agreement on or determination of any such adjustment and its effective date.

(g) The Contracting Officer or an authorized representative shall have access to and the right to examine any directly pertinent books, documents, papers and records of the Contractor until the expiration of 3 years after final payment under the contract."

IX. L.13.III.A.5. all references to FAR 52.222-43 are modified to add "and Paragraph H.11".

X. L.13.III.A.6.e., is hereby revised to incorporate instructions for escalation of general decision labor rates. As a result, the following sentence is hereby incorporated as the fourth sentence into Section L.13.II.A.6.e:

"Reference H.11, which addresses escalation of General Decision labor rates."

XI. Questions and Answers:

1. Ref: L.13.II.A.1.e. and L.13.II.A.3. The referenced Subcontracting Plan addresses much of the same content as Subfactor 3. For example, the phrase "include identification of specific small business concerns; and the types and amount of work to be performed by small businesses," appears

in two corresponding Section L requirements. In view of the severe page constraints in the proposal, could you please clarify the apparent overlap in requirements?

Answer: The responses to L.13.II.A.1.e. and L.13.II.A.3 will not be included in the technical proposal page limit. L.13.II.A.1.e. addresses the evaluation of the Subcontracting Plan. L.13.II.A.3. addresses the evaluation of SDB participation in the SIC major groups. Elimination of these areas from the page limitation should alleviate concerns of overlap.

2. Ref: Part III, Section J, Exhibit C, Small Business Subcontracting Plan. The final RFP only includes a title page for Exhibit C, Small Business Subcontracting Plan. What is the content of this Exhibit and where is the material available?

Answer: Per L.14(a)&(c) offerors are required to provide their Subcontracting Plan with their contract offer as Exhibit C. In addition, offerors are required to submit their Plan in accordance with Section I clause 52.219-9 Alt. II with their technical proposal for the purpose of evaluation. (This requirement is applicable to large businesses only.)

3. Ref: Section B.5 (Price Schedule) and Attachment 2 (Bid Schedule). Are Offerors to complete both of these schedules or does one supercede the other? Please clarify.

Answer: See Section L.13.III.A.5 and L.14(c). Offerors are to fill out and submit both schedules. Section B.5 is to be submitted with your contract offer and Attachment 2 is to be submitted with your business proposal.

4. Ref: Section L.13.III.A.5.b. This paragraph indicates that labor costs should be segregated into the applicable SOW Sections C.8, Management . . . Neither Section B.5 (Price Schedule) nor Attachment 2 (Bid Schedule) includes a line for Management Labor Costs. Will the government add a line for these costs? If not, which line should offerors use for these costs?

Answer: Section L.13.III.A.5.b. provides instructions for the firm fixed price work. Once the total price is determined pursuant to these instructions, it should be apportioned among the three bid schedule line items under BSIN X01.

5. Ref: Section L.13.III.A.5.b. Last sentence reads "All other price elements, overheads/G&A, equipment, travel, license, taxes, insurance, permits and profit, shall not be detailed by SOW section. Neither Section B.5 (Price Schedule) nor Attachment 2 (Bid Schedule) includes a line for these costs. Will the government add a line for these costs? If not, which line should offerors use for these costs?

Answer: See the answer to question 4. above.

6. Ref: L.13.III.A.5.b. The sample spreadsheet includes a column entitled "Fringe Benefits Adjustable under FAR 52.222-43". In part, this FAR includes the following verbiage: "... and the accompanying increases or decreases in social security, unemployment taxes and workers' compensation insurance..." Are these the benefits that are to be included under this column? In addition to base wages, the DOL could increase vacation or health & welfare benefits. Further, since most of the employees will be covered by one of two collective bargaining agreements, any benefit could be increased. New benefits could even be added. Please clarify as whether these types of benefits should be included under this column.

Answer: The fringe benefits adjustable under FAR 52.222-43 and H.11 are those included in the collective bargaining agreement, wage determination, or general decision applicable to each proposed labor category covered by the Service Contract Act or Davis-Bacon Act. This gives a base from which to adjust. The last column is for any benefit your company offers that is not adjustable under FAR 52.222-43 or H.11, whether because of the nature of the benefit or the classification of the labor category.

7. Ref: L.13.II.A.1.e., and L.13.IV.A.1., and M.3.C. In the final RFP, the requirement for past performance does not require the offeror to provide information for the small and small disadvantaged subcontracting goals as part of the objectives in this volume, but it is required in the Technical proposal. In Section M.3, EVALUATION FACTORS, however, under M.3.C. Factor 3 - Relevant Experience Past Performance, the first sentence states "Past performance will be assessed to determine the extent to which contract objectives (including technical, safety performance, management, schedule, cost and ***Small Business Subcontracting goals***) have been achieved. . ." Please clarify which Volume, I or III, the offeror should present the Small Business Subcontracting goals to be in full compliance with Section M - EVALUATION FACTORS FOR AWARD.

Answer: This question is somewhat unclear. We hope this answer provides adequate clarification. The responses to L.13.II.A.1.e. and L.13.II.A.3. have been excluded from the Volume I page limitation (see III and IV of this amendment). Therefore, for ease of presentation, the offeror may include all past performance information, including the SDB past performance information to be evaluated under Mission Suitability Subfactor 3, in it Volume III proposal. However, the offeror's past performance record regarding SDB participation will be evaluated under Mission Suitability Subfactor 3.

8. Ref: L.13.II.A.1.e., and L.14(c). " Each large business offeror shall submit its Small, HUBZone Small Business Concerns . . . " and, from L.14, "Offerors should ensure that the Small, HUBZone Small Business, Small Disadvantaged and Women-Owned Small Business Subcontracting Plan be included in your contract offer as Exhibit C in addition to its submission under Mission Suitability Subfactor 1." Please clarify if the Subcontracting Plan is included in both the Technical and Business Volumes, and, if submitted in the Technical Volume, is it included in the page limit?

Answer: As stated in L.14.(c), the Plan is to be included in the technical proposal and in the contract offer. The responses to L.13.II.A.1.e. and L.13.II.A.3. will not be included in the technical proposal page limit.

9. Ref: Section J-TOC. The revised list of attachments includes two files which do not appear to have been released as revisions. These files are J-C3-5Arev and J-C6-28Arev. Are these files to be released, or is the TOC incorrect in stating that there are revisions?

Answer: Yes, J-C3-5Arev will be re-released per this amendment. J-C-6-28Arev was inadvertently identified with a "rev" in the Section J-TOC and will not be re-released. In addition, Attachments J-C1-23B, J-C3-5C, J-C3-6B, J-C9-4 and J-TOC will be re-released per this amendment. Changes have been annotated in bold print.

10. Ref: L.13.II.A.1.e., defines a Small Business Subcontracting Plan requirement that does not apply to Small Business offerors, as indicated in Section M.3.A.I.e. Later Section L.13.II.A.3, Subfactor 3 requires a SDB participation plan be developed and submitted in response to the Subfactor 3 requirement. Does the latter requirements (i.e.Subfactor 3) apply to Small Business offerors?

Answer: Subfactor 3 is applicable to all offerors except for those SDB concerns that receive a price evaluation adjustment under FAR 52.219-23. (Refer to L.11 of the solicitation.)

11. Unit Priced Labor applicable to DBA work in Final Schedule B is missing Asbestos Worker, Asphalt Worker, and Backhoe Operator labor categories. Is this correct?

Answer: Yes. It was not the Government's intent to identify the above labor categories under DBA-Unit Priced Labor in either the Price or Bid Schedules.

12. Will the Government accept electronic submission of Cost Volume data on CD?

Answer: Yes, the Government will accept submission of the Cost Volume data on CD.

13. Please clarify if offerors are required to submit cost data on LOTUS 1-2-3 software.

Answer: As stated in L.13.III.A.4.a., the Government intends to use personal computers with Windows **and** Lotus 1-2-3 software. This does not prohibit submittals in Excel. Offerors and subcontractor providing direct labor are requested to submit price information on 3-1/2 inch diskettes or CDs, two copies, formatted under MS DOS **or** Windows 95. Zip files may also be submitted.

14. For the FESS proposal evaluation purposes, will the Government evaluate the proposed participation of a women-owned small business subcontractor as a part of the 16% small disadvantaged business goal?

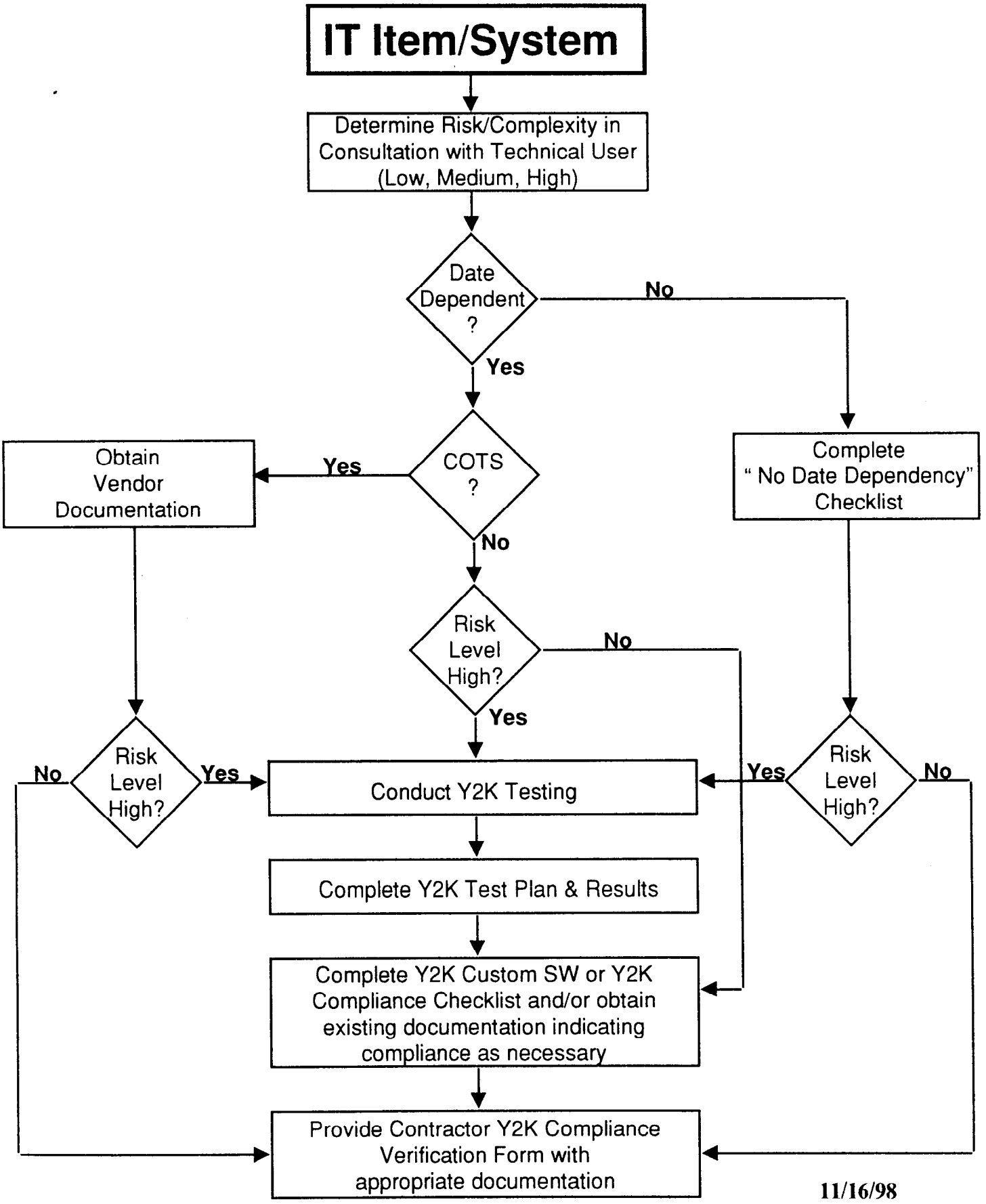
Answer: A women-owned small business qualifies as a small disadvantaged business only if it meets the definition of a SDB concern in FAR 19.001.

Enclosure 1

Exhibit F, Y2K Guideline and Compliance Verification Form, is released with this Amendment 2 as a Microsoft PowerPoint Document. See applicable file.

NASA LaRC Y2K Guideline for Documentation and Testing Requirements

BASED ON "NASA YEAR 2000 AGENCY TEST AND CERTIFICATION GUIDELINES AND REQUIREMENTS"



11/16/98

Contractor Y2K Compliance Verification Form

NASA Langley Research Center

IT Item Name/System: _____ **Risk/Complexity Level (High, Medium, Low):** _____

Brief Description:

Facility/Lab *(if applicable)*: _____ **Organization:** _____

Documentation (check the applicable attachments)*(Refer to the "NASA Year 2000 Agency Test and Certification Guidelines and Requirements" and the "NASA LaRC Y2K Guideline for Documentation and Testing Requirements" for guidance.)*

- ☐ "No Date Dependency" Checklist
- ☐ Vendor Documentation for COTS Products (Software, Hardware, Firmware)

  Specify: _____
- ☐ Y2K Test Plan
- ☐ Y2K Test Results
- ☐ Y2K Custom Software Compliance Checklist
- ☐ Y2K Compliance Checklist
- ☐ Other existing documentation indicating compliance, e.g. system documentation

  Specify: _____

Comments:

I certify the IT Item/System identified has been assessed for Y2K compliance using the NASA and Langley Research Center Year 2000 test and certification guidelines and requirements as guidance and that the IT Item/System is compliant as reflected in the attachments.

Contractor Company Name: _____

Contractor Official: _____ _____

Typed Name and Signature *Date*

Concurrence:

NASA COTR/Technical Monitor

_____ _____

Typed Name and Signature *Date*

Enclosure 2

PART IV - REPRESENTATIONS AND INSTRUCTIONS

SECTION K - REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF OFFERORS

IMPORTANT NOTE: See Section I Clause 52.219-23, Notice of Price Evaluation Adjustment for Small Disadvantaged Business (SDB) Concerns (OCT 98). Those SDB concerns electing to waive the adjustment must check Paragraph (c) of the clause. See also Section I clause 52.219-4, Notice of Price Evaluation Preference for HUBZone Small Business Concerns (JAN 1999). Those SDB concerns electing to waive the adjustment must check Paragraph (c) of the clause.

K.1 CERTIFICATE OF INDEPENDENT PRICE DETERMINATION (FAR 52.203-2) (APR 1985)

(a) The offeror certifies that -

(1) The prices in this offer have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other offeror or competitor relating to (i) those prices, (ii) the intention to submit an offer, or (iii) the methods or factors used to calculate the prices offered;

(2) The prices in this offer have not been and will not be knowingly disclosed by the offeror, directly or indirectly, to any other offeror or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and

(3) No attempt has been made or will be made by the offeror to induce any other concern to submit or not to submit an offer for the purpose of restricting competition.

(b) Each signature on the offer is considered to be a certification by the signatory that the signatory -

(1) Is the person in the offeror's organization responsible for determining the prices being offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above; or

(2) (i) Has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above (insert full name of person(s) in the offeror's organization responsible for determining the prices offered in this bid or proposal and the title of his or her position in the offeror's organization);

(ii) As an authorized agent does certify that the principals named in subdivision (b)(2)(i) above have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above; and

(iii) As an agent, has not personally participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above.

(c) If the offeror deletes or modifies subparagraph (a)(2) above, the offeror must furnish with its offer a signed statement setting forth in detail the circumstances of the disclosure.

K.2 CERTIFICATION AND DISCLOSURE REGARDING PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (FAR 52.203-11) (APR 1991)

(a) The definitions and prohibitions contained in the clause, at FAR 52.203-12, Limitation on Payments to Influence Certain Federal Transactions, included in this solicitation, are hereby incorporated by reference in paragraph (b) of this certification.

(b) The offeror, by signing its offer, hereby certifies to the best of his or her knowledge and belief, that on or after December 23, 1989, -

(1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

( ) Corporate entity (tax-exempt);

( ) Government entity (Federal, State, or local);

( ) Foreign government;

( ) International organization per 26 CFR 1.6049-4;

( ) Other _____.

(f) Common parent.

( ) Offeror is not owned or controlled by a common parent as defined in Paragraph (a) of this provision.

( ) Name and TIN of common parent:

Name _____

TIN _____

K.4 WOMEN-OWNED BUSINESS (FAR 52.204-5) (OCT 1995)

(a) *Representation.* The offeror represents that it [ ] is, [ ] is not a women-owned business concern.

(b) *Definition.* "Women-owned business concern," as used in this provision, means a concern which is at least 51 percent owned by one or more women; or in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and whose management and daily business operations are controlled by one or more women.

K.5 CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS (FAR 52.209-5) (MAR 1996)

(a)(1) The Offeror certifies, to the best of its knowledge and belief, that -

(i) The Offeror and/or any of its Principals -

(A) Are ( ) are not ( ) presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;

(B) Have ( ) have not ( ), within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

(C) Are ( ) are not ( ) presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in subdivision (a)(1)(i)(B) of this provision.

(ii) The Offeror has ( ) has not ( ), within a three-year period preceding this offer, had one or more contracts terminated for default by any Federal agency.

(2) "Principals," for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

THIS CERTIFICATION CONCERNS A MATTER WITHIN THE JURISDICTION OF AN AGENCY OF THE UNITED STATES AND THE MAKING OF A FALSE, FICTITIOUS, OR FRAUDULENT CERTIFICATION MAY RENDER THE MAKER SUBJECT TO PROSECUTION UNDER SECTION 1001, TITLE 18, UNITED STATES CODE.

(b) The Offeror shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

(c) A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the

Offeror's responsibility. Failure of the Offeror to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Offeror nonresponsible.

(d) Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of an Offeror is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

(e) The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Offeror knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

K.6 TYPE OF BUSINESS ORGANIZATION (FAR 52.215-4) (OCT 1997)

The offeror or respondent, by checking the applicable box, represents that--

(a) It operates as ☐ an individual, ☐ a partnership, ☐ a nonprofit organization, ☐ a joint venture, or ☐ a corporation incorporated under the laws of the State of _____.

(b) If the offeror or respondent is a foreign entity, it operates as ☐ an individual, ☐ a partnership, ☐ a nonprofit organization, ☐ a joint venture, or ☐ a corporation, registered for business in _____*(country)*.

K.7 SMALL BUSINESS PROGRAM REPRESENTATIONS (FAR 52.219-1 (OCT 1998)-- ALTERNATE I (OCT 1998) AND ALTERNATE II (JAN 1999)

(a) (1) The standard industrial classification (SIC) code for this acquisition is 8744.

(2) The small business size standard is $20,000,000.

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

(b) Representations. (1) The offeror represents as part of its offer that it ☐ is, ☐is not a small business concern.

(2) (Complete only if offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents, for general statistical purposes, that it ☐ is, ☐ is not, a small disadvantaged business concern as defined in 13 CFR 124.1002.

(3) (Complete only if offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents as part of its offer that it ☐ is, ☐ is not a women-owned small business concern.

(4) (Complete if offeror represented itself as disadvantaged in paragraph (b)(2) of this provision). [The offeror shall check the category in which its ownership falls]:

☐ Black American.

☐ Hispanic American.

☐ Native American (American Indians, Eskimos, Aleuts, or Native Hawaiians).

☐ Asian-Pacific American (persons with origins from Burma, Thailand, Malaysia, Indonesia, Singapore, Brunei, Japan, China, Taiwan, Laos, Cambodia (Kampuchea), Vietnam, Korea, The Philippines, U.S. Trust Territory of the Pacific Islands (Republic of Palau), Republic of the Marshall Islands, Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam, Samoa, Macao, Hong Kong, Fiji, Tonga, Kiribati, Tuvalu, or Nauru).

☐ Subcontinent Asian (Asian-Indian) American (persons with origins from India, Pakistan, Bangladesh, Sri Lanka, Bhutan, the Maldives Islands, or Nepal).

☐ Individual/concern, other than one of the preceding.

(5) [Complete only if offeror represented itself as a small business concern in paragraph (b)(1) of this provision.] The offeror represents, as part of its offer, that--

(i) It ☐ is, ☐ is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration, and no material change in ownership and control, principal place of ownership, or HUBZone employee percentage has occurred since it was certified by the Small Business Administration in accordance with 13 CFR part 126; and

(ii) It ☐ is, ☐ is not a joint venture that complies with the requirements of 13 CFR part 126, and the representation in paragraph (b)(5)(i) of this provision is accurate for the HUBZone small business concern or concerns that are participating in the joint venture. [The offeror shall enter the name or names of the HUBZone small business concern or concerns that are participating in the joint venture: _____.] Each HUBZone small business concern participating in the joint venture shall submit a separate signed copy of the HUBZone representation.

(c) Definitions.

"Small business concern," as used in this provision, means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR part 121 and the size standard in paragraph (a) of this provision.

"Woman-owned small business concern," as used in this provision, means a small business concern--

(1) Which is at least 51 percent owned by one or more women or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and

(2) Whose management and daily business operations are controlled by one or more women.

(d) Notice. (1) If this solicitation is for supplies and has been set aside, in whole or in part, for small business concerns, then the clause in this solicitation providing notice of the set-aside contains restrictions on the source of the end items to be furnished.

(2) Under 15 U.S.C. 645(d), any person who misrepresents a firm's status as a small or small disadvantaged business concern in order to obtain a contract to be awarded under the preference programs established pursuant to section 8(a), 8(d), 9, or 15 of the Small Business Act or any other provision of Federal law that specifically references section 8(d) for a definition of program eligibility, shall--

(i) Be punished by imposition of fine, imprisonment, or both;

(ii) Be subject to administrative remedies, including suspension and debarment; and

(iii) Be ineligible for participation in programs conducted under the authority of the Act.

K.8 SMALL DISADVANTAGED BUSINESS STATUS (FAR 52.219-22) (OCT 1998) ALTERNATE I (OCT 1998)

(a) General. This provision is used to assess an offeror's small disadvantaged business status for the purpose of obtaining a benefit on this solicitation. Status as a small business and status as a small disadvantaged business for general statistical purposes is covered by the provision at FAR 52.219-1, Small Business Program Representation.

(b) Representations. (1) General. The offeror represents, as part of its offer, that it is a small business under the size standard applicable to this acquisition; and either--

☐ (i) It has received certification by the Small Business Administration as a small disadvantaged business concern consistent with 13 CFR 124, Subpart B; and

(A) No material change in disadvantaged ownership and control has occurred since its certification;

(B) Where the concern is owned by one or more disadvantaged individuals, the net worth of each individual upon whom the certification is based does not exceed $750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and

(C) It is listed, on the date of this representation, on the register of small disadvantaged business concerns maintained by the Small Business Administration; or

☐ (ii) It has submitted a completed application to the Small Business Administration or a Private Certifier to be certified as a small disadvantaged business concern in accordance with 13 CFR 124, Subpart B, and a decision on that application is pending, and that no material change in disadvantaged ownership and control has occurred since its application was submitted.

(2) ☐ For Joint Ventures. The offeror represents, as part of its offer, that it is a joint venture that complies with the requirements at 13 CFR 124.1002(f) and that the representation in Paragraph (b)(1) of this provision is accurate for the small disadvantaged business concern that is participating in the joint venture. [The offeror shall enter the name of the small disadvantaged business concern that is participating in the joint venture: _____.]

(3) Address. The offeror represents that its address ☐ is, ☐ is not in a region for which a small disadvantaged business procurement mechanism is authorized and its address has not changed since its certification as a small disadvantaged business concern or submission of its application for certification. The list of authorized small disadvantaged business procurement mechanisms and regions is posted at http://www.arnet.gov/References/sdbadjustments.htm. The offeror shall use the list in effect on the date of this solicitation. "Address," as used in this provision, means the address of the offeror as listed on the Small Business Administration's register of small disadvantaged business concerns or the address on the completed application that the concern has submitted to the Small Business Administration or a Private Certifier in accordance with 13 CFR part 124, subpart B. For joint ventures, "address" refers to the address of the small disadvantaged business concern that is participating in the joint venture.

(c) Penalties and Remedies. Anyone who misrepresents any aspects of the disadvantaged status of a concern for the purposes of securing a contract or subcontract shall--

(1) Be punished by imposition of a fine, imprisonment, or both;
(2) Be subject to administrative remedies, including suspension and debarment; and
(3) Be ineligible for participation in programs conducted under the authority of the Small Business Act.

K.9 PROHIBITION OF SEGREGATED FACILITIES (FAR 52.222-21) (FEB 1999)

(a) "Segregated facilities," as used in this clause, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees, that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex, or national origin because of written or oral policies or employee custom. The term does not include separate or single-user rest rooms or necessary dressing or sleeping areas provided to assure privacy between the sexes.
(b) The Contractor agrees that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The Contractor agrees that a breach of this clause is a violation of the Equal Opportunity clause in this contract.
(c) The Contractor shall include this clause in every subcontract and purchase order that is subject to the Equal Opportunity clause of this contract.

K.10 PREVIOUS CONTRACTS AND COMPLIANCE REPORTS (FAR 52.222-22) (FEB 1999)

The offeror represents that--

(a) It ☐ has, ☐ has not participated in a previous contract or subcontract subject the Equal Opportunity clause of this solicitation;

(b) It ☐ has, ☐ has not filed all required compliance reports; and

(c) Representations indicating submission of required compliance reports, signed by proposed subcontractors, will be obtained before subcontract awards.

K.11 AFFIRMATIVE ACTION COMPLIANCE (FAR 52.222-25) (APR 1984)

The offeror represents that (a) it ( ) has developed and has on file, ( ) has not developed and does not have on file, at each establishment, affirmative action programs required by the rules and regulations of the Secretary of Labor (41 CFR 60-1 and 60-2), or (b) it ( ) has not previously had contracts subject to the written affirmative action programs requirement of the rules and regulations of the Secretary of Labor.

K.12 CLEAN AIR AND WATER CERTIFICATION (FAR 52.223-1) (APR 1984)

The offeror certifies that -
(a facility to be used in the performance of this proposed contract ( ) is, ( ) is not, listed on the Environmental Protection Agency List of Violating Facilities;
(b) The offeror will immediately notify the Contracting Officer, before award, of the receipt of any communication from the Administrator, or a designee, of the Environmental Protection Agency, indicating that any facility that the offeror proposes to use for the performance of the contract is under consideration to be listed on the EPA List of Violating Facilities; and
(c) The offeror will include a certification substantially the same as this certification, including this paragraph (c), in every nonexempt subcontract.

K.13 CERTIFICATION OF TOXIC CHEMICAL RELEASE REPORTING (FAR 52.223-13) (OCT 1996)

(a) Submission of this certification is a prerequisite for making or entering into this contract imposed by Executive Order 12969, August 8, 1995.

(b) By signing this offer, the offeror certifies that—

(1) As the owner or operator of facilities that will be used in the performance of this contract that are subject to the filing and reporting requirements described in sectin313 of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023) and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106), the

offeror will file and continue to file for such facilities for the life of the contract the Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of EPCRA and section 6607 of PPA; or

(2) None of its owned or operated facilities to be used in the performance of this contract is subject to the Form R filing and reporting requirements because each such facility is exempt for at least one of the following reasons: (Check each block that is applicable.)

☐ (i) The facility does not manufacture, process, or otherwise use any toxic chemicals listed under section 313(c) of EPCRA, 42 U.S.C. 11023(c);

☐ (ii) The facility does not have 10 or more full-time employees as specified in section 313(b)(1)(A) of EPCRA, 42 U.S.C. 11023(b)(1)(A);

☐ (iii) The facility does not meet the reporting thresholds of toxic chemicals established under section 313(f) of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);

☐ (iv) The facility does not fall within Standard Industrial Classification Code (SIC) designations 20 through 39 as set forth in section 19.102 of the Federal Acquisition Regulation; or

☐ (v) The facility is not located within any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Northern Mariana Islands, or any other territory or possession over which the United States has jurisdiction.

K.14 BUY AMERICAN CERTIFICATE (FAR 52.225-1) (DEC 1989)

The offeror certifies that each end product, except those listed below, is a domestic end product (as defined in the clause entitled "Buy American Act - Supplies"), and that components of unknown origin are considered to have been mined, produced, or manufactured outside the United States.

Excluded End Products	Country of Origin

(List as necessary)

Offerors may obtain from the Contracting Officer lists of articles, materials, and supplies excepted from the Buy American Act.

K.15 COST ACCOUNTING STANDARDS NOTICES AND CERTIFICATION (FAR 52.230-1) (APR 1998)

NOTE: This notice does not apply to small businesses or foreign governments. This notice is in three parts, identified by Roman numerals I through III.

Offerors shall examine each part and provide the requested information in order to determine Cost Accounting Standards (CAS) requirements applicable to any resultant contract.

If the offeror is an educational institution, Part II does not apply unless the contemplated contract will be subject to full or modified CAS coverage pursuant to 48 CFR 9903.201-2(c)(5) or 9903.201-2(c)(6), respectively.

I. DISCLOSURE STATEMENT--COST ACCOUNTING PRACTICES AND CERTIFICATION

(a) Any contract in excess of $500,000 resulting from this solicitation will be subject to the requirements of the Cost Accounting Standards Board (48 CFR Chapter 99), except for those contracts which are exempt as specified in 48 CFR 9903.201-1.

(b) Any offeror submitting a proposal which, if accepted, will result in a contract subject to the requirements of 48 CFR Chapter 99 must, as a condition of contracting, submit a Disclosure Statement as required by 48 CFR 9903.202. When required, the Disclosure Statement must be submitted as a part of the offeror's proposal under this solicitation unless the offeror has already submitted a Disclosure Statement disclosing the practices used in connection with the pricing of this proposal. If an applicable Disclosure Statement has already been submitted, the offeror may satisfy the requirement for submission by providing the information requested in paragraph (c) of Part I of this provision.

CAUTION: In the absence of specific regulations or agreement, a practice disclosed in a Disclosure Statement shall not, by virtue of such disclosure, be deemed to be a proper, approved, or agreed-to practice for pricing proposals or accumulating and reporting contract performance cost data.

(c) Check the appropriate box below:

_____ (1) Certificate of Concurrent Submission of Disclosure Statement.

The offeror hereby certifies that, as a part of the offer, copies of the Disclosure Statement have been submitted as follows: (i) original and one copy to the cognizant Administrative Contracting Officer (ACO) or cognizant Federal agency official authorized to act in that capacity (Federal official), as applicable, and (ii) one copy to the cognizant Federal auditor.

(Disclosure must be on Form No. CASB DS-1 or CASB DS-2, as applicable. Forms may be obtained from the cognizant ACO or Federal official and/or from the loose-leaf version of the Federal Acquisition Regulation.)

Date of Disclosure Statement:_____

_____

Name and Address of Cognizant ACO or Federal Official Where Filed:

_____

_____

_____

The offeror further certifies that the practices used in estimating costs in pricing this proposal are consistent with the cost accounting practices disclosed in the Disclosure Statement.

_____ (2) Certificate of Previously Submitted Disclosure Statement.

The offeror hereby certifies that the required Disclosure Statement was filed as follows:
Date of Disclosure Statement:_____

_____

Name and Address of Cognizant ACO or Federal Official Where Filed:

_____

_____

_____

The offeror further certifies that the practices used in estimating costs in pricing this proposal are consistent with the cost accounting practices disclosed in the applicable Disclosure Statement.

_____ (3) Certificate of Monetary Exemption.

The offeror hereby certifies that the offeror, together with all divisions, subsidiaries, and affiliates under common control, did not receive net awards of negotiated prime contracts and subcontracts subject to CAS totaling more than $25 million (of which at least one award exceeded $1 million) in the cost accounting period immediately

(b) The offeror ( ) does, ( ) does not request additional Government provided property for use in performing any contract awarded as a result of this solicitation. If the offeror requests additional Government-provided property, the offeror must furnish --

(1) Identification of the property, quantity, and estimated acquisition cost of each item; and

(2) The offeror's written statement of its inability to obtain facilities as prescribed by FAR 45.302-1(a)(4).

(c) If the offeror intends to use any Government property (paragraph (a) or (b) of this provision), the offer must also furnish the following:

(1) The date of the last Government review of the offeror's property control and accounting system, actions taken to correct any deficiencies found, and the name and telephone number of the cognizant property administrator.

(2) A statement that the offeror has reviewed, understands, and can comply with all property management and accounting procedures in the solicitation, FAR Subpart 45.5, and NFS Subparts 1845.5 and 1845.71.

(3) A statement indicating whether or not the costs associated with paragraph (2) of this provision, including plant clearance and/or plant reconversion costs, are included in its cost proposal.

K.17 MANDATORY INFORMATION FOR ELECTRONIC FUNDS TRANSFER (LaRC 52.232-105) (MAR 1998)

You are required to furnish the following financial institution information. This information will be used by the Treasury Department to transmit payment data, by electronic means to vendor's financial institution. Failure to provide the requested information may delay or prevent the receipt of payments through the Automated Clearing House Payment System.

FINANCIAL INSTITUTION INFORMATION

NAME OF FINANCIAL INSTITUTION:			
ADDRESS:			
CITY:	STATE:	ZIP CODE:	
ACH COORDINATOR NAME:		TELEPHONE NUMBER: ( )	
NINE-DIGIT ROUTING TRANSIT NUMBER: ___ ___ ___ ___ ___ ___ ___ ___ ___			
DEPOSITOR ACCOUNT TITLE:		DEPOSITOR TIN #:	
DEPOSITOR ACCOUNT NUMBER:		LOCKBOX NUMBER:	
TYPE OF ACCOUNT:	☐ CHECKING	☐ SAVINGS	☐ LOCKBOX
SIGNATURE AND TITLE OF AUTHORIZED OFFICIAL: (Could be the same as ACH Coordinator)		TELEPHONE NUMBER: ( )	

K.18 COMPLIANCE WITH VETERANS' EMPLOYMENT REPORTING REQUIREMENTS (FEBRUARY 1999)

By submission of its offer, the offeror represents that, if it is subject to the reporting requirements of 37 U.S.C. 4212(d) (i.e., the VETS-100 report required by Federal Acquisition Regulation clause 52.222-37, Employment Reports on Disabled Veterans and Veterans of the Vietnam Era), it has submitted the most recent report required by 37 U.S.C. 4212(d)."

This Section J attachments was released under Amendment 2 dated March 2, 1999, to the final RFP.

SECTION J: LIST OF ATTACHMENTS

Note: The numbering system used in these attachments is designed so that the number of the Attachment refers back to the Section it supports (i.e., J-C for Section C; J-H for Section H, etc.) and a category (i.e., J-C1 for category 1 - Inventory of Buildings, Structures, Equipment, and/or Systems; J-C2 for category 2 - Government Furnished Facilities; etc.). Each category (1, 2, etc.) consists of one or more attachments, numbered for that category and a specific subsection. (J-C6-25, for example, is the List of Required Reports for Fire Protection and Life Safety Systems supporting Subsection C.25 of Section C; and J-C17-22 represents the Cooling Tower Systems Chemical Treatment Requirements supporting Subsection C.22 of Section C).

The references at the beginning of an Attachment refer the user to the most applicable subsection or clause in Section C where the subject matter is discussed. Other clauses may be pertinent, but are not individually referenced. Attachments which have been revised for the final RFP release have been designated accordingly. For example: J-C1-28Arev has replaced J-C1-28A

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NUMBER TITLE

ATTACHMENT NUMBER	TITLE
J-C11	Failure Code Data
-11A	Failure Code Status
-11B	Failure Code List
J-C12	Computerized Maintenance Management System (CMMS) Maximo®
J-C13	Reference/Location Maps and Drawings
-23A	List of High and Low Voltage Electrical Distribution System Drawings - One Line Switching Diagrams/Main Substations
-23B	List of High and Low Voltage Electrical System Drawings – Unit Substations
-23C	List of High and Low Voltage Electrical Distribution System Drawings - Subsurface Utilities and Manhole Development Drawings
-24A	List of Drawings for Steam Distribution Systems
-24B	List of Drawings for Natural Gas Distribution Systems
-29	List of Drawings for Potable Water Distribution System
-30	List of Drawings for Sanitary Sewer System
-31	List of Drawings for Compressed Air Distribution System
J-C14-21	Roofing Inspection Schedule
J-C15-17	Corrosion Control Projects History
J-C16-22	HVAC Filter Sizes by Facility
J-C17-22rev	Cooling Tower Systems Chemical Treatment Requirements
J-C18	Water Treatment
-22Arev	Water Treatment - Closed Loop Chemical Requirements
-22B	Water Treatment - Closed Loop Chemical Consumption
-24	Water Treatment – Chemical Consumption for LaRC Boilers
J-C19-17rev	Corrosion Control and Coating Services Paint Schedule
J-C21	Requirements for Removing Snow and Ice
-27A	Requirements for Removing Snow and Ice – Inventory of Roads and Parking Lots
-27B	Snow and Ice Priorities
-27C	Priorities for Wheelchair Users
J-C23	USEPA Letter re: Disposal of PCB Bushings
J-C25	List of Meters to be Read
J-C27	Energy Management and Control System
-15Arev	General Description of the Energy Management and Control System
-15B	Energy Management and Control System Equipment

ATTACHMENT NUMBER	TITLE
J-C30rev	SPECSINTACT Table of Contents
J-C33	Equipment Procurement Clauses and In-Service and Acceptance Criteria
J-H1rev	Directives/ Reference Manuals/Publications
J-TOCrev2	Table of Contents, Section J

ATTACHMENT J-C1-23B

INVENTORY OF BATTERY BANKS

There are 18 battery banks that are located in either research facilities or substations. They are:

Building	Number of Cells	Building	Number of Cells
581	60	642	60
648	60	720	11
1146	60	1147	60
1212B	60	1233	60
1236	60	1239	60
1241	60	1247F	60
1251	60	1253	60
1256	24	1266	60
1268	24	**1235**	**60**

There are 4 battery banks that support the Communication Facilities that are utilized for UPS. They are:

Building	Number of Cells	Building	Number of Cells
641	24	1201	48
1211	24	1300	24

ATTACHM

TOOLS AND MISCEL

The following tools and items of equipment will be made available for Section C5. "GOVERNMENT FURNISHED PROPERTY AND SER

Quantity	Serial No.	FESS Number
1		
2		
1		140
1		141
5		
1		
1		
1	44799	424681
1		424659
1		156875
3		**2201,** 2192, 529
2		543, 2047
1		76
1		116
1		**712**
1		665
2		2018
4		12, 13, 86, 391
1		72119
1		**2188**
1		282856
1		284229
1		531394
1	777027	G79873
1		281297
1	775229	1083880
1	777013	G79872
1		166696
1		61505
2		**1028,** 2081
1		**460**
1		**542**
3		667
1		420
1		
2		

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NT J-C3-5A

ANEOUS PROPERTY

se by the Contractor as specified in
CES."

Description
1000 Gallon Tank
1500 Gallon Tank
9 Ft. Snow Plow
9 Ft. Snow Plow
AC/DC lights, explosion proof
Acetylene cart
Acetylene torch/cart
Acetylene welder
Acetylene welder
Acetylene welder
Air compressor
Air compressor
Air grinder, 3/8"
Air Hammer
Air mixer
Airless H. Gun
AMP Meter
Amprobe Meter
Angle grinder; 4"
Analyzer, Loop
Arc welder
Arc welder
Arc welder
Arc welder
Arc welder
Arc welder
Arc welder
Arc welder
Arc welder
Band Saw
Barrel cart
Barrow, Wheel
Barrel vacuum
Bench grinder
Bender; 1 1/2" emt
Bender; 1 1/4" emt

Quantity	Serial No.	FESS Number
2		
1		
2		
3		
7		
5		
2		
1		983
1		
2		
1		
3		
10		
2		
1		
1		
1		
1		
4		
4		
160		
1		
4		
2		
2		**2144,** 2140
1		214
2		2038, 2090
3		**1009,** 2089, 1010
1		2058
2		2094, 386
3		990, 1020, 1021
2		
2		985, 986
1		121
1		
2		
1		
1		
1		
1		
2		
1		948
1		219
1		NE-1801
1		NE-1802

CONTINUED ON NEXT PAGE

Description
Bender; 1 1/4" emt
Bender; 1 3/4" emt
Bender; 1" emt
Bender; 1" emt
Bender; 1/2" emt
Bender; 3/4" emt
Bender; wire mold
Biscuit joiner Cutter
Bolt cutter
Bottle jack; 15 ton
Bottle jack; 35 ton
Bottle jack; 50 ton
C-clamp
Cable cutter
Calibrated Weight; 12,500 lbs
Calibrated Weight; 19,000 lbs
Calibrated Weight; 19,500 lbs
Calibrated Weight; 29,000 lbs
Calibrated Weights; 2,500 lbs
Calibrated Weights; 5,000 lbs
Calibrated Weights; 50 lbs
Calibrated Weights; 7,000 lbs
Calibrated Weights; 8,600 lbs
Calibrated Weights; 9,400 lbs
Calibration unit
Calibrator, Current
Calipers, dial
Calipers, Digital
Camera, DC50
Camera, Poloroid
Camera, Poloroid
Candle meter
Chain Hoist, 1 Ton
Chain Vise
Chain wrench
Chain-fall; 1 ton
Chain-fall; 1/2 ton
Chain-fall; 10 ton
Chain-fall; 2 ton
Chain-fall; 3 ton
Chain-fall; 5 ton
Chainsaw, 16"
Channel Shears
Chemical/Sand Spreader
Chemical/Sand Spreader

Quantity	Serial No.	FESS Number
1		101
1		451
1		2034
1		2035
1		405
1		1075
1		**968**
3		2127, 2128, 2129
1		967
5		
2		2032, 2033
1		154460
1		72
1		477
1		433
1		166
1		1103
1		527683
1		527684
2		645, 646
3		643, 644, 647
3		411, 2096, 2097
1		711
3		1037, 1038, 1039
1		**2125**
6		
1		
1		**1073**
2		
2		
2		
3		**2202,** 2131, 2045
2		314, 315
1		24171
1		**2,218**
1		119049
3		305, 306, 461
1		492
3		270, 2036, 2037
3		493, 1076, 2088
2		11, **2207**
2		319, 2195
2		403, 1095
6		
2		387, 460

Description
Chop saw
Chopsaw
Circuit tracer
Circuit tracer
Circular saw
Circular saw, 7 1/4"
Come-a-long, 1 3/4 ton
Come-a-long; 1 1/2
Come-a-long; 3 ton
Come-a-long; 3/4 ton
Come-a-long; 6 ton
Compound gauge
Compression tool kit
Culture incubator
Current tracer
Cut Off Machine
Cutoff saw
Dead weight tester
Dead weight tester
Descobrader
DescoBrader
Detector, leak, AC
Disc Sander
Disc Sander, Dynablade
Sander/Grinder
Dolly
Double pump; needle
Drain **Cleaner**
Dresser ratchet; #1
Dresser ratchet; #2
Dresser ratchet; #5
Drill Kit
Drill kit, 1/2"
Drill press
Drill press, **Magnetic**
Drill press
Drill, 1/2"
Drill, w/battery
Drill; 1/2"
Drill; 3/8"
Drill; 3/8" cordless
Drill; Hammer, 1/2"
Drill; Milwaukee
Drop light; fluorescent
Drum Cart

Quantity	Serial No.	FESS Number
2		1064, 1065
1		
1		1071
1		**978**
1	814-049	
1	382295	
20		
1		
1		
3		993, 994, 995
3		996, 997, 998
1		335
2		972, 973
1		
2		
3		
2		167, 168
3		105, 106, 107
4		**946,** 945, 981, 982
1		95067
1		98439
1		95066
1		95041
4		**255**-258
1		**87**
1		77
1		75
1		78
9		
2		**2216,** 318
3		2070, 2098, 2170
1		325
1		69
1	45-169	
1		1067
2		
1		

Description
Drum Cart
Drum pump
Duct lift
Dynanometer
Electrical thermometer
Elevating truck
Extension cord
Facing Tool (BCF) 1"
Facing Tool (BCF) 3"
Fan, 30"
Fan, 30"
Fish tape; 200'
Flood light; halogen
Floodlight
Floodlight; tripod
Floodlight; tripod stand
Gangbox
Gangbox
Gasket cutter
Gauge; 0-1000
Gauge; 0-10000
Gauge; 0-10000
Gauge; 0-5000
Greenlee Box
Grinder
Grinder, Angle
Grinder, Angle
Grinder, Straight
Hacksaw
Hammer drill
Hammer drill; 1/2"
Hammer drill; 3/8"
Hammer drill; 3/8"
Hand cart
Hand cart, 1000 Lb.
Hand truck
Hatch test kit; lithium chromate

Quantity	Serial No.	FESS Number
3		1002, 1003, 1030
1		1026
2		**2160, 2161**
1		1022
1		499
1		1061
2		73, 528
1		416
2		
3		85, 349, 444
1		847703
1		
2		
1		
2		
1		258241
1	7306	
1		162452
1	4692-4	
1	9959-6	
1	2959-6	
2		2039, 2040
1		2112
1		1034
1		336
1		1035
1		26495
1		939
4		
3		147, 192, 193
1		201
2		452, 453
2		238, 2046
1		2061
3		250, 118, 251
3		182, 183, 184
3		206, 207, 469
3		470, 471, 472
3		187, 208, 200
1		987
3		221, 222, 331
3		2155, 2006, 2007
3		454, 669, 1069
3		345, 346, 673

Description
Heat gun
Heat tracer
Heater, Oil Fired
Heater, propane
High torque drill; 1/2"
Hilti gun
Hilti gun
Hiltigun
Hoist; 1/2 ton
Hole shooter; 1/2"
Hydraulic bender
Hydraulic hand truck
Hydraulic jack pump
Hydraulic jack; 35 ton
Hydraulic jack; 50 ton
Hydraulic press
Hydraulic punch
Hydraulic roll-a-lift
Hydraulic roll-a-lift
Hydraulic roll-a-lift
Hydraulic roll-a-lift
Impact wrench, 1/2"
Jigsaw
Jigsaw
Jigsaw; heavy duty
Jigsaw; variable speed
Joiner plainer; 12"
Kinetic water ram
Label maker
Ladder, 10'
Ladder, 12'
Ladder, 16'
Ladder, 20'
Ladder, 6'
Ladder; 10' fiberglass
Ladder; 10' fiberglass
Ladder; 10' fiberglass
Ladder; 10' fiberglass
Ladder; 12' fiberglass
Ladder; 14' fiberglass
Ladder; 20' fiberglass
Ladder; 24' aluminum
Ladder; 24' extension
Ladder; 24' fiberglass

Quantity	Serial No.	FESS Number
2		223, 224
2		2156, 2157
3		44, 180, 45
2		2158, 2159
3		21, 178, 179
3		308, 280, 309
3		276, 467, 468
2		1084, 1085
3		2031, 20, 332
3		2062, 9, 2074
3		181, 957, 2030
2		2004, 2005
3		82, 672, 2003
2		2001, 2002
3		1062, 1063, 1072
4		
1		141
1		1427164
1		2029
4		**2180-1,** 4, 89
3		2103, 2105, 2106
2		281, 282
1		152
1		526
3		15, 970, 1031
3		1070, 1094, 2043
3		3, 119, 2095
3		**2082,** 2143, 2153
3		2150, 2151, 2152
2		**2229,** 1120
1		2054
1		2051
1		2053
2		1113, 2052
2		1108, 1109
3		1110, 1111, 1112
2		80, 944
3		79, 1074, 1077
3		940, 941, 1079
3		942, 943, 1078
1		126866
1		2010
1		57473
1		2009

Description
Ladder; 32' fiberglass
Ladder; 6' aluminum
Ladder; 8" fiberglass
Ladder; 8' aluminum
Ladder; 8' fiberglass
Ladder; 8' fiberglass
Ladder; 8' fiberglass
Ladder; 8' fiberglass
Ladder; 8' fiberglass
Ladder; 8' fiberglass
Ladder; 8' fiberglass
Ladder; aluminum
Ladder; aluminum extension, 40'
Ladder; aluminum, 12'
Ladders; 16' fiberglass
Level
Level, w/tripod
Magnetic separator
Magnetic sweeper
Megger, tester
Meter, fluke
Meter; plaster, masonery
Micrometer, 2" - 12"
Miter box, 5"
Multimeter
Multimeter
Multimeter
Multimeter, fluke
Multimeter, fluke
Nail gun
Needle gun
Needle gun
Needle gun
Needle gun
Needle gun
Needle gun
Needle Scaler
Needle Scaler
Needle Scaler
Needle Scaler
Negative air machine
Negative air machine
Negative air machine
Negative air machine

Quantity	Serial No.	FESS Number
1		741528
1		231
1		203
1		2019
1		548
2		680, 681
1		
1		
1		
2		2028, 2042
3		
1		103
1		373
1		372
3		**232,** 138, 139
1		**104**
1		
2		
1		
10		
2		
5		
1		
2		120, 502
1		132
3		2183, 2184, 2185
1		**292**
1		
1		42650
2		**2132, 2133**
1		934
1		165
1		1004
1		1005
1		228
1		776849
1	22034	
1	993	
2		259, **260**
1		1096
1		137

Description
Negative air machine
Oiler, rigid
Oven, Rod
Paint agitator
Paint mixer
Paint pot
Paint pump
Phase indicator
Phase rotation tester
Piezzo Meter
Pinch dolly
Pipe clamp/vise
Pipe cutter, 4" - 6"
Pipe cutter, 4" - 6"
Pipe stand
Pipe threader **(1/2" - 2")**
Pipe wrench; 10"
Pipe wrench; 12"
Pipe wrench; 18"
Pipe wrench; 18"
Pipe wrench; 24"
Pipe wrench; 36"
Pipe wrench; 6"
Planer
Plug set, PVC
Pneumatic grinder
Porta band
Post hole digger
Power cord; portable
Pump**, Test**
Pump, jabsco
PVC Bender
Radio; portable, 2-way
Radio; portable, 2-way
Reamer
Recovery Unit; blue
Recovery Unit; blue
Recovery Unit; green
Reel stand
Reel, Cable
Ridgid Ratchet Threader

Quantity	Serial No.	FESS Number
1		447
3		347, 352, 353
2		113, 2102
1		112
1		2044
1		97751
1		2071
1		525
3		2196, 2197, 2198
3		450, 2134, 2199
1		734
3		**1117,** 1118, **2203**
1		**678**
2		2118, 2119
1		38
1		119
2		30, **2107**
1		414
3		**2173,** 333, **428**
3		**404,** 57, **1115**
3		**2204, 2168, 2208**
1		543004
8		
1		2079
1		2080
3		979, 980, 1036
2		1042, **1043**
1		1044
1		1041
2		**2211,** 2055
1		679
203		
1	320566	
1		490
2		2017, 2148
3		473, 932, 2016
1		**2011**
1		
1		NA-1064
217		
2		4923
3		328, 329, 330

Description
Rotary Hammer, 1 1/2"
Rotary Hammer, 1 1/2"
Rotary Hammer, 1"
Roto Hammer
Rotohammer
Router
Router
Router
Sander
Sander
Sander, Air
Sander, Belt
Sander, **Floor**
Sander, Bosch
Saw, Circular
Saw, Frame and Trim
Saw, miter
Saw, port band
Saw, Reciprocating
Saw, Skil
Saw, Skil
Saw; 1/4" reversible
Scaffold ratchets
Scaffolding
Scaffolding
Screw gun
Screw shooter
Screw shooter
Screw shooter
Screwdriver, Skil/**Dewalt**
Separator, Moisture
Shackles
Sheet metal breaker
Shop vac
Shop vac, Wet/Dry
Shop vac, Wet/Dry
Shop vac; **Portable**
Shower cabinet
Shower trailer
Sling; metal
Snow Blowers
Socket Set, 3/8", 26 pc. Ea.

Quantity	Serial No.	FESS Number
1		310
6		
6		**2226,** 462 - 466
1		358
5		
7		
2		2048, 2049
1		531
1		533
1		532
1	58549	
1		394
3		
200		
1	943188	
2		383, 384
1		243
1		423006
1		220
3		320, 204, 2110
1		535
3		311, 312, 355
1		84932
3		**2083,** 2085, **2084**
2		**2121,** 131
3		1081, 1082, 2069
3		2122, 2123, 2124
3		2076, 2077, 2078
3		**2022, 2023, 2145**
3		**2212, 2212, 2214**
2		948, 2021
2		2163, 2164
2		1053, 1054
1		
1	613	15808

Description
Solder umgar
Sprague pump
Spray gun, **Graco**
Spray gun, airless
Stainless Baskets
Stainless Racks
Stamp Machine
Staple Gun
Staple Gun
Staple gun
Steel bender/breaker
Stopwatch
Strap wrench
Strap; nylon
Surface grinder
Tap Set, metric
Test Set, detector
Tilt-table
Tool kit
Torque wrench
Transit; with tripod
Tri-Stand, chain vise
Turbine blower
Vacuum
Vacuum cleaner
Vacuum cleaner, asbestos
Vacuum cleaner, asbestos
Vacuum cleaner, shoulder
Vacuum **cleaner, Wet/Dry**
Vacuum pump
Vacuum pump
Vacuum, dirt devil
Vacuum, HePA
Variac
Velometer

Quantity	Serial No.	FESS Number
2		39, 145
2		**2189,** 313
2		88, 410
4		668 - 671
2		**2182, 2194**
1		334
2		**2060**
1		
1		
2		
2		
8		
2		**2149, 2176**
1		**54**
1		**498**
1		**519**
1		**962**
2		**2102, 2225**
3		**2175, 2141, 2186**
1		**2154**
3		**2215, 2172, 2177**
1		**434**
1		**648**
1		**650**
1		**663**
3		**1114, 2117, 2224**
1		**2014**
2		**2115, 2116**
1		**290**
1		**971**
3		**950, 999, 1000**
2		**2165, 2166**
2		**2190, 2220**
2		**2209, 2210**
2		**2221, 2222**
1		**2227**
1		**2200**
1		**2205**
1		**2217**

Description
Vise
Vise, 6"
Volt/Ohm Meter
Walkboard, AL
Welder, **Lincoln**
Welding helmet
Wheel puller
Wrench, Open end 1 1/4"
Wrench; 1 1/2"
Wrench; 18" adjustable
Wrench; 24' adjustable
Wrench; adjustable
Wrench, Impact
Drill, Merchaud
Drill, B&D
Drill, Core
Drill, Rt. Angle
Drill, Skil
Drill, Dewalt
Drill, Bosch
Drill, 1/2"
Gauge, Merx.
Gauge, Dft.
Gauge, Dial
Gauge, Tooke
Meter, Fluke
Meter, Temp.
Tester, Hi-Pot
Tester, SWEO
Tester, Capacitor
Torch Set, Victor
Ladder, Wood, 12'
Cabinet, Safety
Ladder, 8', fiberglass
Vacuum Cleaner, Wet/Dry
Thermometer, Infrared
Saw, Recip.
Torch Set, Arcet
Control Base, Milwaukee

ATTACHMENT J-C3-6B

RADIOS AND BEEPERS USED ON PREVIOUS CONTRACT

The following list of radios and receivers (beepers) are provided for information purposes only.

Quantity	Item	Mfg.	Model
1	BASE STATION	Motorola	L1475A
22	RADIO-HAND HELD	Motorola	H437
2	RADIO-HAND HELD	Motorola	P200
3	RADIO-HAND HELD	Motorola	H43RFU7120
1	RADIO-HAND HELD	Motorola	D43KXA7JA5BK
2	RADIO-HAND HELD	Motorola	P93YQT20A2A
1	RADIO-HAND HELD	Motorola	C73RXB3126B (Base)
2	RADIO-HAND HELD	Motorola	H995A
2	RADIO-HAND HELD	Motorola	H43SVU7120BN
2	RADIO-HAND HELD	Motorola	H43SVU7120AN
2	RADIO-HAND HELD	Motorola	H43AALL1110BN
2	RADIO-HAND HELD	Motorola	TS3JJA1900CK
2	RADIO-HAND HELD	Motorola	H43AAU11101BN
2	RADIO-HAND HELD	Motorola	H43AAU1110N
3	RADIO-HAND HELD	Motorola	P93YPC20A2AA
3	RADIO-HAND HELD	Motorola	H43SV67120AN
2	RADIO-HAND HELD	Motorola	H43SV67120BN
6	RADIO-HAND HELD	Motorola	H43AAU1110BN
1	RADIO-HAND HELD	Motorola	P93YPC20A2A
2	RADIO-HAND HELD	Motorola	H435VU7160N

RECEIVERS, RADIOS (BEEPERS) USED ON PREVIOUS CONTRACT

Quantity	Item	Mfg.	Model
4	RADIO RECEIVERS	Motorola	A0T3NC2468AC
2	RADIO RECEIVERS	Motorola	A0T3NC2468BC
5	RADIO RECEIVERS	Motorola	A0T3NC2468C
7	RADIO RECEIVERS	Motorola	PR 3000
3	RADIO RECEIVERS	Motorola	A03EBB2468AA
1	RADIO RECEIVERS	Motorola	348BXC23HP
1	RADIO RECEIVERS	Motorola	A03CJ2468AA
1	RADIO RECEIVERS	Motorola	A03GVC5961AA

Note: The Government will provide the existing radios and beepers for up to 120 days after contract start date.

ATTACHMENT J-C3-5C
INSTALLATION ACCOUNTABLE GOVERNMENT PROPERTY
TRACKED BY NASA EQUIPMENT MANAGEMENT SYSTEM (NEMS)

The following tools and items of equipment will be made available for use by the Contractor as specified in Section C5. "GOVERNMENT FURNISHED PROPERTY AND SERVICES."

ECN	Item	Mfg.	Model	Yr. Mfg.
803485	Alarm, Gas	MSA Res.	9210L-A-P	94
803486	Alarm, Gas	MSA Res.	9210L-A-P	94
803487	Alarm, Gas	MSA Res.	9210L-A-P	94
1426450	Alignment System	Comp. Systems	Ultraspec	95
463946	Ammeter	Esterline	S21019-2	81
428033	Analyzer, Oxygen	Gastech	OX80	82
428034	Analyzer, Oxygen	Gastech	OX80	83
428038	Analyzer, Oxygen	Gastech	OX80	82
429006	Analyzer, Oxygen	Gastech	OX80	83
59552	Bender, Pipe	Greenlee	915	89
847620	Bender, Pipe	Greenlee	555SB	89
847654	Bender, Pipe	Greenlee	88ICT	89
849431	Blower	Carling	20A	89
849432	Blower	Carling	20A	89
61809	Box, Resistance	Shalltronix	6860	89
470755	Brake, Hand	Dreis	50816	81
427727	Building, Portable	Porta-Fab	88	75
138060	Cabinet, Stor.	Clean Room Inc.	DGS3283	87
424652	Cabinet, Stor.	-	SS124	83
280095	Calculator	Cannon	CP1218D	85
428110	Calibrator, Trans.	Sci. Col.	1369C	76
471983	Camera, Still	Polaroid	SX70	77
258889	Camera, TV	Sony	AVC01	86
1740339	Cart, Filter Oil	Como	122	96
1742662	Cart, Filter Oil	Sharp	L085-1032AK-KN	97
1742663	Cart, Filter Oil	Sharp	L085-1032AK-KN	97
1742664	Cart, Filter Oil	Sharp	L085-1032AK-KN	97
1742665	Cart, Filter Oil	Sharp	L085-1032AK-KN	97
1742666	Cart, Filter Oil	Sharp	L085-1032AK-KN	97
1875638	Cart, Filter Oil	Sharp	L320AWKNZ	97
1875639	Cart, Filter Oil	Sharp	L320AWKNZ	97
1742661	**Cart, Filter Oil**	**Sharp**	**L085-1032AW-KN**	**97**
1256854	Chamber, Temp.	Wyle	C106-3600	76
139918	Cleaner, Sewer	Elec. Eel	-	87
138473	Cleaner, Shoe	Ultra-Clean	2000VA1400	87
403470	Cleaner, Steam	Sioux	300Chief	83

ECN	Item	Mfg.	Model	Yr. Mfg.
533378	Cleaner, Tube	Goodway	Ram3	84
139359	Cleaner, Vacuum	Nilfisk	017916	87
549699	Cleaner, Vacuum	Nilfisk	GS82	84
1877489	Cleaner, Vacuum	Nilfisk	VT60	98
1424860	Cleaner, Wet Vac	Hepa Corp.	C81455-05	95
528712	Climber, Stair	New Design	E100	75
282250	Clinometer	Rank Prec.	TB121	85
1093121	Collector, Dust	Enviro. Cont.	ECSP18	92
1093122	Collector, Dust	Enviro. Cont.	ECSP18	92
1093123	Collector, Dust	Enviro. Cont.	ECSP18	92
1262846	Compactor, Drum	Strainrite	CCYC	94
56449	Compressor, Air	Bullard	EDP2	88
56450	Compressor, Air	Bullard	EDP2	88
1089019	Compressor, Air	Sullivan	375	91
1089035	Compressor, Air	Sullair	1300	91
1089920	Compressor, Air	Sullivan	375	91
1090338	Compressor, Air	Sullair	1300H150	91
1256061	Compressor, Air	Sullair	H1300-150DTC	93
1263359	Compressor, Air	Davey	12M125RPDD	94
1424610	Compressor, Air	Sullair	H1300-150DTC	93
268471	Compressor, Rotary	Ing. - Rand	RDL200	86
528722	Cond. Air, Trailer	Therm-Air	TME-10	63
1742755	Conditioner, Air	Topp	TRLR10	97
1742756	Conditioner, Air	Topp	TRLR10	97
1742757	Conditioner, Air	Topp	TRLR20	97
1742779	Conditioner, Air	Eng. Air	A/M 32C-5	96
53118	Container, Storage	Trailmobile	D36036	86
61202	Container, Storage	Trailmobile	-	89
139561	Container, Storage	Mil. Spec.	TN7012	87
144087	Container, Storage	Mid Atl.	-	87
144219	Container, Storage	-	-	87
259514	Container, Storage	-	-	86
847890	Container, Storage	Kawasaki	-	89
847891	Container, Storage	Kawasaki	KA150-2	89
1255517	Container, Storage	Adamson	-	93
1264202	Container, Storage	-	-	94
1739821	Container, Storage	-	-	96
1739822	Container, Storage	-	-	96
1873029	Container, Storage	-	-	97
1873030	Container, Storage	-	-	97
1089739	Controller, Mini	Doble	FZ010	91
1262271	Controller, Remote	Sci. Atl.	RTC1032B	94
284245	Controller, Temp.	Fenwal	80001-0	85
59565	Crane, Floor	Ruger	1P18A	89

ECN	Item	Mfg.	Model	Yr. Mfg.
801690	**Crimping Tool**	**Burndy**	**Y644M**	**92**
1263737	Degreaser	Better Eng.	N200P	94
1262618	Detector, Gas	Gastech	SAFETNET 400	94
126351	**Detector, Impulse**	**AVD**	**651113**	**94**
260239	Detector, Leak	UE Sys.	2000	86
1423501	Detector, Leak	Neovision	101	95
1431634	Detector, Leak	UE Sys.	UP2000	96
846683	Disk Drive Unit	HP	9153C	89
1085190	Disk Drive Unit	HP	C2213A	91
1085806	Disk Drive Unit	HP	C2213A	91
1086756	Disk Drive Unit	Imprimis	F300	91
1877409	Disk Drive Unit	Iomega	158298	98
1877412	Disk Drive Unit	Iomega	158298	98
1156450	Distillation Unit	Baron	MRR30LE	92
61606	Drill, Magnetic	Hougen	10915	89
1260542	Eliminator, Air	Brooks Ins.	SC20-4	94
1085195	Expander, In/Output	HP	98568A	91
1085196	Expander, In/Output	HP	98568A	91
57537	Fan Unit, Neg. Press.	Aero Amer.	AIR2000	88
141528	Fan Unit, Neg. Press.	Hepa Co.	AIR2000	87
1262866	Filter Unit	Negative Air	H1000V	94
1425786	Filter Unit	Velcon	T030A	95
1742393	Filter Unit	Sharp	L085-10916	97
1875754	Filter, Unit	Tri-Tool	206B	97
59541	Generator, Portable	Hunda	EX2200	89
1258503	Generator, Portable	Hunda	ES6500	93
428035	Guage, Thickness	Sonic Inst.	502	79
428036	Guage, Thickness	EG&G	5222	79
1088969	Ice Maker Machine	Manitowoc	600	91
527681	Indicator, Press.	Dresser	711	81
527682	Indicator, Press.	Dresser	711A	81
532064	Indicator, Press.	Dresser	711	81
1089737	Inst. Test Slave	Doble	F2410	91
1089738	Inst. Test, Conv.	Doble	F2500	91
1428239	Inst. Test, Conv.	Doble	F2250	96
139966	Lathe	Barber-Colman	12In	69
427601	Lathe, Engine	Springfield	S	64
138934	Lens, Motorized	Vicon Ind.	V16-160AC	87
1158414	Lift, Palet	Crown	20MT	92
849354	Lift, Personnel	Genie Ind.	PLC24	89
141913	**Locator, Fault**	**Hipotronics**	**CF70/25-12C**	**87**
470789	Lockformer	Lockformer	20	81
1093124	Machine, Abrasive	Clemco	AVS50E	92

ECN	Item	Mfg.	Model	Yr. Mfg.
1743393	Machine, Beveling	Tri-Tool	206B	97
1878628	Machine, Clean	Graymills	TEMPEST	98
1156059	Machine, Cleaning	Graymill	800A	92
1258371	Machine, Cleaning	A-BEC Ind.	PBM16R	93
1878435	Machine, Milling	W.H. Brady	LC100K	98
55350	Machine, Milling	Harding	UM	63
427597	Machine, Milling	Kerney Trecker	122	79
1877485	Machine, Recovery	Flouro-Tech	3700	98
1877486	Machine, Recovery	Flouro-Tech	3700	98
1256414	Machine, Wash	Labconco	44204FS	93
61624	Megger	Biddle	BM11	89
1260559	Meter, Fuel	Brooks, Inst.	B080ACAAAACDAAA	94
470740	Meter, Vibration	SPM Inst.	43A	79
61510	Monitor, Gas	Dynamation	1541	89
61511	Monitor, Gas	Dynamation	1541	89
61512	Monitor, Gas	Dynamation	1541	89
61513	Monitor, Gas	Dynamation	1541	89
1741765	Monitor, Gas	Ind. Sci.	LTX310	97
144510	Monitor, Tras.	Sci.-Atl.	1003B	88
258204	Monitor, TV	Matsushita	WV5470	86
G074764	Monitor, TV	Panasonics	CT2010Y	90
1084060	Monitor, TV	Sharp	XM2001	91
61640	Motor, Drive	Rigid	300	89
847808	Motor, Drive	Rigid	300	89
847611	Motor, Drive Pipe Thd	Rigid	300	89
20280	Multimeter	Fluke	77	89
21183	Multimeter	Fluke	23DNN	91
139706	Multimeter	Fluke	8060A	87
281152	Multimeter	Fluke	77	85
801852	Multimeter	Fluke	77	93
1610650	Multimeter	Yokogawa	C6611	98
1610651	Multimeter	Yokogawa	C6611	98
1877179	Multimeter	Simpson	26017	88
G076939	Multimeter	Fluke	8050A	91
1429584	Ohmmeter Digital	Biddle	247001	96
1877178	Oscilloscope	RCA	W033B	88
426357	Planer, Wood	Oliver	8In	46
1085792	Ploter, Graphics	HP	7550B	91
140385	Plotter, Graphics	HP	7550A	87
1741715	Plotter, Graphics	Calcomp Co.	24163-001	97
528688	Plow, Snow	Valk	SP75	82
144514	Power Supply	Star Micro.	AD8340	88
846276	Power Supply	Best Power	FC5KVA	89
1083976	Press, Drill	Wilton Co.	5816	91

ECN	Item	Mfg.	Model	Yr. Mfg.
1431859	Press, Drill	Milwaukee	4130-4D79	96
398784	Press, Hydraulic	Jet. Equip.	HP35	86
429812	Puller, Gear	Sealed Power	IPS5317	77
1425959	Puller, Power Cable	Greenlee	640	86
1086230	Pump, Air	Wilden	M2KT - TF	91
1089967	Pump, Air	Wilden	M4KT - TF	91
1876546	Pump, Centrifugal	Rupp	14C2F140	96
1876547	Pump, Centrifugal	Rupp	14C2F140	96
G075912	Pump, Diaphragm	Wilden	M15ST - TF	90
1159950	Pump, Gas	Teel Ind.	3P653	93
53801	Pump, Hydraulic	Greenlee	9060M3	88
61418	Pump, Liquid Transfer	Graco	218-320	89
61419	Pump, Liquid Transfer	Graco	218-320	89
61420	Pump, Liquid Transfer	Graco	218-320	89
144432	Pump, Liquid Transfer	Graco	6H733	88
1424861	Pump, Oil Filter	Schroeder	MFB2KW2K3-1-5	95
1424904	Pump, Oil Filter	Schroeder	MFB2KW2K3-1-5	95
1262847	Pump, Sewage	Eason	120EWB40	94
1260194	Pump, Spray	Graco	217-234	94
398696	Pump, Vacuum	Welch	1396	86
427508	Pump, Vacuum	Welch	1398	83
427735	Pump, Vacuum	Welch	1402B	83
1089033	Reclaimer, Refrigerant	Katy Ind.	RecoveryII	90
1423503	Reclaimer, Refrigerant	Katy Ind.	VR11	95
G076849	Reclaimer, Refrigerant	Katy Ind.	RecoveryII	91
1877487	Recorder, Signal	AM Probe	7PDM2AP	98
188063	**Recorder, Signal**	**Amprobe**	**DMII**	**99**
418640	Recorder, Strip Chart	Esterline	A601C	79
428116	Recorder, Strip Chart	Esterline	A601C	82
527680	Recorder, Strip Chart	Honeywell	153019	68
1257626	Recorder, Strip Chart	Yokogawa	375022-02	93
141917	Recorder, Video	Panasonic	AG-2200	87
1093120	Removal System	Sullair	1350	92
1093125	Removal System	Sullair	1350	92
1741658	Rescue System	WGM Safety	7A25243	97
429928	Room, Portable	Ind. Acou.	1050	75
55416	Sandblast Machine	Bowen Tools	FPRB600LB	88
55417	Sandblast Machine	Bowen Tools	FPRB600LB	88
1088962	Sandblast Machine	Schmidt Mfg.	101-0205	91
1088963	Sandblast Machine	Schmidt Mfg.	101-0205	91
1088964	Sandblast Machine	Schmidt Mfg.	101-0205	91
1088965	Sandblast Machine	Schmidt Mfg.	101-0205	91
1423493	Sandblast Machine	Univ. Equip.	365DC51	95
1090337	Sandblast System	-	MS4-25-1	91

ECN	Item	Mfg.	Model	Yr. Mfg.
426355	Sander, Disc	Oliver Mach.	34DSD	44
426360	Saw, Arbor	B&D	3558	75
424675	Saw, Band	Armstrong	Marvel8	73
424775	Saw, Band	JA Fay	940	69
426358	Saw, Band	Doall	1612-0	69
428094	Saw, Band	Grob	24In	74
463954	Saw, Band	Doall	ML	49
470758	Saw, Band	Armstrong	Marvel8	73
142885	Saw, Band	Continental	TF1-421	87
847812	Saw, Bench	Delta	34-44	89
61514	Saw, Masonry	Federal-Mogul	PS1421	89
426361	Saw, Miter	Oliver Mach.	88D	41
1262132	Saw, Table	Delta	34-790A	94
802346	Scanner	PSC Inc.	5317-3002	93
1158410	Scanner	HP	C1790A	92
1741716	Scanner	HP	HPC5117A	97
1255433	Scopemeter, Digital	Fluke	97	93
1877383	Server, Print	HP	J2591A	98
1877416	Server, Print	HP	J2591A	98
G075585	Set, Test	Siemens	PTS4	90
219651	Set, Test Relay	AVO	SR76A	85
847053	Set, Test Relay	AVO	35200	89
59134	Shower, Portable	Air Systems	S10	88
141529	Shower, Portable	Eroclean	-	87
528689	Snow Removal Unit	Western	PS75FTS	81
549570	Sprayer, Chemical	Rototec	800	84
55413	Sprayer, Paint	Speeflo	731-316	88
55415	Sprayer, Paint	Binks	98-405	88
527679	Stand, Hyd. Test	Ogden Tech.	7997KS	69
1880043	**Stacker, Hyd.**	**Mobile**	**705A**	**99**
1423474	Stripper, Traffic Line	Graco	231132	94
472999	Surface Plate	Collins	48X96X12	66
258421	Swaging Machine	Eaton Co.	4350-00553	86
284716	Swaging Machine	Crane	R21935	67
527686	Swaging Machine	Enerpac	PEM2021	76
1091934	Tank Unit, Decon.	Fisher	-	92
1091935	Tank Unit, Decon.	Fisher	-	92
1091937	Tank Unit, Decon.	Fisher	-	91
1091938	Tank Unit, Decon.	Northland	-	91
1091939	Tank Unit, Decon.	Northland	-	91
1091940	Tank Unit, Decon.	Northland	-	91
1158284	Tank Unit, Decon.	Northland	-	92
1158285	Tank Unit, Decon.	Northland	-	92
1158286	Tank Unit, Decon.	Northland	-	92

ECN	Item	Mfg.	Model	Yr. Mfg.
1158287	Tank Unit, Decon.	Northland	-	92
1158288	Tank Unit, Decon.	Northland	-	92
1158350	Tank Unit, Decon.	Northland	-	92
143663	Terminal, DAS	Wyse Tech.	WY85	87
G074137	Terminal, DAS	Intecolor	8815	90
G074138	Terminal, DAS	Intecolor	8815	90
462314	**Test Set, Relay**	**AVO**	**SR75**	**79**
1877397	Tester, Ampere	Westinghouse	-	95
1877399	Tester, Ampere	Westinghouse	-	95
60176	Tester, Cir. Bkr.	GE	TVRMS	89
428086	Tester, Cir. Bkr.	Allis-Ch.	18-468-400-501	77
428088	Tester, Cir. Bkr.	GE	TAK-T52	80
1422519	Tester, Cir. Bkr.	AVO	CBB160	94
1877393	Tester, Cir. Bkr.	Westinghouse	-	95
1877394	Tester, Cir. Bkr.	GE	TTS1	95
1877395	Tester, Cir. Bkr.	GE	TVTS1	95
1877396	Tester, Cir. Bkr.	Cutler-Hammer	DS	95
1877398	Tester, Cir. Bkr.	Cutler-Hammer	DS	95
1877400	Tester, Cir. Bkr.	GE	TVRMS2	95
1877420	Tester, Cir. Bkr.	GE	TVRMS	95
527495	Tester, Dead Wt.	Mansfield	T130	74
527692	Tester, Dead Wt.	Amtech	R100	82
527693	Tester, Dead Wt.	Mansfield	T130	74
429884	Tester, Dielectric	Hipotronics	OC60A	78
1873821	Tester, Portable	Microcom	716607t701	97
429837	Tester, Voltage	Biddle	222060	72
1880064	**Tester, XMFR**	**Vanguard**	**AFRTOID**	**99**
G077895	Trailer, Clean Room	Scotsman	WNE00831	91
548148	Transfer Unit, Oil	Schroeder	716607T701	84
548149	Transfer Unit, Oil	Schroeder	-	84
35357	Transport, Tape	Colorado Mem.	250MB	95
38121	Transport, Tape	Andataco	X80CH31	96
140854	Transport, Tape	HP	7946A	87
140855	Transport, Tape	HP	7946A	87
58267	Typewriter	Panasonic	KX-E400	88
410182	Typewriter	Remmington	SR1018CP	78
420202	Typewriter	IBM	895	73
429036	Typewriter	IBM	895	73
429669	Typewriter	IBM	895	76
462565	Typewriter	IBM	895	77
470956	Typewriter	IBM	895	74
404516	**Unit, Phase Delay**	**AVO**	**CS7B**	**84**
114014	Washer, Pressure	Graco	800087	87
1090336	Welding Machine	Miller Elec.	Bobcat2256	91

ECN	Item	Mfg.	Model	Yr. Mfg.
849554	Wrench, Hyd.	Unex	SST10	90
1084785	Wrench, Hyd.	Unex	HY1XL	90
G074948	Wrench, Hyd.	Unex	HY5XL	90
1423497	Wrench, Hyd. Pwr. Unit	Unex	SST10	91
849565	Wrench, Hyd. Torque	Unex	-	90
1425506	Wrench, Hyd. Torque	Unex	7	95
848552	Wrench, Torque	X-4 Tool	TD2000	89

NEMS GOVERNMENT FURNISHED MICRO COMPUTERS

ECN	Item	Mfg.	Model	Yr. Mfg.
1880362	**COMPUTER**	**A-Open**	**PII350**	**98**
1880363	**COMPUTER**	**A-Open**	**PII350**	**98**
1880364	**COMPUTER**	**A-Open**	**PII350**	**98**
1880042	COMPUTER	HP	MDLB180L	98
1880041	COMPUTER	HP	MDLB180L	98
1880039	**COMPUTER**	**HP**	**SEDDS2DAT**	**98**
1880040	COMPUTER	HP	SEDDS2DAT	98
1877473	COMPUTER	DTK CO	-	98
1877472	COMPUTER	DTK CO	-	98
1877471	COMPUTER	DTK CO	-	98
1877470	COMPUTER	DTK CO	-	98
1877469	COMPUTER	DTK CO	-	98
1877468	COMPUTER	DTK CO	-	98
1877413	COMPUTER	DTK CO	Quinn 57	98
1877410	COMPUTER	DTK CO	Quinn 57	98
1877407	COMPUTER	DTK CO	Quinn 57	98
1875749	COMPUTER	DTK CO	512K	98
1875611	COMPUTER	Star Gate	123868	97
1743207	COMPUTER	DTK CO	200	97
1743096	COMPUTER	DTK CO	P166	97
1743095	COMPUTER	DTK CO	P166	97
1741705	COMPUTER	DTK CO	P166	97
1741704	COMPUTER	DTK CO	P166	97
1741703	COMPUTER	DTK CO	P166	97
1741702	COMPUTER	DTK CO	P166	97
1741700	COMPUTER	DTK CO	P166	97
1741699	COMPUTER	DTK CO	P166	97
1741698	COMPUTER	DTK CO	P166	97
1741697	COMPUTER	DTK CO	P166	97
1741696	COMPUTER	DTK CO	P166	97

ECN	Item	Mfg.	Model	Yr. Mfg.
1741695	COMPUTER	DTK CO	P166	97
1431861	COMPUTER	IQ Sys.	P100MHZ	96
1431860	COMPUTER	IQ Sys.	P100MHZ	96
1431571	COMPUTER	GMR	MMT-REM2000	96
1431570	COMPUTER	GMR	MMT-REM2000	96
1431554	COMPUTER	GMR	MMT-REM2000	96
1431553	COMPUTER	GMR	MMT-REM2000	96
1431552	COMPUTER	GMR	MMT-REM2000	96
1431551	COMPUTER	GMR	MMT-REM2000	96
1431550	COMPUTER	GMR	MMT-REM2000	96
1431548	COMPUTER	GMR	MMT-REM2000	96
1431547	COMPUTER	GMR	MMT-REM2000	96
1431545	COMPUTER	GMR	MMT-REM2000	96
1426104	COMPUTER	GEM	486DX4-100	96
1426051	COMPUTER	DTK CO	486DX/100	96
1424865	COMPUTER	Everex	386/SX	95
1423029	COMPUTER	Kehtron	DVCB01	94
1423026	COMPUTER	Kehtron	DVCB01	94
1422684	COMPUTER	NCR Corp.	9035	94
1263703	COMPUTER	COMPAQ	486/SX	94
1263702	COMPUTER	COMPAQ	486/SX	94
1880050	**COMPUTER**	**COMPAQ**	**1235K6/266**	**99**
1263235	COMPUTER	Gateway 2000	CB486SX25	94
1263234	COMPUTER	Gateway 2000	4DX33	94
1263231	COMPUTER	Gateway 2000	4DX33	94
1262899	COMPUTER	COMPAQ	486SX	94
1258950	COMPUTER	Midwest	ELITE486	93
1257919	COMPUTER	Gateway 2000	MINI	93
1256062	COMPUTER	COMPAQ	PRO SIGNIA	93
1158411	COMPUTER	Gateway 2000	486/33	92
1157673	COMPUTER	DELL	53255SX	92
1092501	COMPUTER	Govt. Micro	ADS333	92
1088791	COMPUTER	Gateway 2000	386SX16	91
1877330	COMPUTER	DTK CO	EGG1	98
1877326	COMPUTER	CTK	EGG1	98
1877324	COMPUTER	CTK	EGG1	98
1086807	COMPUTER	HP	98574Y375	91
1085812	COMPUTER	HP	985744	91
1875761	COMPUTER	DTK CO	166	98
1875765	COMPUTER	CTK	EGG1	98
1875766	COMPUTER	CTK	EGG1	98
1878434	COMPUTER	DTK	Pentium	98
1880044	**COMPUTER**	**Inteva**	**PII300**	**99**

ECN	Item	Mfg.	Model	Yr. Mfg.
1880045	**COMPUTER**	**Inteva**	**PII300**	**99**
1880046	**COMPUTER**	**Inteva**	**PII300**	**99**
1880049	**COMPUTER**	**A-Open**	**WIN9x100N**	**99**

NEMS GOVERNMENT FURNISHED DISPLAY UNITS

ECN	Item	Mfg.	Model	Yr. Mfg.
1877479	DISPLAY UNIT	CTX Int.	EX900	98
1877478	DISPLAY UNIT	CTX Int.	VL700	98
1877477	DISPLAY UNIT	CTX Int.	VL700	98
1877476	DISPLAY UNIT	CTX Int.	VL700	98
1877475	DISPLAY UNIT	CTX Int.	VL700	98
1877474	DISPLAY UNIT	CTX Int.	VL700	98
1877414	DISPLAY UNIT	CTX Int.	DL700	98
1877411	DISPLAY UNIT	CTX Int.	DL700	98
1877408	DISPLAY UNIT	CTX Int.	DL700	98
1875612	DISPLAY UNIT	AOC	CM335MG	97
1743098	DISPLAY UNIT	ADC Int.	21HLR	97
1743097	DISPLAY UNIT	ADC Int.	21HLR	97
1743045	DISPLAY UNIT	Apple	Apple Vision 1710	97
1741712	DISPLAY UNIT	ADC Int.	21HLR	97
1741711	DISPLAY UNIT	ADC Int.	21HLR	97
1741710	DISPLAY UNIT	ADC Int.	21HLR	97
1741709	DISPLAY UNIT	ADC Int.	21HLR	97
1741708	DISPLAY UNIT	ADC Int.	21HLR	97
1741707	DISPLAY UNIT	ADC Int.	21HLR	97
1741706	DISPLAY UNIT	ADC Int.	21HLR	97
1880090	**DISPLAY UNIT**	**HP**	**A4575A**	**99**
1880091	**DISPLAY UNIT**	**HP**	**A4575A**	**99**
1741657	DISPLAY UNIT	CTX Int.	2085GM	97
1741656	DISPLAY UNIT	Apple	M2935	97
1740454	DISPLAY UNIT	Mag Tech.	DX1795	96
1430409	DISPLAY UNIT	Micron	15FGX	96
1264097	DISPLAY UNIT	Gateway 2000	C51776LE	94
1431863	DISPLAY UNIT	IQ Sys.	SVGA	96
1431862	DISPLAY UNIT	IQ Sys.	SVGA	96
1431582	DISPLAY UNIT	MAG Tech.	DX1795	96
1431581	DISPLAY UNIT	MAG Tech.	DX1795	96
1431580	DISPLAY UNIT	MAG Tech.	DX1795	96
1431579	DISPLAY UNIT	MAG Tech.	DX1795	96
1431578	DISPLAY UNIT	MAG Tech.	DX1795	96
1431576	DISPLAY UNIT	MAG Tech.	DX1795	96

ECN	Item	Mfg.	Model	Yr. Mfg.
1431575	DISPLAY UNIT	MAG Tech.	DX1795	96
1431574	DISPLAY UNIT	MAG Tech.	DX1795	96
1431573	DISPLAY UNIT	MAG Tech.	DX1795	96
1431572	DISPLAY UNIT	MAG Tech.	DX1795	96
1426049	DISPLAY UNIT	CTX Int.	CTX1562CLR	96
1423030	DISPLAY UNIT	NEC Sys.	5FGE	94
1423027	DISPLAY UNIT	NEC Sys.	5FGE	94
1422685	DISPLAY UNIT	NEC Sys.	JC17311VMA3	94
1263708	DISPLAY UNIT	CTX Int.	CTX1451	94
1263704	DISPLAY UNIT	CTX Int.	CTX1451	94
1263239	DISPLAY UNIT	HP	C1064A	94
1263233	DISPLAY UNIT	Gateway 2000	CS1776LE	94
1263232	DISPLAY UNIT	Gateway 2000	CS1776LE	94
1258951	DISPLAY UNIT	Imfotel	P766D	93
1257920	DISPLAY UNIT	Gateway 2000	CS1024NI2	93
1256063	DISPLAY UNIT	Tatung Co.	CM14SBS	93
1159291	DISPLAY UNIT	Viewsonics	RE1422	93
1158412	DISPLAY UNIT	Aamazing Tech.	CM8486TX	92
1157579	DISPLAY UNIT	Dell	VC10A	92
1157681	DISPLAY UNIT	Dell	VC10A	92
1155586	DISPLAY UNIT	Gateway 2000	PMV14VC	92
1091388	DISPLAY UNIT	Intel		92
1089973	DISPLAY UNIT	NEC	MULTISYNC4D	91
1088790	DISPLAY UNIT	Gateway 2000	PMV14VC	91
1877323	DISPLAY UNIT	CXT	VL700	98
1877325	DISPLAY UNIT	CXT	VL700	98
1877327	DISPLAY UNIT	CXT	VL700	98
1877331	DISPLAY UNIT	CXT	VL700	98
1086808	DISPLAY UNIT	HP	98785A	91
1085813	DISPLAY UNIT	HP	98785A	91
1875762	DISPLAY UNIT	CXT	VL500	98
1876577	DISPLAY UNIT	ADC Int.	21HLR	97
1875763	DISPLAY UNIT	CXT	VL700	98
1875764	DISPLAY UNIT	CXT	VL700	98
1875767	DISPLAY UNIT	CXT	VL500	98
1877384	DISPLAY UNIT	HP	AR3-1AV	98

NEMS GOVERNMENT FURNISHED PRINTERS

ECN	Item	Mfg.	Model	Yr. Mfg.
57028	PRINTER	EPSON	P82PA	88

ECN	Item	Mfg.	Model	Yr. Mfg.
57911	PRINTER	HP	2932A	88
59149	PRINTER	EPSON	FX80	87
61587	PRINTER	OKIDATA	GE8253A	89
61589	PRINTER	OKIDATA	GE8253A	89
61590	PRINTER	OKIDATA	GE8253A	89
61658	PRINTER	HP	2934A	89
140693	PRINTER	HP	2932A	87
140694	PRINTER	HP	2932A	87
144513	PRINTER	STAR MICRONICS	DP8340	88
280038	PRINTER	EPSON	FX80	85
533266	PRINTER	HP	2225C	85
802959	PRINTER	KROY	K2000	93
847681	PRINTER	OKIDATA	GE8253A	89
848997	PRINTER	BROTHER	HL8E	90
1085739	PRINTER	HP	33449A	91
1088420	PRINTER	HP	CP33449A	91
1088970	PRINTER	OKIDATA	321	91
1155901	PRINTER	SEIKO	CH5500S	92
1158413	PRINTER	HP	33449A	92
1160410	PRINTER	EPSON	LX810P805A	93
1258248	PRINTER	Matsushita	KXP1624	93
1261155	PRINTER	HP	560C	94
1423028	PRINTER	EPSON	LQ870	94
1423031	PRINTER	EPSON	LQ870	94
1424905	PRINTER	OKIDATA	MICROLINE321	95
1741713	PRINTER	HP	HPTL6P	97
1743394	PRINTER	OKIDATA	321	97
1743395	PRINTER	OKIDATA	320	97
1875748	PRINTER	K-SUN	6G2001M	98
1875750	PRINTER	HP	890C	98
1877180	PRINTER	Brother	PT12B	94
1877382	PRINTER	HP	6P	98
1877415	PRINTER	HP	1P-C4213A	98
1878413	PRINTER	HP	6P	98
1878414	PRINTER	HP	6P	98
G074273	PRINTER	MATSUSHITA	KX-P1124	90
G076425	PRINTER	HP	33449A	90
G077504	PRINTER	NEC	CZ805A	90
G078439	PRINTER	CPT Corp.	LP8LPR130	90
G75570	PRINTER	EPSON	FX1050	90

ATTACHMENT J-C9-4

ZONE 4 - PREVENTIVE MAINTENANCE PROGRAM

The preventive maintenance program for this zone includes the information in this attachment and Attachment J-C9-4A, PM Special Instructions. The craft designations (See Attachment J-C9-12B) column is for information only. The time in the estimated hours column includes time for Facility Coordinator notification and red tagging per Subsection C.7. Rigging time to support Preventive Maintenance is NOT included in the estimated hours. Historically, rigging support for ALL PM's has been approximately 1,000 manhours per year. The instruction codes are two (2) digit codes (See Attachment J-C9-12C and J-C9-4A, Special Instructions which are the X and Z codes).

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1133	FIRE ALARM SYSTEM	PYROTRONICS	PYROT. SYS.3	67	052	0020
				67	104	0010
1145	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1145	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1145	LIGHT, EMERGENCY BATTERY			19	026	0003
1145	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1145	LIGHT, EMERGENCY BATTERY			19	026	0003
1145	LIGHT, EMERGENCY BATTERY			19	026	0003
1145	LIGHT, EMERGENCY BATTERY			19	026	0003
1145	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1145	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1145	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1145	LIGHT, EMERGENCY BATTERY			19	026	0003
1145	FIRE ALARM SYSTEM	PYROTRONICS	SYSTEM 3	67	052	0020
1145	FIRE ALARM SYSTEM			67	052	0040
1145	WET PIPE SPRINKLER SYSTEMS	CENTRAL MFG CO	MODEL 90 2 1/2	67	004	0010
1145	SPRINKLER SYSTEMS (VALVES)	CENTRAL MFG CO.	MODEL 90 2 1/2	67	004	0020
1145	WATER FLOW DEVICES	SYSTEM SENSOR	MODEL WFD 25	33	004	0080
1145	FIRE DEPARTMENT CONNECTIONS			67	004	0005
1145	RISER FLOW TEST			67	013	0040
1145	POST INDICATOR VALVE			67	013	0020
1145	WET SYSTEM ALARM TESTING	SYSTEM SENSOR	MODEL WFD 25	67	013	0040
1145	DOMESTIC WATER VALVES 131			33	026	0005
1145	CRANE ELECTRIC HOIST .5 TON	CM METEOR HOIST W		28	052	0020
				28	260	0030

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The craft	
-- nator notification	
support	
4A,	
Instruction Code	**Date Due**
0311ASBNCSCTELEOXX	9802
ZZ	9801
0407114250	9801
0407114250	9801
0407114250	9801
0407114250	9801
0407114250	9801
0407114250	9801
0407114250	9801
0407114250	9801
0407114250	9801
0407114250	9801
0407114250	9801
0311ASBNCSCTELEOXXX1	9802
0311ASBNCSCTELEOXX	9701
03071322XXBNX1X2X3X4	9804
030713ZZXXBNX1X2X3X4	9804
0713ADZZXXX1X2X3X4BNCSCT	9804
071382XXX1X2X3X4	9804
030713XXX1X2X3X4BNCSCT	9804
030713XXX1X2X3BN	9804
030713ADXXBNCSCTX1X2	9804
EVEW	9809
BB	9808
86	9811

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1145	AIRHANDLER	FIRSTCOMPANY	FG3AA060000AAAA	30	052	0020
1145	CONDENSER	CARRIERTECH2000	38TRA060310AAA	30	052	0020
1145	CHILLER	CARRIER	30GT-015---600	30	052	0020
1145	AIRHANDLER	CARRIER	39NXV112NVL3466	30	052	0020
1145	AIR SWITCH FUSED	GENERAL ELECTRIC		13	104	0010
1145	ACB	GENERAL ELECTRIC		13	104	0010
1155	BACKFLOW PREVENTER	WATTS	900	33	052	0005
1155	BACKFLOW PREVENTER			33	052	0020
1155	AIR HANDLER	TRANE	L-10	30	017	0050
1155	AIRHANDLER	LIEBERT CHALLENGE	CU066AA0D	30	052	0030
1155	CONDENSER	LIEBERT	CSF086Z	30	052	0020
1155	EYEWASH SINK MOUNT			33	026	0005
1155	EYEWASH SINK MOUNT			33	026	0005
1155	EYEWASH SINK MOUNT			33	026	0005
1155	EYEWASH SINK MOUNT			33	026	0005
1155	EYEWASH SINK MOUNT			33	026	0005
1155	EYEWASH SINK MOUNT			33	026	0005
1155	EYEWASH SINK MOUNT			33	026	0005
1155	SWITCH,AIR 4396	LINEMETERIALIND		17	208	0020
1155	BREAKER AIR CIRCUIT	GENERAL ELECTRIC		17	104	0020
1155	BREAKER AIR CIRCUIT	GENERAL ELECTRIC		17	104	0010
1155	BREAKER AIR CIRCUIT	GENERAL ELECTRIC		17	104	0010
1155	BREAKER AIR CIRCUIT	GENERAL ELECTRIC		17	104	0010
1155	SWITCH,AIR 4476	POWERCON		17	208	0020
1155	DUMBWAITER CAP 500LB	ENERGY	432	28	260	0040
				28	026	0020
1155	AIR CLEANER (ELECTRONIC)	TEPCO, INC.	800 AND 800R	20	013	0020
1155	CONDENSOR UNIT	TRANE	RA1254E	30	052	0040
1155	CONDENSOR UNIT	CARRIER	38A8054610	30	052	0040
1155	AEROWASHER	BUFFALO FORGE		30	052	0040
1155	CHILLER (PROCESS WATER)	CARRIER	30HH030630	30	052	0050
1155	AIR HANDLER	CARRIER	39ED21	30	052	0050
1155	RACK WINCH 100 LBS CAP	SPEEDMATIC	52 "	28	260	0020
				28	052	0010
1155	MAN.HOIST 500 LBS			28	052	0020
				28	260	0040
1155	LIGHT,EMERGENCY,BATTERY			19	026	0005
1155	LIGHT,EMERGENCY,BATTERY			19	026	0005

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Instruction Code	Date Due
0711192782909193AN	9903
07111927759599ADAN	9903
0711192732909193AN	9903
0711192782909193AN	9903
07111982AJCL	0003
07111982AJBQCGCL	0003
0711XXZZ	9801
0711XXZZ	9801
0711192782909193AN	9807
07111982909193279 3AN	9903
071119759599ADAN	9903
07101319DB	9809
07101319DB	9809
07101319DB	9809
07101319DB	9809
07101319DB	9809
07101319DB	9809
07101319DB	9809
111526288285	9210
07111931328285	9212
07111931328285	9212
07111931328285	9212
07111931328285	9212
111526288285	9210
86	0006
BC	9804
112319XXZZ02	9806
07111927759599ADAN	9903
07111927759599ADAN	9903
07111927CD9190	9903
0711192782909193AN	9903
0711192782909193AN	9903
86	0103
071188	9903
071082	9903
86	0203
0407114250XX	9801
0407114250XX	9801

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1155	LIGHT, EMERGENCY BATTERY			19	026	0005
1155	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1155	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1155	FIRE ALARM SYSTEM (EDWARDS)	EDWARDS	FA10	19	052	0030
1155	WET PIPE SPRINKLER SYSTEMS	STAR SPRINKLER CO	MODEL-B-6"	33	004	0005
				33	052	0040
1155	SPRINKLER SYSTEMS (VALVES)	STAR SPRINKLER CO	MODEL-B-6"	33	004	0020
1155	WATER FLOW DEVICES	POTTER ELECTRIC	MODEL USR-B	33	004	0080
1155	FIRE DEPARTMENT CONNECTIONS			33	004	0005
1155	STANDPIPE SYSTEMS			33	104	0080
				33	052	0080
1155	RISER FLOW TEST			33	013	0040
1155	POST INDICATOR VALVE			33	013	0020
1155	WET SYSTEM ALARM TESTING			33	013	0040
1156	SWITCH,AIR 4398	LINE METERIAL IND		17	208	0030
1156	LIFTING HARNESS 30000 LB			28	052	0005
				28	260	0020
1156	LIFTING HARNESS 20000 LB			28	052	0005
				28	260	0020
1156	SPREADER BAR 15000 LB CAP			28	260	0020
				28	052	0010
1156	SPREADER BAR 10000 LB CAP			28	260	0020
				28	052	0010
1156	MAN.CRANE 1 TON	YALE	LKHH-6434420	28	052	0020
				28	260	0040
1156	BOTTLE LIFTING DEVICE			28	260	0020
1156	HEAT TAPE THERMOSTAT			19	052	0010
1156	NOTIFIER	EDWARDS		19	052	0020
1163	CONDENSER	CARRIER	38TG060610	30	052	0020
1163	AIR HANDLER	CARRIER	46AC050204-2	30	052	0080
1163	AIR DRYER	HANKISON CORP	8010	30	052	0020
1163	WATER COOLER FILTER			33	052	0005
1163	FIRE ALARM SYSTEM	PYROTRONICS	PYRO.SYS.3	67	052	0040
				19	052	0030
1183	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1183	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1183	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1183	EXIT EMERG. LIGHT, BATTERY			19	026	0002

Instruction Code	Date Due
0407114250XX	9801
0407114250	9801
0407114250	9801
0311ASBNCSCTELEOXXZZ	9806
030713ZZXXBNX1X2X3X4	9804
ZZZ11113AD03BNCSCT	9806
030713BNXXX1X2X3X4ZZ	9804
030713ADZZXXX1X2X3X4BNCSCT	9804
071382XXX1X2X3X4	9804
030713XXBNX1X2X3X4	9803
030713XXBNX1X2X3	9806
030713XXX1BNCSCTX2X3X4	9804
030713XXX1BNX2X3	9804
030713ADXXBNCSCTX1X2	9804
111526288285	9210
0718AG88	9902
86	0103
071088AG	9902
86	0103
86	0103
07AG	9902
86	0103
07AG	9902
BB	9902
86	0103
86	9908
041622	9810
0311ASBNCSCTELEOXX	9804
07111927ABAD	9903
071119278293AB	9903
07111927AB	9903
1720	9809
0311ASBNCSCTELEOADXXX1	9803
0311ASBNCSCTELEOXX	9803
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1183	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1183	LIGHT, EMERGENCY BATTERY			19	026	0003
1183	LIGHT, EMERGENCY BATTERY			19	026	0003
1183	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1183	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1183	LIGHT, EMERGENCY BATTERY			19	026	0003
1183	LIGHT, EMERGENCY BATTERY			19	026	0003
1183	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1183	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1183	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1183	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1183	FIRE ALARM SYSTEM	PYROTRONICS	CP-400	67	052	0020
1183	BARD AC UNIT	BARD	301	30	052	0010
1183	BARD AC UNIT	BARD	301	30	052	0010
1183	BARD AC UNIT	BARD	301	30	052	0010
1183	BARD AC UNIT	BARD	301	30	052	0010
1183	BARD AC UNIT	BARD	301	30	052	0010
1183	BARD AC UNIT	BARD	301	30	052	0010
1183	BARD AC UNIT	BARD	301	30	052	0010
1183	BARD AC UNIT	BARD	301	30	052	0010
1183	BARD AC UNIT	BARD	301	30	052	0010
1188	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1188	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1188	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1188	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1188	LIGHT, EMERGENCY BATTERY			19	026	0003
1188	LIGHT, EMERGENCY BATTERY			19	026	0003
1188	FIRE ALARM SYSTEM	PYROTRONICS	CP-400	67	052	0040
1188	AIRHANDLER	CARRIER	39BA050B10	30	052	0020
1188	CONDENSOR	CARRIER		30	052	0020
1188	CONDENSER	CARRIER	38AE-012-600	30	052	0020
1188	CONDENSER	CARRIER	38AE-012-600	30	052	0020
1188	AIR HANDLER	CARRIER	40RR-012-550	30	052	0020
1188	AIR HANDLER	CARRIER	40RR-012-550	30	052	0020
1188	AIR SWITCH 4576	IND.ELECT.MFG.INC		13	104	0010
1188	3 POLE ACB MAIN	SIEMENS		13	104	0020
1188	3 POLE ACB FEED BLDG 1188	SIEMENS		13	104	0020
1188	3 POLE ACB FEEDS BLDG 1189	SIEMENS		13	104	0020

Instruction Code	Date Due
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0311ASBNCSCTELEOXX	9804
0711192793AN	9903
0711192793AN	9903
0711192793AN	9903
0711192793AN	9903
0711192793AN	9903
0711192793AN	9903
0711192793AN	9903
0711192793AN	9903
0711192793AN	9903
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0311ASBNCSCTELEOXX	9804
0711192782909399ADAN	9812
0711192799ADAN	9812
07111927759599ADAN	9812
07111927759599ADAN	9812
07111927829091	9812
07111927829091	9812
07111982AJCL	9507
07111982AJBQCGCL	9507
07111982AJBQCGCL	9507
07111982AJBQCGCL	9507

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1188	3 POLE ACB (SPARE)	SIEMENS		13	104	0020
1188	3 POLE ACB FEEDS BLDG 1191	SIEMENS		13	104	0020
1188	3 POLE ACB FEEDS BLDG 1190	SIEMENS		13	104	0020
1189	CHAIN FALL 1 TON	CHESTER HOIST INC		28	260	0020
1189	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1189	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1189	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1189	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1189	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1189	LIGHT, EMERGENCY BATTERY			19	026	0003
1189	LIGHT, EMERGENCY BATTERY			19	026	0003
1189	LIGHT, EMERGENCY BATTERY			19	026	0003
1189	FIRE ALARM SYSTEM	PYROTRONICS	CP-400	67	052	0020
1189	DOMESTIC WATER VALVES 218			33	026	0005
1189	DOMESTIC WATER VALVES 221			33	026	0005
1189	DOMESTIC WATER VALVES 223			33	026	0005
1189	DOMESTIC WATER VALVES 228			33	026	0005
1189	DOMESTIC WATER VALVES 230			33	026	0005
1189	AIR HANDLER	CARRIER	40RR-012-550	30	052	0020
1189	AIR HANDLER	CARRIER	40RR-012-550	30	052	0020
1189	CONDENSER	CARRIER	38AE-012-600	30	052	0020
1189	CONDENSER	CARRIER	38AE-012-600	30	052	0020
1189	CONDENSER	YORK	H1DA036S25A	30	052	0020
1189	AIR HANDLER	YORK	M4AHD14A06A	30	052	0020
1190	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1190	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1190	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1190	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1190	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1190	LIGHT, EMERGENCY BATTERY			19	026	0002
1190	LIGHT, EMERGENCY BATTERY			19	026	0002
1190	FIRE ALARM SYSTEM	PYROTRONICS	CP-400	67	052	0020
1190	FIRE ALARM SYSTEM			67	052	0040
1190	WATER COOLER FILTER			33	052	0005
1190	AIR HANDLER	CARRIER	40RR-012-550	30	052	0020
1190	AIR HANDLER	CARRIER	40RR-012-550	30	052	0020
1190	CONDENSER	CARRIER	38AE-012-600	30	052	0020
1190	CONDENSER	CARRIER	38AE-012-600	30	052	0020

Instruction Code	Date Due
07111982AJBQCGCL	9507
07111982AJBQCGCL	9507
07111982AJBQCGCL	9507
86	0101
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0311ASBNCSCTELEOXX	9808
EVEW	9809
EVEW	9809
EVEW	9809
EVEW	9809
EVEV	9809
07111927829091	9812
07111927829091	9812
07111927759599ADAN	9812
07111927759599ADAN	9812
07111927759599ADAN	9812
07111927829091	9812
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0311ASBNCSCTELEOXX	9808
0311ASBNCSCTELEO	9604
1720	9809
07111927829091	9812
07111927829091	9812
07111927759599ADAN	9812
07111927759599ADAN	9812

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1190	SHOP LIFT	LEWIS SHEPARD	CEBR	20	052	0005
				20	260	0020
1191	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1191	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1191	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1191	LIGHT, EMERGENCY BATTERY			19	026	0003
1191	LIGHT, EMERGENCY BATTERY			19	026	0003
1191	LIGHT, EMERGENCY BATTERY			19	026	0003
1191	FIRE ALARM SYSTEM	PYROTRONICS	SYSTEM 3	67	052	0020
1191	CONDENSER	MITSUBISHI	PUH30EK	30	052	0020
1191	AIRHANDLER	MITSUBISHI	PLH30FK	30	052	0020
1191	AIRHANDLER	FIRSTCO	48MAQ4	30	052	0020
1191	CONDENSER	HEIL	CA75480KA1	30	052	0020
1194	CHILLER	CARRIER	30GB125	30	052	0050
1194	BACKFLOW PREVENTER	WATTS	900	33	052	0005
1194	RETURN AIR BLOWER	TRANE	33A	30	052	0030
1194	AIR HANDLER	TRANE	LZ-35	30	052	0020
1194	SWITCH,AIR 4044	TRIPLE E		17	208	0020
1194	SWITCH,AIR 4489	SIERRA SWBD CO		17	208	0030
1194	WATER COOLER FILTER	AMF CUNO	AP100	33	052	0005
1194	PACKAGE UNIT	LIEBERT	MM18A	30	052	0020
1194	PACKAGE UNIT	LIEBERT	CU43A	30	052	0020
1194	CONDENSER	LIEBERT	CSF-065Z	30	052	0010
1194	ELEVATOR HYDRAULIC 2000 LBS	OTIS	LRV3	28	026	0040
				28	260	0040
				28	052	0040
1194	AIR HANDLER	TRANE	MZ-21	30	052	0050
1194	AIR-HANDLER	CARRIER	39ED-13	30	052	0020
1194	CONDENSING UNIT	WESTINGHOUSE	SR020A0N	30	052	0050
1194	FAN-COIL-UNITS	CARRIER	42CK8AFL2	30	052	0030
1194	ELEVATOR HYDRAULIC 1500 LBS	WAYNE		28	026	0020
				28	052	0040
				28	260	0040
1194	LIGHT,EMERGENCY,BATTERY	DUAL LIGHT		19	026	0003
1194	LIGHT, EMERGENCY BATTERY			19	026	0002
1194	LIGHT,EMERGENCY,BATTERY			19	026	0002
1194	LIGHT, EMERGENCY, BATTERY			19	026	0002
1194	LIGHT,EMERGENCY,BATTERY	LIGHT ALARM		19	026	0002

Instruction Code	Date Due
070882	9901
86	0202
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0311ASBNCSCTELEOXX	9808
071119278290919599AD	9812
071119278290919395AN	9812
071119278290919395AN	9812
0711192795ADAN	9812
07111927829091ADAN99	9804
0711XXZZ	9801
071927829091	9804
0711192782909193AN	9805
111526288285	9205
111526288285	9205
1720XX	9809
0719222790919599CD	9804
0719222790919599CD	9804
071119222791ABADCD	9804
BC	9804
86	9711
97BQ	9807
0711192782909193AN	9804
0711192782909193AN	9805
0711192782AB	9804
0711278293ANXX	9804
BC	9804
97BQ	9901
86	0006
0407114250XXX1	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250XX	9802

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1194	LIGHT,EMERGENCY,BATTERY	DUAL LIGHT		19	026	0002
1194	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1194	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1194	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1194	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1194	LIGHT,EMERGENCY,BATTERY	DUAL LIGHT		19	026	0003
1194	EXIT EMERG. LIGHT, BATTERY	EMERGI-LITE	W-SMX12-R-120/	19	026	0002
1194	EXIT EMERG. LIGHT, BATTERY	EMERGI-LITE	W-SMX12-R-120/	19	026	0002
1194	EXIT EMERG. LIGHT, BATTERY	EMERGI-LITE	W-SMX12-R-120/	19	026	0002
1194	EXIT EMERG. LIGHT, BATTERY			19	026	0003
1194	LIGHT,EMERGENCY,BATTERY			19	026	0003
1194	LIGHT,EMERGENCY,BATTERY			19	026	0003
1194	EXIT EMERG. LIGHT, BATTERY			19	026	0003
1194	EXIT EMERG. LIGHT, BATTERY			19	026	0003
1194	EXIT EMERG. LIGHT, BATTERY			19	026	0003
1194	LIGHT,EMERGENCY,BATTERY			19	026	0003
1194	LIGHT,EMERGENCY,BATTERY			19	026	0003
1194	LIGHT,EMERGENCY,BATTERY			19	026	0003
1194	LIGHT,EMERGENCY,BATTERY			19	026	0003
1194	LIGHT,EMERGENCY,BATTERY			19	026	0003
1194	LIGHT,EMERGENCY,BATTERY			19	026	0003
1194	LIGHT,EMERGENCY,BATTERY	EMERGI-LITE	JSM18-2-AVC	19	026	0003
1194	LIGHT,EMERGENCY,BATTERY	LIGHT ALARM		19	026	0002
1194	LIGHT,EMERGENCY,BATTERY	EXIDE		19	026	0002
1194	LIGHT,EMERGENCY,BATTERY			19	026	0003
1194	LIGHT,EMERGENCY,BATTERY			19	026	0003
1194	EXIT EMERG. LIGHT, BATTERY			19	026	0003
1194	LIGHT,EMERGENCY,BATTERY			19	026	0003
1194	LIGHT,EMERGENCY,BATTERY			19	026	0003
1194	EXIT EMERG. LIGHT, BATTERY			19	026	0003
1194	LIGHT,EMERGENCY,BATTERY			19	026	0003
1194	LIGHT,EMERGENCY,BATTERY			19	026	0003
1194	FIRE ALARM SYSTEM(PYROTRON)	PYROTRONICS	SYSTEM 3	19	052	0080
				19	104	0080
1194	WET PIPE SPRINKLER SYSTEMS	STAR CORP.	MODEL D-6"	33	004	0010
				33	052	0040
1194	SPRINKLER SYSTEMS (VALVES)	STAR CORP.	MODEL D-6"	33	004	0020
1194	WATER FLOW DEVICES	POTTER ELECTRIC	MODEL USR-B	33	004	0080

Instruction Code	Date Due
0407114250XX	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250XXX1	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250XX	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0311ASBNCSCTELEOXXX1	9812
ZZ	9804
030713ZZXXBNX1X2X3X4	9804
ZZZ11113AD	9812
030713ZZXXBNX1X2X3X4	9804
030713ADZZXXBNCSCT	9804

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1194	FIRE DEPARTMENT CONNECTIONS			33	004	0005
1194	RISER FLOW TEST			33	013	0040
1194	POST INDICATOR VALVE			33	013	0020
1194	WET SYSTEM ALARM TESTING			33	013	0040
1194A	AIR HANDLER	BONN	HMZ112LF	30	052	0050
1194A	LIGHT,EMERGENCY,BATTERY	LIGHT ALARM		19	026	0002
1194A	LIGHT, EMERGENCY,BATTERY			19	026	0002
1196	LIGHT,EMERGENCY,BATTERY			19	026	0003
1196	FIREALARMSYSTEM(PYRO-CP400)			67	052	0160
1196	FIRE ALARM SYSTEM	PYROTRONICS	PYROT.CP-400	67	052	0020
1197	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1197	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1197	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1197	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1197	LIGHT, EMERGENCY BATTERY			19	026	0003
1197	LIGHT, EMERGENCY BATTERY			19	026	0003
1197	FIREALARMSYSTEM(FIRELITE)			67	052	0160
1197	FIRE ALARM SYSTEM	FIRE-LITE	FIRE-LITE 424A	67	052	0020
1197	FIRE HYDRANT VALVES 72A			33	026	0005
1198	EXIT EMERG. LIGHT, BATTERY			19	026	0003
1198	EXIT EMERG. LIGHT, BATTERY			19	026	0003
1198	FIRE ALARM SYSTEM(EDWARDS)	EDWARDS	5754-B	19	052	0080
1198	HYDRAULIC SHOPLIFT	ECONOMY ENG.	W-60	20	052	0005
				20	260	0010
1198	CONDENSING UNIT	CARRIER	09DC016620	30	052	0050
1198	AIR HANDLER	CARRIER	50BB016610	30	052	0080
1199	FUSED DISCONNECT 4405	LINE MATERIAL IND		17	208	0020
1199	INGROUND HYD.AUTOMOTIVELIFT			28	260	0020
1199	INGROUND HYD.AUTOMOTIVELIFT			28	260	0020
1199	INGROUND HYD.AUTOMOTIVELIFT			28	260	0020
1199	INGROUND HYD.AUTOMOTIVELIFT			28	260	0020
1199	INGROUND HYD.AUTOMOTIVELIFT			28	260	0020
1199	HEAT TAPE THERMOSTAT			19	052	0010
1199	COMPRESSOR,AIR			57	260	0040
1199	WATER COOLER FILTER	AMF CUNO		33	052	0005
1199	WATER COOLER FILTER	AMF-CUNO		33	052	0005
1199	PACKAGE UNIT	CARRIER	50TJ-008---511-	30	052	0060
1199	AIR HANDLER	LENNOX	B3-41-2-230	30	052	0020

Instruction Code	Date Due
071382XXX1X2X3X4	9804
030713X1XXBNCSCTX2X3X4	9804
030713X1XXBNX2X3	9804
030713ADXXBNCSCTX1X2	9804
0711192782909193AN	9804
0407114250XX	9802
0407114250	9802
0407114250XX	9802
031113ASBNXXEOCSCTEL	9804
0311ASCSCTELEOBN	9304
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
031113ASBNXXE0CSCTEL	9804
0311ASCSCTELEOBNXX	9304
EVEW	9809
0407114250	9802
0407114250	9802
0311ASBNCSCTELEOXX	9804
19738211	9903
86	0003
0711192782AB	9903
0711278290939599ADAN	9903
111526288285	9207
86	9904
86	9904
86	9904
86	9904
86	9904
041622	9810
ZZ	0004
1720XX	9809
1720XX	9809
0711278290939599ADAN	9903
07112782939599ADAN	9903

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1199	CONDENSING UNIT	HEIL	CA5036VKA1	30	052	0020
1199	CHILLER-HEAT-PUMP	CARRIER	30GQ25E500-21	30	052	0040
1199	PACKAGE A/C	BARD	24WH1	30	052	0030
1199	PACKAGE A/C	TAPPAN	PHC24-41T	30	052	0040
1199	FAN-COIL-UNITS	CARRIER	42VB7A-L2B-R-N	30	052	0240
1199	COMPRESSOR,AIR	GRAINGER W W INC	3Z745A Z	57	260	0040
1199	PACKAGE AIR CONDITIONER	MCQUAY SNYDER GEN	R132C10001	30	052	0030
1199	LIFT JACK,AIR 7 TON	LINCOLN		28	260	0020
				28	052	0005
1199	LIFT JACK,AIR 7 TON	WALKER		28	260	0020
				28	052	0005
1199	FLOOR JACK 10 TON	BLACKHAWK		28	260	0020
				28	052	0005
1199	FLOOR JACK 4 TON HYDRAULIC	LINCOLN ROLL-AROU		28	052	0005
				28	260	0020
1199	AIR LIFT JACK 7 TON	GRAY	TNT-550	28	052	0005
				28	260	0020
1199	FLOOR JACK .5 TON HYDRAULIC			28	052	0005
				28	260	0020
1199	ROLLING BOTTLE JACK 20 TON	BLACK HAWK	67415	28	260	0020
				28	052	0005
1199	FLOOR JACK 1.25 TON			28	260	0020
				28	052	0005
1199	AIR LIFT JACK 7 TON	GRAY	TNT-550	28	052	0005
				28	260	0020
1199	WHEEL JACK .75 TON	NAPA		28	052	0005
				28	260	0020
1199	FLOOR JACK 4 TON HYDRAULIC	GRAY & GREEN		28	260	0020
				28	052	0005
1199	TRANSMISSION JACK .5 TON	BLACK HAWK		28	260	0020
				28	052	0005
1199	TRANSMISSION JACK .25 TON	LINCOLN JACKS	93714	28	260	0020
				28	052	0005
1199	FLOOR JACK 2 TON	LINCOLN JACKS	93666	28	052	0005
				28	260	0020
1199	FLOOR JACK 2 TON	LINCOLN JACKS	93666	28	260	0020
				28	052	0005
1199	ROLL AROUND FLOOR JACK	BLACKHAWK	B67400	28	260	0010

Instruction Code	Date Due
071127829395ADAN	9903
071127829599ADAN	9903
07112782939599ADAN	9903
07112782939599ADAN	9903
0711278293ANXX	9903
ZZ	0004
071127829093959 9ADAN	9903
86	0303
0709101196	9903
86	0303
0709101196	9903
86	0004
0709101196	9903
0709101196	9903
86	0004
0709101196	9903
86	0303
0709101196	9903
86	0004
86	0004
0709101196	9903
86	0004
0709101196	9803
0709101196	9903
86	0303
0709101196	9903
86	0004
86	0004
0709101196	9903
86	0004
0709101196	9903
86	0004
0709101196	9903
0709101196	9903
86	0004
86	0004
0709101196	9903
86	0203

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
				28	052	0005
1199	LIGHT,EMERGENCY,BATTERY	DUAL LIGHT		19	026	0002
1199	FIRE ALARM PANEL	EDWARDS CO INC	FA 3	19	052	0060
1199	WET PIPE SPRINKLER SYSTEMS	HODGMAN MFG CO.	MODEL B-6"	33	004	0005
				33	052	0040
1199	SPRINKLER SYSTEMS (VALVES)	HODGMAN MFG CO	MODEL VSR-B	33	004	0020
1199	WATER FLOW DEVICES	POTTER ELECTRIC	MODEL VSR-B	33	004	0080
1199	FIRE DEPARTMENT CONNECTIONS			33	004	0005
1199	STANDPIPE SYSTEMS			33	104	0080
				33	052	0080
1199	RISER FLOW TEST			33	013	0040
1199	POST INDICATOR VALVE			33	013	0020
1199	WET SYSTEM ALARM TESTING			33	013	0040
1201	BACKUP POWER-BASE SIREN SYS			19	052	0020
1201	PACK A/C UNIT	COMFORTMAKER	R132C10001	30	052	0040
1201	ENVIROMENTAL-CONTROL-UNIT	LIEBERT	FH290AUA00	30	052	0030
				30	026	0010
1201	ENVIROMENTAL-CONTROL-UNIT	LIEBERT	FH290AUA00	30	052	0030
				30	026	0010
1201	CONDENSING-UNIT	LIEBERT	DCDF216A	30	052	0020
1201	CONDENSING-UNIT	LIEBERT	DCDF-349A	30	052	0020
1201	CONDENSING-UNIT	TRANE	BTA120D400AC	30	052	0020
1201	AIR-HANDLER	TRANE	E5J430A	30	052	0030
1201	CONDENSING-UNIT	LIEBERT	DMC067A-AL2	30	052	0020
1201	ENVIROMENTAL CONTROL UNIT	LIEBERT	CF06E-A00	30	052	0020
1201	CONDENSING UNIT	LIBERT	DMC037A PL2	30	052	0020
1201	MINIMATEPLUS AIR HANDLER	LIEBERT	MME036E PH1	30	052	0020
1201	3 POLE ACQ MAIN	GENERAL ELECTRIC	0324A6815-007	13	104	0010
1201	PACKAGE AIR CONDITION UNIT	CLIMATE CONTROL	R132C10001	30	052	0040
1201	SWITCH,AIR 4329	FPE		17	208	0020
1201	SWITCH,AIR 4330	FPE		17	208	0020
1201	3 POLE ACB SPARE	FEDERAL PACIFIC		13	104	0020
1201	BREAKER AIR CIRCUIT	FEDERAL PACIFIC		13	104	0020
1201	BREAKER AIR CIRCUIT	FEDERAL PACIFIC		13	104	0020
1201	BREAKER AIR CIRCUIT	FEDERAL PACIFIC		13	104	0020
1201	3 POLE ACB FEEDS L100	GENERAL ELECTRIC	0324A6815-010	13	104	0010
1201	3 POLE ACB FEED LN100	GENERAL ELECTRIC	0324A6815-010	13	104	0010
1201	3 POLE ACB FEEDS L200	GENERAL ELECTRIC	0324A6815-010	13	104	0010

Instruction Code	Date Due
0709101196	9903
0407114250	9802
0311ASBNCSCTELEOXX	9804
030713ZZXXBNX1X2X3X4	9804
ZZZ11113AD03	9804
030713ZZXXBNX1X2X3X4	9804
030713ADZZXXX1X2X3X4BNCSCT	9804
071382XXX1X2X3X4	9804
030713XXBNX1X2X3	9805
030713XXBNX1X2X3X4	9804
030713X1XXBNCSCTX2X3X4	9804
030713X1XXBNX2X3	9804
030713ADXXBNCSCTX1X2	9804
XX	9807
07112790939599ADAN	9809
07111927829096ABAN	9809
93	9803
07111927829096ABAN	9809
93	9803
07112719ADAN	9809
07112719ADAN	9809
071119278290ADAN	9809
0711192782909193AN	9809
07112719ADAN	9809
07112719ADAN	9809
07112719ADAN	9809
0711192782909193ABANXX	9809
0711193182AJCGCL	9609
0711278290939599ADAN	9809
111526288285	9809
111526288285	9809
0711193182AJCGCL	9609
0711193182AJCL	9609
0711193182AJCL	9609
0711193182AJCL	9609
0711193182AJCGCL	9609
0711193182AJCGCL	9609
0711193182AJCGCL	9609

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1201	3 POLE ACB FEEDS LOADCENTER	GENERAL ELECTRIC	0324A6815-009	13	104	0010
1201	3 POLE ACB SPARE	GENERAL ELECTRIC	0324A6815-009	13	104	0010
1201	3 POLE ACB FEEDS L300	GENERAL ELECTRIC	0324A6815-010	13	104	0010
1201	3 POLE ACB FEEDS MGSET/L400	GENERAL ELECTRIC	0324A6815-008	13	104	0010
1201	BREAKER AIR CIRCUIT	FEDERAL PACIFIC		13	104	0010
1201	BATTERIES LEAD CALCIUM	C-D POWER SYSTEMS	XT 4L 15	19	004	0010
1201	BATTERIES LEAD CALCIUM			19	004	0010
1201	BACKFLOW PREVENTER	WATTS	900	33	052	0005
1201	SPREADER BAR 300 LBS			28	260	0020
				28	052	0005
1201	SPREADER BAR 300 LBS			28	052	0005
				28	260	0020
1201	MAN.HOIST 500 LBS	DAYTON	2Z067	28	052	0020
				28	260	0040
1201	MAN.HOIST 500 LBS.	DAYTON	2Z067	28	052	0020
				28	260	0040
1201	LIGHT,EMERGENCY,BATTERY			19	026	0002
1201	LIGHT, EMERGENCY, BATTERY			19	026	0010
1201	LIGHT, EMERGENCY, BATTERY			19	026	0003
1201	LIGHT,EMERGENCY,BATTERY			19	026	0005
1201	EXIT EMERG. LIGHT, BATTERY			19	026	0003
1201	LIGHT,EMERGENCY,BATTERY			19	026	0003
1201	EXIT EMERG. LIGHT, BATTERY			19	026	0003
1201	EXIT EMERG. LIGHT, BATTERY			19	026	0003
1201	EXIT EMERG. LIGHT, BATTERY			19	026	0003
1201	EXIT EMERG. LIGHT, BATTERY			19	026	0003
1201	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1201	LIGHT, EMERGENCY BATTERY			19	026	0003
1201	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1201	FIRE ALARM SYSTEM(PYROTRON)	PYROTRONICS	SYSTEM 3	19	052	0020
1201	WET PIPE SPRINKLER SYSTEMS	CSC SPRINKLER CO	VDS-G4840027-4"	33	004	0005
				33	052	0040
1201	SPRINKLER SYSTEMS (VALVES)	CSC SPRINKLER CO.	VDS-G4840027-4"	33	004	0020
1201	WATER FLOW DEVICES	GEM SPRINKLER CO	MODEL 2	33	004	0080
1201	FIRE DEPARTMENT CONNECTIONS			33	004	0005
1201	RISER FLOW TEST			33	013	0040
1201	POST INDICATOR VALVE			33	013	0020
1201	WET SYSTEM ALARM TESTING			33	013	0040

Instruction Code	Date Due
0711193182AJCGCL	9609
0711193182AJCGCL	9609
0711193182AJCGCL	9609
0711193182AJCGCL	9609
0711193182AJCL	9609
XXX1X2X3	9804
XXX1X2X3	9804
0711XXX1	9801
86	0111
0710AG	9810
0710AG	9810
86	0111
071082	9810
86	0111
071082	9810
86	0111
0407114250XX	9802
0407114250	9802
0407114250XXX1	9802
0407114250	9802
0407114250	9802
0407114250XX	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0311ASBNCSCTELEOXXZZ	9811
030713ZZXXBNX1X2X3X4	9804
031113ADZZZ1	9811
030713ZZXXBNX1X2X3X4	9804
030713ADZZXXX1X2X3X4BNCSCT	9804
07138ZXXX1X2X3X4	9804
030713X1XXBNCSCTX2X3X4	9805
030713X1XXBNX2X3	9805
030713ADXXBNCSCTX1X2	9805

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1203	CONDENSOR UNIT	CARRIER	38AB016640	30	052	0020
1203	AIR HANDLER	CARRIER	39AC605ZUBF1	30	052	0030
1203	MAN CRANE MONORAIL 3 TON	DETROIT		28	260	0040
				28	052	0020
1203	FIRE HYDRANT VALVES 40A			33	026	0005
1204	AIR HANDLER	CARRIER		30	052	0030
1204	CONDENSING UNIT	CARRIER	38GF006420	30	052	0020
1204	AIR HANDLER	CARRIER	40GF002100	30	052	0020
1204	AIR HANDLER	CARRIER	38R5-524	30	052	0030
1204	CONDENSING UNIT	CARRIER	38TG036510	30	052	0020
1204	CONDENSING UNIT	CARRIER	38GF002310	30	052	0020
1204	EMERGENCY EYE WASH			33	026	0005
1204	AMMONIA LEAK OR EMERGENCY S			19	052	0040
1209	LIGHT,EMERGENCY,BATTERY			19	026	0003
1209	LIGHT,EMERGENCY,BATTERY			19	026	0003
1209	LIGHT,EMERGENCY,BATTERY			19	026	0003
1209	LIGHT,EMERGENCY,BATTERY			19	026	0003
1209	LIGHT,EMERGENCY,BATTERY			19	026	0003
1209	LIGHT,EMERGENCY,BATTERY			19	026	0003
1209	EXIT EMERG. LIGHT, BATTERY			19	026	0003
1209	LIGHT,EMERGENCY,BATTERY			19	026	0003
1209	LIGHT,EMERGENCY,BATTERY			19	026	0003
1209	LIGHT,EMERGENCY,BATTERY			19	026	0003
1209	LIGHT,EMERGENCY,BATTERY			19	026	0003
1209	LIGHT,EMERGENCY,BATTERY			19	026	0003
1209	LIGHT,EMERGENCY,BATTERY			19	026	0003
1209	LIGHT,EMERGENCY,BATTERY			19	026	0003
1209	LIGHT,EMERGENCY,BATTERY			19	026	0003
1209	LIGHT,EMERGENCY,BATTERY			19	026	0003
1209	LIGHT,EMERGENCY,BATTERY			19	026	0003
1209	LIGHT,EMERGENCY,BATTERY			19	026	0003
1209	LIGHT,EMERGENCY,BATTERY			19	026	0003
1209	LIGHT,EMERGENCY,BATTERY			19	026	0003
1209	LIGHT,EMERGENCY,BATTERY			19	026	0003
1209	LIGHT,EMERGENCY,BATTERY			19	026	0003
1209	LIGHT,EMERGENCY,BATTERY			19	026	0003
1209	EXIT EMERG. LIGHT, BATTERY			19	026	0002

Instruction Code	Date Due
0711192782AB	9712
0711192782909193AN	9712
86	9612
BB	9712
EVEW	9809
0711192782909193AN	9804
0711192782909193AN	9804
0711192782909193AN	9804
0711192782909193AN	9804
07111927759599ADAN	9804
07111927759599ADAN	9804
0711CV	9810
03040511ASBNCSCTELEOXXX1X2	9808
0407114250XXX1	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802
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0407114250	9802
0407114250	9802
0407114250	9802
0407114250	9802

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1209	SWITCH,AIR 4478	SQUARE D		17	208	0020
1209	BREAKER AIR CIRCUIT	SQUARE D		17	104	0040
1209	TOWER COOLING	BALTIMORE AIRCOIL	VST-300-BS	20	052	0040
1209	MTR-FAN DRIVE	LINCOLN		19	052	0010
1209	PUMP COOLING WATER	FEDERAL	4CK-10-4	20	052	0020
1209	MTR COOLING WATER PUMP DRIV	MARATHON		20	052	0010
1209	PUMP WATER CIRCULATING	BELL-GOSSETT		20	052	0020
1209	MTR COOLING WATER PUMP DRIV	ITT		20	052	0010
1209	CONTROL AIR DRYER	HANKISON	8010	30	052	0010
1209	AIR HANDLER	CARRIER	39BA050B12	30	052	0050
1209	CONDENSING UNIT	CARRIER	09BB012300	30	052	0040
1209	HOT WATER PUMP	FEDERAL	4CK-20-4	20	052	0020
1209	HOT WATER PUMP	FEDERAL	B506313	20	052	0020
1209	AIR HANDLER	BOHN	HCS187MA	30	052	0080
1209	HOT WATER PUMP	ARMSTRONG	2D1000	20	052	0020
1209	ABSORPTION MACHINE	TRANE	C1H-W-5	30	052	0800
				30	260	0800
				30	104	0480
1209	ENVIRONMENTAL CONTROL UNIT	LIEBERT		30	052	0040
1209	BACKFLOW PREVENTER	WATTS	900	33	052	0005
1209	BACKFLOW PREVENTER	WATTS	900	33	052	0005
1209	AIR HANDLER	TRANE	CCDB06CNAC	30	052	0020
1209	AIR HANDLER	LIEBERT	FH125AUA00	30	052	0020
1209	CONDENSING UNIT	LIEBERT	CDF130A	30	052	0010
1209	AIR HANDLER	DUNHAM-BUSH	AHFI080VL	30	052	0025
1209	CHILLER	TECHNICAL SYSTEMS	3OAOCD45	30	052	0020
1209	AIR HANDLER	LIEBERT	DME037E-PH2	30	052	0020
1209	CONDENSER	LIEBERT	DMC037-PLL	30	052	0020
1209	PACKAGE A/C	BARD	NHP30A-A10	30	052	0020
1209	PACKAGE A/C	BARD	MHP30A-A10	30	052	0020
1209	PACKAGE A/C	BARD	NHP30A-A10	30	052	0020
1209	PACKAGE A/C	BARD	NHP30A-A10	30	052	0020
1209	HEAT TAPE THERMOSTAT			19	052	0010
1209	FIRE ALARM SYSTEM(PYROTRON)	PYROTRONICS	HIGHVOLTAGE	19	052	0160
				19	104	0160
1209	STANDPIPE SYSTEMS			33	104	0080
				33	052	0080
1209	POST INDICATOR VALVE			33	013	0020

Instruction Code	Date Due
111526288285	9205
07111931328285	9203
03091985BMCH90	9810
0204071318XX82	9810
0204091319	9810
0204091319	9810
020407091319	9810
0207131923	9810
071119278295	9809
0711192782909193AN	9809
07111927759599ADAN	9811
071182ABBM	9810
071182ABBM	9810
0711192782909193AN	9809
07118382ABBM	9810
DY	9902
DWDXCU	0204
DT	9904
07111927829093AN	9809
0711XXZZ	9801
0711XXZZ	9801
071019829091CD	9809
07111927829093AN	9809
07111927759599ADAN	9809
0711192782909193AN	9809
07111927829395AN	9809
0711192782909193AN	9809
07111927759599ADAN	9809
07111927829093AN	9809
07111927829093AN	9809
07111927829093AN	9809
07111927829093AN	9809
041622	9810
0311ASBNCSCTELEOXX	9804
ZZ	9805
03013XXBNX1X2X3X4	9805
030713XXBNX1X2X3	9804
030713BNXXX1X2X3	9805

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1209T	FIRE ALARM PANEL	PYROTRONICS	CP400	67	052	0005
1209T	FIRE ALARM SYSTEM	PYROTRONICS	PYROT.CP-400	67	052	0020
1223A	WATER COOLER & FILTER			33	052	0005
1223A	A.C. WINDOW UNITS			30	052	0040
1223A	DRILL PRESS	DELTA	MKB6M920	19	052	0005
1223A	DRILL PRESS	GENERAL ELECTRIC	5K225DA5	19	052	0050
1223A	BENCH GRINDER AND MTR	BROWN BROCCMETER		20	052	0002
1223A	MARVEL SAW	DOALL	3012-U	20	052	0010
				19	052	0010
1223A	RAW SEWAGE FLOWMETER	ENDRESS & HAUGER	FTI 1943	32	052	0020
1225	ELE.CRANE BRIDGE 10 TON	MARIS/WRIGHT		28	052	0010
				28	052	0040
				28	260	0040
1225	PACKAGE A/C	CARRIER	50EE018330	30	052	0020
1225	**DUST COLLECTOR**	**DONALDSON CO INC**	**561C**	**20**	**004**	**0001**
				20	026	0020
				19	052	0010
1225	**GRINDER,CARBIDE TOOL**	**ROCKWELL**	**NA-23-510-A**	**20**	**004**	**0001**
				20	052	0005
1225	SWITCH,AIR 4058	GENERAL ELECTRIC		17	208	0020
1225	**NEW WASINO LATHE #1**	**WASING**		**20**	**004**	**0001**
				20	**013**	**0010**
				20	026	0020
				19	052	0010
1225	**OLD WASINO LATHE #2**	**WASINO MACH CO**	**LJ 103M**	**20**	**004**	**0001**
				20	**013**	**0010**
				20	026	0020
				19	052	0010
1225	BREAKER,AIR CIRCUIT	GENERAL ELECTRIC		17	104	0020
1225	**P&W 4E JIG BORER**	**PRATT & WHITNEY**	**4E**	**20**	**004**	**0001**
				19	052	0020
				20	052	0030
1225	**DEVLIEG HORIZ BORING MILL**	**DEVLIEG**	**43H-48**	**20**	**004**	**0001**
				20	052	0020
1225	DRILL PRESS,SENSITIVE	SEVRO	7000	20	052	0005
1225	COMPRESSOR,AIR		PHEUMATIC CONTR	20	052	0005
1225	ELE.CRANE BRIDGE 5 TON	MARIS/WRIGHT		28	052	0010
				28	052	0040

Instruction Code	Date Due
0311ASBNCSCTELEDXX	9811
0311ASCSCTELEOBNXX	9304
1720XX	9809
XX	9804
070810382220	9804
07081038822220	9804
070811132082	9804
070811132082	9804
070810388219	9804
16XX	9807
BB	9803
BQBZ	9901
86	0203
0711278290939599ADAN	9802
82	**9903**
071319	9805
03040713202982	9802
82	**9903**
071119	9804
111526288285	9205
82	**9903**
6366	**9802**
1113637990XX	9805
03042007191329	9802
82	**9903**
6366	**9802**
1113637990XX	9805
03042007191329	9802
07111931328285	9703
82	**9903**
02030923252820	9802
020307111319808590XX	9802
82	**9903**
0209197378859011XX	9804
0219829011XX	9808
19117180	9808
BB	9804
BQBZ	9901

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
				28	260	0040
1225	**DRILL PRESS,RADIAL**	**AMERICAN**	**68511**	**20**	**004**	**0001**
				19	052	0010
				20	052	0010
1225	BREAKER,AIR CIRCUIT	GENERAL ELECTRIC		17	104	0020
1225	**LATHE AND MOTOR 15 INCH**	**LEBLOND MAKINO**	**REGAL SERVO SFT**	**20**	**013**	**0013**
				20	026	0020
1225	**LATHE AND MOTOR 15 INCH**	**LEBLOND MAKINO**	**REGAL SERVO SFT**	**20**	**026**	**0013**
1225				19	052	0010
				20	026	0020
				19	052	0010
1225	SWITCH,OIL 4059	GENERAL ELECTRIC	9F2L53	17	208	0040
1225	**LATHE AND MOTOR 15 INCH**	**LEBLOND MAKINO**	**REGAL SERVO SFT**	**20**	**004**	**0001**
				20	**013**	**0010**
				20	026	0020
				19	052	0010
1225	**LATHE AND MOTOR 15 INCH**	**LEBLOND MAKINO**	**REGAL SERVO SFT**	**20**	**004**	**0001**
				20	**013**	**0010**
1225				20	026	0020
				19	052	0010
1225	A.C. UNIT			30	026	0020
1225	BREAKER,AIR CIRCUIT	GENERAL ELECTRIC		17	104	0020
1225	**LATHE,TOOLROOM**	**MONARCH 16 INCH.**	**1000**	**20**	**004**	**0001**
				20	**013**	**0010**
				19	052	0010
				20	052	0010
1225	**LATHE AND MOTOR 15 INCH**	**LEBLOND MAKINO**	**REGAL SERVO SFT**	**20**	**004**	**0001**
				20	**013**	**0010**
				20	026	0020
				19	052	0010
1225	**TREE MILLING MACHINE**			**20**	**004**	**0001**
				20	052	0040
				19	052	0020
1225	CONDENSOR	CARRIER	38TKBQ36300	30	052	0020
1225	AIR HANDLER	CARRIER	4QYRQ36300	30	052	0020
1225	**SHAPER,VERTICAL**	**PRATT & WHITNEY**	**B**	**20**	**004**	**0001**
				19	052	0010
				20	052	0010

Instruction Code	Date Due
86	0203
82	**9903**
071323348229	9802
02198511XX80	9804
07111931328285	9703
6366	**9802**
11798290XX63	9804
6366	**9802**
07191322233420	9802
0711798290XX63	9804
07191322233420	9802
0711757679	9205
82	**9903**
6366	**9802**
020407091113197990XX	9805
07191322233420	9802
82	**9903**
6366	**9802**
020407091113798290XX63	9805
07191322233420	9802
0711192782ABXX	9802
07111931328285	9703
82	**9903**
6366	**9802**
07191322233438	0012
020407091113197385XX	9811
82	**9903**
6366	**9802**
0204071113197990XX	9805
071913223420	9802
82	**9903**
0204111980929013XX	9802
030419071322202829	9802
0711192782AB	9802
0711192782909395 99ADAN	9802
82	**9903**
07132220	9802
198082906311XX	9804

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1225	DUST COLLECTOR,PORTABLE	DONALDSON CO INC	84	20	004	0001
				20	026	0005
				19	052	0010
1225	MILLING MACHINE	K&T MILWAUKEE		20	004	0001
				19	052	0020
				20	052	0020
1225	DRILL PRESS,BENCH	ROCKWELL	15-665	20	004	0001
				19	052	0010
				20	052	0005
1225	PLANER	ROCKFORD		20	004	0001
				19	052	0030
				20	052	0025
1225	MILLING MACHINE	BRIDGEPORT		20	004	0001
				20	052	0020
1225	BRIDGEPORT MILL	BRIDGEPORT	64-937	20	004	0001
				20	052	0005
				19	052	0010
1225	PLANER	ROCKFORD		20	004	0001
				19	052	0020
				20	052	0020
1225	BORING MACH,VERTICAL(KING M	KING	324-72"	20	004	0001
				19	052	0020
				20	052	0020
1225	DRILL PRESS,FLOOR	ROCKWELL	15-000	20	004	0001
				20	052	0005
1225	BRANSON ULTRASONIC DR.PRESS	BRANSON	UMT-5	20	004	0001
				20	052	0005
1225	MILLING MACHINE	BRIDGEPORT		20	004	0001
				20	052	0020
1225	MILLING MACHINE	BRIDGEPORT	59663	20	004	0001
				20	052	00020
1225	MILLING MACHINE	BRIDGEPORT		20	004	0001
				20	052	0005
				19	052	0010
1225	DIMILL,3 AXIS HORZ (G&L)	G&L	DIMIL	20	0004	0001
				20	013	0010
				20	026	0030
				19	052	0015

Instruction Code	Date Due
82	**9903**
02041319637990	**9802**
0713202922	9802
82	**9903**
07132022	9802
020409131979908511XX	9802
82	**9903**
132220	9802
1990	9804
82	**9903**
742234292082	9802
0219ABXX7993	9805
82	**9906**
02040709906379809373	9802
82	**9906**
020407091111373901985XX	9802
0713223420	9802
82	**9903**
4.07132E+12	9802
021979938085ABXXZZ	9805
82	**9903**
0407132234298220	9802
0219078011XXZZ	9804
82	**9903**
199011XX	9804
82	**9903**
021911XX	9804
82	**9903**
020407091111363798093 93	9802
82	**9903**
02040709111363798093 73	9802
82	**9903**
0204070913198511XX	9802
0713223420	9802
82	**9903**
6366	**9802**
0213637993809085XX	9801
030407192028	9802

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1225	DRILL PRESS,SENSITIVE	SIGOURNEY	M-100	20	004	0001
				20	052	0002
1225	MILLING MACHINE	BRIDGEPORT		20	004	0001
				20	052	0020
1225	SUNDSTRAND 5 AXIS	SUNDSTRAND	OMNIMIL	20	004	0001
				20	013	0010
				20	026	0030
				19	052	0015
1225	BREAKER,AIR CIRCUIT	GENERAL ELECTRIC		17	104	0020
1225	MILLING MACH,RAM	KEARNEY & TRECKER	309 S-15	20	004	0001
				19	052	0020
				20	052	0020
1225	LATHE	SPRINGFIELD	2013-5	20	004	0001
				19	052	0020
				20	052	0020
1225	FADAL MODEL VMC6030HT	FADAL ENGINEERING	907-1	20	004	0001
				20	013	0010
				20	052	0030
1225	FADAL MODEL VMC4020HT	FADAL ENGINEERING	906-1	20	004	0001
				20	013	0010
				20	052	0030
1225	MILLING MACHINE	BRIDGEPORT		20	004	0001
				20	052	0020
1225	SAW,BAND	DOALL	3612-3	20	004	0001
				19	052	0010
				20	052	0010
1225	CUT-OFF MACH	EVERETT	12-A	20	004	0001
				20	052	0003
1225	WELDER,BAND SAW	T.L.FAHRINGER CO.	W-10	20	004	0001
				19	052	0010
1225	BRIDGEPORT MILL	BRIDGEPORT	140059	20	004	0001
				20	052	0010
				19	052	0010
1225	LATHE,HOLLOW SPINDLE	LODGE & SHIPLEY	27X37.5,12.5HS	20	004	0001
				20	013	0010
				19	052	0020
				20	052	0020
1225	LATHE	MONARCH		20	004	0001

Instruction Code	Date Due
82	**9903**
19908211XX	9804
82	**9903**
020407091113196378908 5XX	9802
82	**9903**
6366	**9802**
116373798093 90XXZZ	9801
020822293420	9802
07111931328285	9703
82	**9903**
0304192028	9802
020407091113196378908 5XX	9802
82	**9903**
07132220	9802
0219908511XX	9810
82	**9903**
6366	**9802**
719638093	9804
82	**9903**
6366	**9802**
719638093	9802
82	**9903**
020407091113901985XX	9802
82	**9903**
030419202923	9802
021973909311XX80	9802
82	**9903**
081990XX	9804
82	**9903**
03041920	9802
82	**9903**
020407091113901985XX	9802
0713223420	9802
82	**9903**
6366	**9802**
0713223420	9802
0219908511XX	9808
82	**9903**

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
				20	**013**	**0010**
				19	052	0010
				20	026	0020
1225	**MILLING MACHINE**	**BRIDGEPORT**	**99456**	**20**	**004**	**0001**
				20	052	0005
1225	**MILLING MACHINE**	**BRIDGEPORT**		19	052	0010
				20	**004**	**0001**
				20	052	0005
1225	**BRIDGEPORT MILL**	**BRIDGEPORT**	**97150**	19	052	0010
				20	**004**	**0001**
				20	052	0005
1225	**SHEAR,METAL**	**DI-ACRO**	**4**	19	052	0010
				20	**004**	**0001**
1225	**LATHE**	**MONARCH**		20	052	0002
				20	**004**	**0001**
1225	**LATHE**	**MONARCH**		20	026	0005
				20	**004**	**0001**
				19	052	0010
1225	DRILL PRESS,SENSITIVE	SEVRO	7000	20	026	0020
1225	**MILLING MACHINE**	**BRIDGEPORT**		20	052	0005
				20	**004**	**0001**
				20	**026**	**0005**
1225	**GRINDER,SURFACE**	**MATTISON**	**48"**	20	052	0020
				20	**004**	**0001**
				19	052	0010
1225	**DRILL PRESS,SENSITIVE**	**HAMILTON**	**VARI-MATIC**	20	052	0020
				20	**004**	**0001**
1225	**SANDER,BELT**	**ROCKWELL**	**31-520**	20	052	0002
				20	**004**	**0001**
				19	052	0010
1225	**PRESS,ARBOR**	**DUMONT**	**3-R**	20	052	0005
				20	**004**	**0001**
1225	**LATHE AND MTR**	**MONARCH MFG**	**EE**	20	052	0002
				20	**004**	**0001**
				20	052	0040
1225	**ELECTRICAL DISCHARGE MACH**	**ELOX CORP.**	**E51000**	19	052	0030
				20	**004**	**0001**
				20	026	0010

Instruction Code	Date Due
6366	**9802**
071913223420	9802
04070913197390XX	9708
82	**9903**
020407091113901985XX	9807
0713223420	9802
82	**9903**
020407091113901985XX	9807
0713223420	9802
82	**9903**
020407091113901985XX	9808
0713223420	9802
82	**9903**
0204070809111319	9802
82	**9903**
0204076378798590	9802
82	**9903**
0204071913223420	9802
020407798590XX6313	9805
0219829011XX	9808
82	**9903**
02040709111390	**9802**
63799373	9807
82	**9903**
0713222334202982	9802
0219829011XX85	9804
82	**9903**
199011XX	9804
82	**9903**
0713223420	9802
1982900711XX	9804
82	**9903**
19821108XX	9804
82	**9903**
04118090XX0219	9807
13192223342029	9802
82	**9903**
071319XX	9804

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1225	LATHE AND MTR	MONARCH MFG CO	EE	**20**	**004**	**0001**
				20	052	0040
				19	052	0040
1225	GRINDER,PEDESTAL	STANDARD	CADET	**20**	**004**	**0001**
				19	052	0001
				20	052	0002
1225	DRILL PRESS AND MTR	SIGOURNEY TOOL CO		**20**	**004**	**0001**
				20	052	0005
1225	MILLING MACH,HORZ	KEARNEY & TRECKER	415-TF-16	**20**	**004**	**0001**
				20	**013**	**0010**
				19	052	0020
				20	052	0020
1225	MILLING MACH,VERT	KEARNEY & TRECKER	314 TF-16	**20**	**004**	**0001**
				20	**013**	**0010**
				19	052	0020
				20	052	0020
1225	GRINDER,DRILL	BLACK DIAMOND	11	**20**	**004**	**0001**
				19	052	0001
				20	052	0005
1225	GRINDER,DRILL	BLACK DIAMOND	30	**20**	**004**	**0001**
				19	052	0001
				20	052	0005
1225	DRILL PRESS,BENCH	ROCKWELL	15-665	**20**	**004**	**0001**
				20	052	0005
1225	LATHE	AMERICAN	20X72 M.D.	**20**	**004**	**0001**
				19	052	0010
				20	052	0010
1225	LATHE AND MTR	PRATT AND WHITNEY	C	**20**	**004**	**0001**
				20	052	0040
1225	LATHE	SPRINGFIELD	2013-5	**20**	**004**	**0001**
				19	052	0020
				20	052	0020
1225	DRILL PRESS	CLEEREMAN		**20**	**004**	**0001**
				20	052	0010
1225	GRINDER,PEDESTAL	HAMMOND	10-A	**20**	**004**	**0001**
				19	052	0001
				20	052	0005
1225	GRINDER,SURFACE	GALLMEYER & LIV.	280	**20**	**004**	**0001**

Instruction Code	Date Due
82	**9903**
04118090XX0219	9807
071322342029	9802
82	**9903**
49	9802
081911XX	9804
82	**9903**
111390XX020419	9808
82	**9903**
0204070911131963787985 90	**9902**
030419202829071322	9802
0219908511XX	9802
82	**9903**
0204070911131963787985 90	**9802**
030419202829071322	9802
0219859011XX	9802
82	**9903**
49	9802
190811XX	9804
82	**9903**
49	9802
190811XX	9804
82	**9903**
1990	9804
82	**9903**
0713222320	9802
0219908785809111XX	9811
82	**9903**
04118090XX021319	9811
82	**9903**
07132220	9802
0219908511XX	9811
82	**9903**
02197911XX	9804
82	**9903**
49	9802
021993821108XX	9804
82	**9903**

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
				19	052	0020
				20	052	0020
1225	**MILLING MACHINE**		**84294**	**20**	**004**	**0001**
				20	**026**	**0005**
				20	052	0010
				19	052	0010
1225	**SHAPER AND MTR**	**NORTON CO**		**20**	**004**	**0001**
				20	052	0030
				19	052	0030
1225	**GRINDER,PEDESTAL**	**CINN**	**149**	**20**	**004**	**0001**
				19	052	0010
				20	052	0005
1225	**EL DISC MACH**	**IND ELEC CO**	**AB**	**20**	**004**	**0001**
				20	052	0005
1225	**PRESS,HYDRAULIC**	**ENERPAC**	**P462**	**20**	**004**	**0001**
				20	052	0002
1225	**EL DISC MACH**	**IND ELEC CO**	**AB**	**20**	**004**	**0001**
				20	052	0005
1225	**MILLING MACH TREE**	**TREE**	**2UVR**	**20**	**004**	**0001**
				19	052	0010
				20	052	0010
1225	AIR CIRCUIT BKR	SIEMENS ALLIS	LA-1600B	17	104	0015
1225	AIR CIRCUIT BKR	SIEMENS ALLIS	LA-800A	17	104	0015
1225	AIR CIRCUIT BKR	SIEMENS ALLIS	LA800A	17	104	0015
1225	AIR CIRCUIT BKR	SIEMENS ALLIS	LA-800A	17	104	0015
1225	AIR CIRCUIT BKR	SIEMENS ALLIS	LA-800A	17	104	0015
1225	AIR CIRCUIT BKR	SIEMENS ALLIS	LA-800A	17	104	0015
1225	AIR HANDLER	TRANE	SA304C	30	026	0080
1225	AIR HANDLER	TRANE	SA304C	30	026	0080
1225	AIR HANDLER	TRANE	SA304C	30	026	0080
1225	HOIST, ELECTRIC, 2 TON	YALE		28	052	0005
				28	260	0020
1225	**MILLING MACH AND MTR**	**HARDINGE**	**TM**	**20**	**004**	**0001**
				20	052	0020
				19	052	0020
1225	**MILLING MACHINE**	**TREE**	**2UVR**	**20**	**004**	**0001**
				20	052	0015
				19	052	0020

Instruction Code	Date Due
07132223342082	9802
0219636680908511XX	9804
82	**9903**
02040709111390	**9802**
197385XX	9807
030407131922282720	9802
82	**9903**
020411809093AT19XX	9810
1322233420	9802
82	**9903**
49071320222982	9802
0219089311XX	9804
82	**9903**
021182041319XX	9804
82	**9903**
197308BJXX	9804
82	**9903**
0211041319XX	9808
82	**9903**
1322233420	9802
198093908511XX	9802
0711192223318285BRAJ	9703
0711192223318285BRAJ	9703
0711192223318285BRAJ	9703
0711192223318285BRAJ	9703
0711192223318285BRAJ	9703
0711192223318285BRAJ	9703
0711278290939599ADAN	9802
0711278290939599ADAN	9802
0711278290939599ADAN	9802
BB	9804
86	0201
82	
0204070911131990XX	9808
1322232029	9802
82	**9903**
020407091119808590XX	9803
071322233420	9802

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1225	DRILL PRESS AND MTR	SIGOURNEY TOOL CO		**20**	**004**	**0001**
				20	052	0005
1225	LATHE AND MTR	MONARCH	EE	**20**	**004**	**0001**
				20	052	0040
				19	052	0040
1225	GRINDER,SURFACE	DOALL	D618-7	**20**	**004**	**0001**
				20	052	0005
				19	052	0010
1225	SANDER,DISC	ROCKWELL	31-426	**20**	**004**	**0001**
				20	052	0002
1225	MILLING MACH. AND MTR	CINCINNATI	DH	**20**	**004**	**0001**
				20	052	0080
				19	052	0040
1225	LATHE AND MTR	MONARCH	EE	**20**	**004**	**0001**
				20	052	0040
				19	052	0040
1225	MONARCH LATHE	MONARCH MACH CO	EE	**20**	**004**	**0001**
				19	052	0020
				20	052	0040
1225	MILLING MACH AND MTR	HARDINGE BROTHERS		**20**	**004**	**0001**
				20	052	0020
				19	052	0020
	MILLING MACH AND MTR	HARDINGE	JAM UM	**20**	**004**	**0001**
1225				20	052	0020
				19	052	0020
1225	PROJECTOR,CONTOUR	EX-CELL-O	30-827	**20**	**004**	**0001**
				20	052	0005
1225	LATHE AND MTR	MONARCH MACH	EE	**20**	**004**	**0001**
				20	052	0040
				19	052	0040
1225	GRINDER	GORTON	375	**20**	**004**	**0001**
				20	052	0020
				19	052	0020
1225	TREE MILLING MACHINE	TREE	2UVR	**20**	**004**	**0001**
				20	052	0040
				19	052	0020
1225	GRINDER,SURFACE	GALLMEYER & LIV.	280	**20**	**004**	**0001**
				19	052	0020

Instruction Code	Date Due
82	**9903**
111390040219	9808
82	**9903**
04118090021319XX	9811
071322233420	9802
82	**9903**
021113XX	9804
07132223342920	9802
82	**9903**
080911	9804
82	**9903**
0204070911131979809OXX	9802
07131920222328	9802
82	**9903**
04118090021319XX	9811
0713222320	9802
82	**9903**
0713222320	9802
04118090021319XX	9811
82	**9903**
02040709111319XX	9808
07132223342029	9802
82	**9903**
02040709119013 19XX	9808
07132223342029	9802
82	**9903**
0219XX	9802
82	**9903**
04118090021319XX	9807
071322342029	9802
82	**9903**
020411191390XXBJ	9808
07132220	9802
82	**9903**
0204070911198085901 3XX	9802
030419071322202829	9802
82	**9903**
0713223420	9802

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
				20	052	0020
1225	**BORING MACH,HORZ**	**LUCAS**	**441B84**	**20**	**004**	**0001**
				20	052	0020
				19	052	0020
1225	**GRINDING MACHINE**	**WARNER & SWASEY**	**U-2 TYPE 10-24**	**20**	**004**	**0001**
				20	052	0020
				19	052	0020
1225	AIR HANDLER	TRANE	SA304C	30	026	0080
1225	**BENDIX JIG BORER**	**BENDIX**	**1520**	**20**	**004**	**0001**
				20	052	0005
				19	052	0020
1225	**TURRET PUNCH**	**HOUDAILLE DI-ACRO**	**12**	**20**	**004**	**0001**
				20	052	0005
1225	CONDENSING UNIT	CARRIER	38BA009550	30	052	0040
1225	CONDENSING UNIT	CARRIER	38BA00950	30	052	0040
1225	AIR HANDLER	CARRIER	40RR012550	30	052	0040
1225	SHOP LIFT	ECONOMY ENGIN	TYPE D MARK 2	28	260	0020
				20	052	0005
1225	SHOP LIFT	ECONOMY ENGIN	TYPE D MARK 2	28	260	0020
				20	052	0005
1225	H20 COOLER FILTER	HAWS		33	052	0005
1225	**SLICING MACH**	**DUALL**	**D1030-10**	**20**	**004**	**0001**
				19	052	0015
				20	052	0015
1225	**GRINDING MACH,CLY**	**NORTON**	**10X20**	**20**	**004**	**0001**
				19	052	0020
				20	052	0015
1225	**SLICING MACH**	**BLYMILLER**	**1**	**20**	**004**	**0001**
				19	052	0010
				20	052	0005
1225	**GRINDER,CUTTER & TOOL**	**GRAND RAPIDS**	**62**	**20**	**004**	**0001**
				19	052	0010
				20	052	0005
1225	**GRINDER,SURFACE**	**EVERITE**	**EG**	**20**	**004**	**0001**
				19	052	0010
				20	052	0010
1225	**SAW,BAND**	**DOALL**	**2630-ZH**	**20**	**004**	**0001**

Instruction Code	Date Due
0219908511XX	9804
82	**9903**
0204070911l9BJXX9313	9804
071322342029	9802
82	**9903**
63829093	9804
07132220	9802
0711278290939599ADAN	9802
82	**9903**
02111319799004XX	9802
07132220	9802
82	**9903**
71119	9802
0711192782AB	9802
0711192782AB	9802
0711278290939519AEAN	9802
86	0202
08091182	9810
86	0202
08091182	9810
1720XX	9810
82	**9903**
208222920	9802
02076366799085XX	9810
82	**9903**
0713222920	9802
0207091119XX	9804
82	**9903**
0713223420	9802
07099011XX	9804
82	**9903**
07132220	9802
0709199011XX	9804
82	**9903**
0713222820	9802
0709636679909385XXZZ	9804
82	**9908**

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
				19	052	0015
				20	052	0010
1225	**P&W KELLER 3 AXIS**	**PRATT & WHITNEY**	**KELLER BG-71**	**20**	**004**	**0001**
				20	**013**	**0010**
				20	026	0030
				19	052	0010
1225	**SAW,BAND**	**ARMSTRONG-BLUM**	**8/M8/5**	**20**	**004**	**0001**
				19	052	0010
				20	052	0020
1225	AIR HANDLER	CARRIER	40RR012550	30	052	0030
1225	AIR HANDLER	CARRIER	40RR012550	30	052	0040
1225	CONDENSING UNIT	CARRIER	38AE012600	30	052	0040
1225	H2O COOLER FILTER			33	052	0005
1225	AIR CIRCUIT BKR	SIEMENS ALLIS	LA-800A	17	104	0015
1225	**TRACING PUMP,HYD**	**MIMIK**		**20**	**004**	**0001**
				20	052	0005
1225	WATER COOLER FILTER	AMF CUNO	AP100	33	052	0005
1225	PACKAGE UNIT	LENNOX	DMS4-185	30	052	0080
1225	CONDENSOR UNIT	TRANE	CA-3008	30	052	0040
1225	CONDENSOR UNIT	TRANE	CA-3008	30	052	0040
1225	CONDENSOR UNIT	TRANE	CA-3008	30	052	0040
1225	CONDENSOR UNIT	TRANE	CA-3008	30	052	0040
1225	CLOSED LOOP CHILLER	FILTRINE MFG CO	PCP-200A	30	052	0020
1225	COMEALONG 2 TON	TUGIT	M-502301X	28	052	0015
				28	260	0020
1225	MAN.HOIST 300 LBS			28	260	0040
				28	052	0020
1225	MAN.WINCH 500 LBS.	DAYTON	6X188	28	260	0040
				28	052	0020
1225	SPREADER BAR 300 LBS			28	260	0020
				28	052	0005
1225	SPREADER BAR 300 LBS			28	260	0020
				28	052	0005
1225	SPREADER BAR 1000 LBS CAP.			28	052	0005
				28	260	0020
1225	CABIE LIFTING RIG 1000 LBS			28	052	0005
				28	260	0020
1225	LIGHT,EMERGENCY,BATTERY	LINK BOY		19	026	0003

Instruction Code	Date Due
030407131920222923	9802
021973909311XX80	9802
82	**9903**
6366	**9802**
0209111963799385XX	9804
020822293420	9802
82	**9903**
0304071319202229	9802
0709198090BJ11XX	9802
0711278290939519AEAN	9802
07112782909395AEAN	9802
0711192782AB	9802
1720XX	9810
0711192223318285BRAJ	9703
82	**9903**
070922737411XX	9802
1720XX	9810
07111982909199ABANAD	9802
07111927759599ADAN	9802
07111927759599ADAN	9802
07111927759599ADAN	9802
07111927759599ADAN	9802
0711192227289599AD	9802
071082	9802
86	0102
86	0102
071082	9802
86	0102
071082	9802
86	0102
0710AG	9802
86	0102
0710AG	9802
0710AG	9802
86	9802
	9802
86	9902
0407114250XXX1	9803

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1225	LIGHT, EMERGENCY, BATTERY			19	026	0003
1225	LIGHT, EMERGENCY, BATTERY			19	026	0003
1225	EXIT EMER. LIGHT, BATTERY			19	026	0002
1225	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1225	LIGHT,EMERGENCY,BATTERY			19	026	0003
1225	LIGHT,EMERGENCY,BATTERY			19	026	0003
1225	EXIT EMERG.LIGHT,BATTERY			19	026	0002
1225	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1225	LIGHT,EMERGENCY,BATTERY	LINK BOY		19	026	0002
1225	LIGHT,EMERGENCY,BATTERY			19	026	0005
1225	LIGHT,EMERGENCY,BATTERY	LINK BOY		19	026	0002
1225	FIRE ALARM SYSTEM(PYRO SYS)	PYROTRONICS	SYSTEM	19	104	0080
				19	052	0240
1225	FIRE DEPARTMENT CONNECTIONS			33	004	0005
1225	STANDPIPE SYSTEMS			33	104	0080
				33	052	0080
1230	BASE SIREN AND CIRCUITRY			19	052	0010
1230	AIR HANDLER			30	052	0100
1230	BACKFLOW PREVENTER	WATTS	900	33	052	0005
1230	AIR HANDLER			30	052	0100
1230	BACKFLOW PREVENTER	WATTS	9D	33	052	0005
1230	BACKFLOW PREVENTER	HERSEY	12	33	052	0005
1230	BACKFLOW PREVENTER	WATTS	900	33	052	0005
1230	SWITCH,AIR 4079	ELECT ENG EQ CO	LHB-19	17	208	0020
1230	HYDROGEN DETECTOR	GENERAL MONITORS	580	39	013	0010
1230	SWITCH,AIR 4081	ELECT ENG EQ CO		17	208	0020
1230	ELEVATOR HYDRAULIC 4000 LBS	OTIS		28	052	0040
				28	026	0020
				28	260	0040
1230	CLIMATE CHANGER TYPE 25	TRANE		30	052	0040
1230	CHILLER	CHRYSLER CORP		30	052	0030
1230	AIR COOLED CONDENSER	WEBSTER ENG.	FCR.A107	30	052	0020
1230	SWITCH,AIR 4325	GENERAL ELECTRIC		17	208	0020
1230	COFFEE MAKER FILTER			33	052	0005
1230	CHILLER	ACME INDUSTRIES	RJA-3	30	052	0030
1230	HANDLER	CARRIER	40AA900151	30	052	0040
1230	AIR HANDLER	CARRIER	40AA900	30	052	0040
1230	BACKFLOW PREVENTER			33	052	0005

Instruction Code	Date Due
0407114250XXX1	9803
0407114250XXX1	9803
0407114250	9803
0407114250	9803
0407114250	9803
0407114250	9803
0407114250	9803
0407114250	9803
0407114250XX	9803
0407114250	9803
0407114250XX	9803
Z1	9807
0311ASBNXXZZCSCTELEO	9901
071382XXX1	9804
030713XXBNX1X2X3X4	9807
030713XXBNX1X2X3	9901
1113BNXXX1X2X3X4ZZ	9807
071127828590919395AN	9812
0711XXZZ	9801
071127828590919395AN	9812
0711XXZZ	9801
0711XXZZ	9801
0711XXZZ	9801
111526288285	9812
020711131619 49XX	9806
111526288285	9812
97BQ	9901
BC	9803
86	0007
071119278285909395AN	9812
07111927759599ADAN	9812
0711192795ADAN	9812
111526288285	9812
1720XX	9809
071119279599ADAN	9812
071119278290919395AN	9812
071119278290919395AN	9812
0711XXZZ	9801

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1230	BACKFLOW PREVENTER			33	052	0005
1230	AIR HANDLER	CARRIER		30	052	0040
1230	BACKFLOW PREVENTER			33	052	0005
1230	BACKFLOW PREVENTER			33	052	0005
1230	60"FAN COIL UNIT	TRANE	D23C08	30	052	0030
1230	CONDENSE UNIT	CARRIER	38AB012610	30	052	0050
1230	CONDENSER	LIEBERT	DCDC130A	30	052	0020
1230	TOWER COOLING	MARLEY	5875	20	052	0100
				25	026	0020
				19	052	0010
1230	CHILLER	TRANE	CGAD304AGA1GR	30	052	0020
1230	AIR COOLED CONDENSER	CARRIER	38BA006610	30	052	0030
1230	PACKAGEUNIT	TRANE	W5ZAC2D4LA32A27	30	052	0040
1230	BACKFLOW PREVENTER			33	052	0010
1230	TOWER COOLING	MARLEY		20	052	0160
				25	026	0020
				19	052	0010
1230	BACKFLOW PREVENTER			33	052	0010
1230	CABLE SHOPLIFT	ECONOMY ENG.		20	052	0003
				20	260	0005
1230	WATER STILL FILTER	FULFLOW	BRX8	33	026	0005
1230	ELE.HOIST CAP. 1.5 TON	ROBBINS & MYERS		28	052	0010
				28	260	0040
1230	ELEVATOR HYDRAULIC 4000 LBS	SALEM		28	052	0040
				28	026	0020
				28	260	0040
1230	UP-RIGHT A/C	YORK	EW70-45E	30	052	0040
1230	AIR HANDLER	CLARAGE FAN CO		30	052	0030
1230	AIR HANDLER	CLARAGE FAN CO		30	052	0030
1230	AIR HANDLER	CARRIER	43AA100	30	052	0080
1230	H2O COOLER FLT			33	052	0005
1230	COFFIE H2O			33	052	0005
1230	SIMK FILTER			33	026	0005
1230	BACKFLOW PREVENTER	WATTS	9D	33	052	0005
1230	BACKFLOW PREVENTER	WATTS VAC.BREAKER	MODEL 800	33	052	0005
1230	BACKFLOW PREVENTER	WATTS VAC.BREAKER	MODEL #800	33	052	0005
1230	PACKAGEUNIT	TRANE	WSZAC2D4LA32A27	30	052	0040
1230	400 CY. MG SET	ELEC SPEC CO		13	052	0007

Instruction Code	Date Due
0711XXZZ	9801
071119278290919395AN	9812
0711XXZZ	9801
0711XXZZ	9801
071119278293AN	9812
0711192775829599ADAN	9812
0711192775919599ADAN	9812
03091985BMCECH90ZZ	9810
03071427ABBMXXZZ	9804
041622ZZ	9811
071119279599ADAN	9812
0711192775919599ADAN	9812
07112782909395ADAN	9812
0711XXZZ	9801
030919808385BMCHXXCE	9810
03071427ABBMXXZZ	9804
041622ZZ	9811
0711XXZZ	9801
198211	9810
8688	0111
1720XX	9809
BB	9805
86	0106
97BQ	9901
BC	9804
86	0007
0711278290939599ADAN	9812
07112782909193AN	9812
07112782909193AN	9812
071119278285909395AN	9812
1720XX	9809
1720XX	9809
1720XX	9809
0711XXZZ	9801
0711XX	9801
0711XXZZ	9801
07112782909395ADAN	9812
0307203438XX	9810

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1230	400 CY. MG SET	ELEC.SPEC.CO.		13	052	0020
1230	BREAKER,AIR	GENERAL ELECTRIC		17	052	0008
1230	BREAKER,AIR	GENERAL ELECTRIC		17	052	0008
1230	BREAKER,AIR	GENERAL ELECTRIC		17	052	0008
1230	BREAKER,AIR	GENERAL ELECTRIC		17	052	0008
1230	BREAKER,AIR	GENERAL ELECTRIC		17	052	0008
1230	BREAKER,AIR	GENERAL ELECTRIC		17	052	0008
1230	BREAKER,AIR	GENERAL ELECTRIC		17	052	0008
1230	BREAKER,AIR	GENERAL ELECTRIC		17	052	0008
1230	BREAKER,AIR	GENERAL ELECTRIC		17	052	0008
1230	BREAKER,AIR	GENERAL ELECTRIC		17	052	0008
1230	BREAKER,AIR	GENERAL ELECTRIC		17	052	0008
1230	BREAKER,AIR	GENERAL ELECTRIC		17	052	0008
1230	BREAKER,AIR	GENERAL ELECTRIC		17	052	0008
1230	BREAKER,AIR	GENERAL ELECTRIC		17	052	0008
1230	BREAKER,AIR	GENERAL ELECTRIC		17	052	0008
1230	BREAKER,AIR	GENERAL ELECTRIC		17	052	0008
1230	BREAKER,AIR	GENERAL ELECTRIC		17	052	0008
1230	BREAKER,AIR	GENERAL ELECTRIC		17	052	0008
1230	BREAKER,AIR	GENERAL ELECTRIC		17	052	0008
1230	BREAKER,AIR	GENERAL ELECTRIC		17	052	0008
1230	BREAKER,AIR	GENERAL ELECTRIC		17	052	0008
1230	BREAKER,AIR	GENERAL ELECTRIC		17	052	0008
1230	BREAKER,AIR	GENERAL ELECTRIC		17	052	0008
1230	BREAKER,AIR	GENERAL ELECTRIC		17	052	0008
1230	BREAKER,AIR	GENERAL ELECTRIC		17	052	0008
1230	BREAKER,AIR	GENERAL ELECTRIC		17	052	0008
1230	BREAKER,AIR	GENERAL ELECTRIC		17	052	0008
1230	BREAKER,AIR	I.T.E.		17	052	0008
1230	BREAKER,AIR	I T E		17	052	0008
1230	BREAKER,AIR	I T E		17	052	0008
1230	BREAKER,AIR	GENERAL ELECTRIC		17	052	0008
1230	BREAKER,AIR	WESTINGHOUSE		17	312	0008
1230	BREAKER,AIR	WESTINGHOUSE		17	312	0008
1230	BREAKER,AIR	WESTINGHOUSE		17	312	0008
1230	BREAKER,AIR	WESTINGHOUSE		17	312	0008
1230	BREAKER,AIR	WESTINGHOUSE		17	312	0008
1230	BREAKER,AIR	WESTINGHOUSE		17	312	0008

Instruction Code	Date Due
030720343882XX	9810
1922232431AJ	9512
1922232431AJ	9512
1922232431AJ	9512
1922232431AJ	9512
1922232431AJ	9512
1922232431AJ	9512
1922232431AJ	9512
1922232431AJ	9512
1922232431AJ	9512
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1922232431AJ	9512
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1922232431AJ	9512
1922232431AJ	9512
1922232431AJ	9512
1922232431AJ	9512
1922232431AJ	9701
1922232431AJ	9701
1922232431AJ	9701
1922232431AJ	9701
1922232431AJ	9701
1922232431AJ	9701

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1230	BREAKER,AIR	WESTINGHOUSE		17	312	0008
1230	BREAKER,AIR	WESTINGHOUSE		17	312	0008
1230	BREAKER,AIR	WESTINGHOUSE		17	312	0008
1230	BREAKER,AIR	WESTINGHOUSE		17	312	0008
1230	BREAKER,AIR	WESTINGHOUSE		17	312	0008
1230	BREAKER,AIR	WESTINGHOUSE		17	312	0008
1230	BREAKER,AIR	WESTINGHOUSE		17	312	0008
1230	BREAKER,AIR	WESTINGHOUSE		17	312	0008
1230	AIR HANDLER	CARRIER	38R5-524	30	052	0030
1230	WATER COOLER FILTER	AMF CUNO	AP110	33	052	0005
1230	WATER COOLER FILTER	AMF CUNO	AP110	33	052	0005
1230	WATER COOLER FILTER	AMF CUNO	AP110	33	052	0005
1230	ABSORPTION CHILLER	TRANE	ABSC256	30	260	0800
				30	104	0480
				30	052	0800
1230	AIR HANDLER	CLIMATROL IND INC	YBK-06400-OU	30	052	0040
1230	WATER COOLER FILTER	AMF CUNO	AP110	33	052	0005
1230	84"FAN COIL UNIT	TRANE	D23C12	30	052	0030
1230	H2O COOLER FILTER	AMF CUNO	AP 100	33	052	0005
1230	H2O COOLER FILTER	AMF CUNO	AP100	33	052	0005
1230	WATER COOLER FILTER	AMF CUNO	AP110	33	052	0005
1230	WATER COOLER FILTER	AMF CUNO	AP110	33	052	0005
1230	AIR COOLED CONDENSER	CARRIER	38GF045430	30	052	0040
1230	AIR HANDLER	LISKEY-AIRC	L-10046	30	052	0060
1230	HANDLER	TRANE		30	052	0050
1230	E CHILLER	TRANE	CGAA-1004JB	30	052	0080
1230	AIR HANDLER	TRANE	TYPE M-8	30	052	0020
1230	COMPRESSOR & DRIVE MOTOR	YORK	F3129	30	052	0040
1230	COMPRESSOR & DRIVE MOTOR	YORK	F3129	30	052	0040
1230	CHILLED WATER PUMP 1510	BELL & GOSSETT	6C-11-5/8-BF	20	052	0020
1230	CHILLED WATER PUMP	BELL & GOSSETT	6C-11-5/8-BF	20	052	0020
1230	FAN COIL UNIT 63"	AIRTHERM MFG CO	C	30	052	0030
1230	FAN COIL UNIT 63"	AIRTHERM MFG CO.	C	30	052	0030
1230	68" FAN COIL UNIT	DENCO MFG CORP	DHO-12	30	052	0030
1230	68"FAN COIL UNIT	DENCO MFG CORP	DHO-12	30	052	0030
1230	95"FAN COIL UNIT	AIRTHERM MFG CO	C	30	052	0030
1230	95"FAN COIL UNIT	AIRTHERM MFG CO	C	30	052	0030
1230	AN COIL UNIT	AIRTHERM MFG CO	C	30	052	0030

Instruction Code	Date Due
1922232431AJ	9701
1922232431AJ	9701
1922232431AJ	9701
1922232431AJ	9701
1922232431AJ	9701
1922232431AJ	9701
1922232431AJ	9701
1922232431AJ	9701
07111927828590919 5AN	9812
1720XX	9809
1720XX	9809
1720XX	9809
DWDXCU	0210
DT	9810
DY	9810
071119278290919395AN	9812
1720XX	9809
071119278293AN	9812
1720XX	9809
1720XX	9809
1720XX	9809
1720XX	9809
0711192775829599ADAN	9812
0711192793AN	9812
071119278290919395AN	9812
1127758290919599ADAN	9812
071127828590919395AN	9812
0711277582859599ADANXX	9812
0711277582859599ADANXX	9812
07118283ABBM	9810
07118283ABBM	9810
071119278293AN	9812
071119278293AN	9812
071119278293AN	9812
071119278293AN	9812
071119278293AN	9812
071119278293AN	9812
071119278293AN	9812

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1230	FAN COIL UNIT 63"	AIRTHERM MFG CO	C	30	052	0030
1230	FAN COIL UNIT 63"	AIRTHERM MFG CO	C	30	052	0030
1230	FAN COIL UNIT 63"	AIRTHERM MFG CO	C	30	052	0030
1230	FAN COIL UNIT 63"	AIRTHERM MFG CO	C	30	052	0030
1230	AIR HANDLER	CLIMATROL IND.INC	YBK-044000U	30	052	0040
1230	FAN COIL UNIT 63"			30	052	0030
1230	FAN COIL UNIT 63"			30	052	0030
1230	95"FAN COIL UNIT			30	052	0030
1230	95"FAN COIL UNIT			30	052	0030
1230	95"FAN COIL UNIT			30	052	0030
1230	95" FAN COIL UNIT			30	052	0030
1230	75"FAN COIL UNIT			30	052	0030
1230	33 1/2" FAN COIL UNIT	UNITRANE	D23D02	30	052	0030
1230	33 1/2" FAN COIL UNIT	UNITRANE	D23D02	30	052	0030
1230	H2O SINK FILTER	FULFLOW	BRX8	33	026	0005
1230	LASER FILTER	AMF CUNO	AP100-1	33	026	0005
1230	LASER FILTER	FULFLOW	BR8X	33	026	0005
1230	LASER FILTER	FULFLOW	BR8X	33	026	0005
1230	LMP COOLER FILTER	FULFLOW	BR8X	33	026	0005
1230	DARK RM SINK HOT WATER FIL.	FULFLO	-------	33	026	0005
1230	SINK WATER SUPPLY FILTER	AMF CUNO	AP100	33	026	0005
1230	LASER FILTER	AMF CUNO	AP100	33	026	0005
1230	LASER FILTER	AMF CUNO	AP100	33	026	0005
1230	H2O COOLER FLT			33	052	0005
1230	FILTER-ULTRASONIC SENSING T			33	026	0005
1230	SPREADER BAR 250 LBS.			28	260	0020
				28	052	0005
1230	SPREADER BAR 300 LBS.			28	052	0005
				28	260	0020
1230	SPREADER BAR 300 LBS.			28	052	0005
				28	260	0020
1230	MAN.HOIST 500 LBS.			28	052	0020
				28	260	0040
1230	LIFTING DEVICE (HARNESS)			28	260	0020
1230	LIGHT,EMERGENCY,BATTERY	LIGHT ALARM		19	026	0002
1230	LIGHT,EMERGENCY,BATTERY			19	026	0002
1230	LIGHT, EMERGENCY, BATTERY			19	026	0002
1230	LIGHT, EMERGENCY, BATTERY			19	026	0002

Instruction Code	Date Due
071119278293AN	9812
071119278293AN	9812
071119278293AN	9811
071119278293AN	9811
07111927829O919395AN	9811
071119278293AN	9811
0711192782939N	9811
071119278293AN	9811
071119278293AN	9811
071119278293AN	9812
071119278293AN	9812
071119278293AN	9812
071119278293AN	9812
071119278293AN	9812
1720XX	9809
1720XX	9809
1720XX	9809
1720XX	9809
1720XX	9809
1720XX	9809
1720XX	9809
1720XX	9809
1720XX	9809
1720XX	9809
1720XX	9809
86	0112
0710AG	9712
0710AG	9712
86	0112
0710AG	9712
0	0112
071082	9712
86	0112
86	0110
0407114250XX	9803
0407114250	9803
0407114250	9803
0407114250	9803

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1230	LIGHT, EMERGENCY, BATTERY			19	026	0002
1230	LIGHT,EMERGENCY,BATTERY			19	026	0003
1230	LIGHT,EMERGENCY,BATTERY			19	026	0003
1230	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1230	LIGHT,EMERGENCY,BATTERY			19	026	0003
1230	LIGHT,EMERGENCY,BATTERY	LINK BOY		19	026	0002
1230	LIGHT,EMERGENCY,BATTERY	LINK BOY		19	026	0003
1230	LIGHT,EMERGENCY,BATTERY			19	026	0003
1230	LIGHT EMERGENCY BATTERY	LINK BOY		19	026	0002
1230	LIGHT,EMERGENCY,BATTERY			19	026	0003
1230	LIGHT,EMERGENCY,BATTERY			19	026	0003
1230	LIGHT,EMERGENCY,BATTERY			19	026	0003
1230	LIGHT,EMERGENCY,BATTERY			19	026	0003
1230	LIGHT,EMERGENCY,BATTERY			19	026	0003
1230	LIGHT,EMERGENCY,BATTERY			19	026	0003
1230	LIGHT,EMERGENCY,BATTERY			19	026	0003
1230	LIGHT,EMERGENCY,BATTERY			19	026	0003
1230	LIGHT,EMERGENCY,BATTERY			19	026	0003
1230	LIGHT,EMERGENCY,BATTERY	EXIDE		19	026	0002
1230	LIGHT, EMERGENCY, BATTERY			19	026	0002
1230	LIGHT,EMERGENCY,BATTERY			19	026	0003
1230	FIRE ALARM PANEL(PYRO.SYS.3	EDWARDS CO INC	FA 9	19	052	0080
1230	FIRE ALARM PANEL NOTIFIER	PYROTRONICS CORP	FIU 6	19	052	0260
1230	WET PIPE SPRINKLER SYSTEMS	O.S.&Y VALVE		33	004	0005
				33	052	0640
1230	SPRINKLER SYSTEM (VALVES)	O.S.&Y VALVE		33	004	0020
1230	WATER FLOW DEVICES	POTTER ELECTRIC	WFS-1	33	004	0040
1230	FIRE DEPARTMENT CONNECTIONS			33	004	0010
1230	STANDPIPE SYSTEMS			33	052	0080
1230	RISER FLOW TEST			33	013	0040
1230	WET SYSTEM ALARM			33	013	0020
				33	052	0020
1230	DOMESTIC WATER VALVES 133			33	026	0005
1230B	AIRHANDLER	LIEBERT	MME024EPHU	30	052	0030
1230B	CHILLER	CARRIER	30GA020630	30	052	0040
1230B	CHILLER	CARRIER	30GA-020-630	30	052	0080
1230B	CONDENSER		DMC027A-PLL	30	052	0040
1230B	CONDENSER		DMC027A-PLL	30	052	0040

Instruction Code	Date Due
0407114250	9803
0407114250	9803
0407114250	9803
0407114250	9803
0407114250	9803
0407114250XX	9803
0407114250	9803
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0407114250XX	9803
0407114250	9803
0407114250	9803
0407114250	9803
0407114250	9803
0407114250	9803
0407114250	9803
0407114250	9803
0407114250	9803
0407114250	9803
0407114250XX	9803
0407114250XX	9803
0407114250	9803
031113ASXXBNCSCTELEO	9812
0311ASXXZZBNCSCTELEO	9812
030713ZZXXBNX1X2X3X4	9804
ZZZ11113AD03	9812
030713ZZXXX1X2X3X4BNCSCT	9804
030713ADZZXXX1X2X3X4BNCSCT	9804
071382XXX1X2X3X4	9804
030713BNXXX1X2X3	9812
030713XXX1X2X3X4BNCSCT	9805
030713ADXXBNCSCTX1X2	9805
1113AD03	9812
EVEW	9809
0711192782909193 95AN	9812
071119279599ADAN	9812
071119279599ADAN	9812
0711192775919599ADAN	9812
0711192775919599ADAN	9812

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1230B	AIRHANDLER	LIEBERT	MME024EPHO	30	052	0030
1230B	AIRHANDLER	LIEBERT	FH125AU10	30	052	0030
1230B	AIRHANDLER	CARRIER	39ED57	30	052	0030
1230B	CONDENSOR	LIEBERT	DMC027APLL	30	052	0020
1230B	CONDENSOR	LIEBERT	DCDC130A	30	052	0020
1230B	ELEVATOR HYDRAULIC 2500LB.	OTIS		28	026	0020
				28	052	0040
				28	260	0040
1230B	LIGHT,EMERGENCY,BALLAST			19	026	0005
1230B	LIGHT,EMERGENCY,BALLAST			19	026	0005
1230B	LIGHT,EMERGENCY,BALLAST			19	026	0005
1230B	LIGHT,EMERGENCY,BALLAST			19	026	0005
1230B	LIGHT,EMERGENCY,BALLAST			19	026	0005
1230B	LIGHT,EMERGENCY,BALLAST			19	026	0005
1230B	LIGHT,EMERGENCY,BALLAST			19	026	0005
1230B	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1230B	EXIT EMERG. LIGHT, BATTERY			19	026	0003
1230B	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1230B	EXIT EMERG. LIGHT, BATTERY			19	026	0003
1230B	LIGHT,EMERGENCY,BALLAST			19	026	0005
1230B	LIGHT,EMERGENCY,BALLAST			19	026	0005
1230B	LIGHT,EMERGENCY,BALLAST			19	026	0005
1230B	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1230B	EXIT EMERG. LIGHT, BATTERY			19	026	0003
1230B	LIGHT,EMERGENCY,BALLAST			19	026	0005
1230B	LIGHT,EMERGENCY,BALLAST			19	026	0005
1230B	LIGHT, EMERGENCY BATTERY			19	026	0003
1230B	LIGHT, EMERGENCY BATTERY			19	026	0003
1230B	LIGHT, EMERGENCY BATTERY			19	026	0003
1230B	LIGHT, EMERGENCY BATTERY			19	026	0003
1230B	LIGHT, EMERGENCY BATTERY			19	026	0003
1230B	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1230B	FIRE ALARM PANEL (EDWARDS)	EDWARDS		19	052	0060
				19	104	0040
1230B	WET PIPE SPRINKLER SYSTEMS			33	004	0002
				33	052	0040
1230B	SPRINKLER SYSTEMS (VALVES)			33	004	0020
1230B	WATER FLOW DEVICES	POTTER ELECTRIC	WFS-1	33	004	0040

Instruction Code	Date Due
0711192782909193 95AN	9812
0711192782909193 95AN	9812
0711278285909193 95AN	9812
0711192775919599ADAN	9812
0711192775919599ADAN	9812
BC	9803
97BQ	9901
86	0106
0407114250	9803
0407114250	9803
0407114250	9803
0407114250	9803
0407114250	9803
0407114250	9803
0407114250	9803
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0407114250	9804
0407114250	9804
0407114250	9804
0407114250	9804
031113ASXXBNCSCTELEOX1	9812
ZZ	9808
030713ZZXXX1X2X3X4BN	9804
031113ADZZZ1	9812
030713BNXXX1X2X3X4	9804
030713ADZZXXX1X2X3X4BNCSCT	9804

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1230B	FIRE DEPARTMENT CONNECTIONS			33	004	0005
1230B	STANDPIPE SYSTEMS			33	052	0080
1230B	RISER FLOW TEST			33	013	0040
1230B	POST INDICATOR VALVE			33	013	0020
1230B	WET SYSTEM ALARM TESTING			33	013	0040
1237A	BREAKER AIR CIRCUIT	ALLIS CHALMERS		17	104	0020
1237A	BREAKER AIR CIRCUIT	ALLIS CHALMERS		17	104	0015
1237A	BREAKER AIR CIRCUIT	ALLIS CHALMERS		17	104	0015
1237A	BREAKER AIR CIRCUIT	ALLIS CHALMERS		17	104	0015
1237A	BREAKER AIR CIRCUIT	GENERAL ELECTRIC		17	104	0020
1237A	BREAKER AIR CIRCUIT	GENERAL ELECTRIC		17	104	0015
1237A	BREAKER AIR CIRCUIT	GENERAL ELECTRIC		17	104	0015
1237A	BREAKER AIR CIRCUIT	GENERAL ELECTRIC		17	104	0015
1237A	BREAKER AIR CIRCUIT	GENERAL ELECTRIC		17	104	0015
1237A	BREAKER AIR CIRCUIT	GENERAL ELECTRIC		17	104	0015
1237A	WATER COOLER AND FILTER	SUNROC CORP.		33	052	0005
1237A	MAN. HOIST CAP.1.5 TON	TRIBLONG		28	260	0020
				28	052	0001
1237A	ELE.CHAIN HOIST .5 TON	FORD CHAIN BLOCK		28	052	0040
				28	052	0005
				28	260	0020
1237A	CABLE SHOPLIFT	SMITH COURTNEY CO		20	052	0003
				20	260	0005
1237A	OVERTEMP FOR LINBERGFURNACE	LINDBERG	50-S- 0-3000F	39	052	0020
1237A	TEMP PROGRAMMER	LINDBERG	--------	39	052	0020
1237A	TEMP CONTROLLER	PARTLOW		39	052	0020
1237A	AIR HANDLER	WESTINGHOUSE	UF120WAR	30	052	0050
1237A	HYDRAULIC PUMP	CIRCUITPAK	TIOV-HEB-K420PH	20	052	0050
1237A	AIR HANDLER	WESTINGHOUSE	UF120WAR	30	052	0080
1237A	WATER COOLER AND FILTER			33	052	0005
1237A	BREAKER AIR CIRCUIT	ALLIS CHALMERS		17	104	0015
1237A	BREAKER AIR CIRCUIT	ALLIS CHALMERS		17	104	0015
1237A	BREAKER AIR CIRCUIT	GENERAL ELECTRIC		17	104	0015
1237A	PACKAGE UNIT	WESTINGHOUSE	JF060WAJ	30	052	0080
1237A	HZ GAS ALARM	GENERAL MONITOR	170	39	013	0020
1237A	SCR SINGLE PEN	LEEDS NORTHRUP	H	39	052	0020
1237A	MAN.HYD. LIFT TRUCK 1000 LB	LEE ENGINEERING	PRESTO M466	28	052	0005
				28	260	0020

Instruction Code	Date Due
071382XXX1X2X3X4	9804
030713BNXXX1X2X3	9812
030713XXBNCSCTX1X2X3X4	9805
030713BNXXX1X2X3	9805
030713ADXXX1X2X3BNCSCT	9805
07111931328285	9208
07111931328285	9208
07111931328285	9208
07111931328285	9208
07111931328285	9208
07111931328285	9208
07111931328285	9208
07111931328285	9208
07111931328285	9208
07111931328285	9208
1720XX	9810
86	0102
BB	9801
BQBZ	9809
BB	9804
86	0201
19821188	9801
86	9901
02071113161719XX	9801
02071113171956XX	9801
020711131619XX	9801
0711192782909193AN	9801
071173XX	9801
0711192782909193AN	9801
1720XX	9810
07111931328285	9208
07111931328285	9208
07111931328285	9208
0711278290939599ADAN	9801
02071113161949XX	9805
020711131617195658XX	9801
07112373AB	9801
86	9801

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1237A	LIGHT,EMERGENCY,BATTERY			19	026	0005
1237A	LIGHT,EMERGENCY,BATTERY			19	026	0005
1237A	FIRE ALARM SYSTEM	PYROTRONICS		67	052	0040
				67	104	0040
1237A	WET PIPE SPRINKLER SYSTEMS	FIREMATIC SPR INC	MODEL F-4"	33	004	0005
				33	052	0040
1237A	SPRINKLER SYSTEMS (VALVES)	FIREMATIC SPR INC	MODEL F-4"	33	004	0020
1237A	WATER FLOW DEVICES	POTTER ELECTRIC	MODEL VSR-B	33	004	0080
1237A	FIRE DEPARTMENT CONNECTIONS			33	004	0005
1237A	RISER FLOW TEST	FIREMATIC MFG INC	MODEL F-4"	33	013	0040
1237A	POST INDICATOR VALVE			33	013	0020
1237A	WET SYSTEM ALARM TESTING	POTTER ELECTRIC	MODEL VSR-B	33	013	0040
1237B	PACKAGE AIR CONDITIONER	CLIMATROL	ULS080007U	30	052	0040
1237B	1 TON ELECTRIC HOIST	COLUMBUS MCKINNON		28	260	0010
1237B	OMEGA	BARBER COLMAN	792-L	39	052	0020
1237B	DATAMATE AIR HANDLER	LIEBERT	DME037E-P01	30	052	0020
1237B	DATAMATE AIR HANDIER	LIEBERT	DME020E-P01	30	052	0020
1237B	DATAMATE AIR HANDLER	LIEBERT	DME037E-P01	30	052	0020
1237B	CONDENSING UNIT	LIEBERT	DMC037A-PLL	30	052	0020
1237B	CONDENSING UNIT	LIEBERT	DMC020A-PL1	30	052	0020
1237B	CONDENSING UNIT	LIEBERT	DMC037A-PLL	30	052	0020
1237B	LIGHT,EMERGENCY,BATTERY			19	026	0002
1237B	LIGHT, EMERGENCY BATTERY			19	026	0003
1237C	CONDENSING UNIT	CARRIER	09BB012300	30	052	0050
1237C	CAM PROGRAMMER	BARBER COLMAN	7401-3-2	39	052	0020
1237C	WATER COOLER & FILTER			33	052	0005
1237C	LIGHT, EMERGENCY BATTERY			19	026	0003
1237C	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1237C	WET PIPE SPRINKLER SYSTEMS	STAR MFG. CORP.	MODEL D-4"	33	004	0005
				33	052	0040
1237C	SPRINKLER SYSTEMS (VALVES)	STAR MFG.CORP.	MODEL D-4"	33	004	0020
1237C	WATER FLOW DEVICES	POTTER SECRITY	MODEL VSRB-EX	33	004	0080
1237C	FIRE DEPARTMENT CONNECTIONS			33	004	0005
1237C	RISER FLOW TEST	STAR SPRINKLER CO	MODEL D-4"	33	013	0040
1237C	POST INDICATOR VALVE			33	013	0020
1237C	WET SYSTEM ALARM TESTING	POTTER ELECTRIC	MODEL VSRB-EX	33	013	0040
1238	HOIST ELECTRIC 2 TON	DE-MAG	PL SERIES 84	28	052	0005
				28	052	0040

Instruction Code	Date Due
0407114250	9804
0407114250	9804
0311ASBNCSCTELEOXXX1X2	9812
ZZ	9808
030713BNXXX1X2X3X4Z1	9804
ZZZ11113AD03	9812
030713X1XXBNX2X3X4	9804
030713ADXXX1X2X3X4BNCSCT	9804
071382X1XXX2X3X4	9804
030713ZZXXX1X2X3X4BNCSCT	9805
030713XXX1BNX2X3	9805
030713ADZZBNCSCTXXX1	9805
112782909395ADAN	9802
86	0201
02071113171956XX	9802
07111927829093AN	9802
0711192782909193AN	9802
07111927829093AN	9802
071127829395ADAN	9802
071127829395ADAN	9802
071127829395ADAN	9802
0407114250	9804
0407114250	9804
0711192782AB	9801
02071113171956XX	9702
1720XX	9810
0407114250	9804
0407114250	9804
030713X1XXBNX2X3X4ZZZ1	9804
ZZZ11113AD03	9812
030713X1XXBNX2X3X4	9804
030713ADXXX1X2X3X4BNCSCT	9804
071382X1XXX2X3X4	9804
030713ZZXXX1X2X3X4BNCSCT	9805
030713XXX1BNX2X3	9805
030713ADXXBNCSCTX1ZZ	9805
BB	9805
BQBZ	9809

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
				28	260	0020
1238	H2O COOLER FILTER			33	052	0005
1238	H2O COOLER FILTER			33	052	0005
1238	BACKFLOW PREVENTER			33	052	0010
1238	EXIT EMERG. LIGHT, BATTERY			19	026	0005
1238	LIGHT,EMERGENCY,BATTERY	EMERGI-LITE	ME-4 120/277VAC	19	026	0003
1238	LIGHT,EMERGENCY,BATTERY	EMERGI-LITE	JSM18-2	19	026	0003
1238	LIGHT,EMERGENCY,BATTERY			19	026	0002
1238	LIGHT,EMERGENCY,BATTERY			19	026	0002
1238	LIGHT,EMERGENCY,BATTERY	LEXTRON	ML-2 120VAC,	19	026	0003
1238	LIGHT,EMERGENCY,BATTERY			19	026	0003
1238	LIGHT,EMERGENCY,BATTERY	WORLD LIGHTING PT	CPL-2-2V	19	026	0003
1238	LIGHT,EMERGENCY,BATTERY	EXIDE	LSS 120/277VAC	19	026	0005
1238	LIGHT,EMERGENCY,BATTERY			19	026	0002
1238	LIGHT,EMERGENCY,BATTERY			19	026	0002
1238	LIGHT,EMERGENCY,BATTERY			19	026	0002
1238	LIGHT,EMERGENCY,BATTERY			19	026	0002
1238	LIGHT,EMERGENCY,BATTERY			19	026	0002
1238	LIGHT,EMERGENCY,BATTERY			19	026	0002
1238	LIGHT,EMERGENCY,BATTERY			19	026	0002
1238	LIGHT,EMERGENCY,BATTERY			19	026	0002
1238	LIGHT,EMERGENCY,BATTERY			19	026	0002
1238	LIGHT, EMERGENCY, BATTERY			19	026	0002
1238	LIGHT,EMERGENCY,BATTERY			19	026	0005
1238	LIGHT, EMERGENCY, BATTERY			19	026	0002
1238	LIGHT, EMERGENCY, BATTERY			19	026	0002
1238	LIGHT,EMERGENCY,BATTERY			19	026	0002
1238	WET PIPE SPRINKLER SYSTEMS	STANDARD MFG.	MODEL A-8"	33	004	0005
				33	052	0040
1238	SPRINKLER SYSTEMS (VALVES)	STANDARD MFG.	MODEL A-8"	33	004	0020
1238	WATER FLOW DEVICES	POTTER ELECTRIC	MODEL VSR-B	33	004	0080
1238	FIRE DEPARTMENT CONNECTIONS			33	004	0005
1238	RISER FLOW TEST	STANDARD MFG CO	MODEL A-8"	33	013	0040
1238	POST INDICATOR VALVE			33	013	0020
1238	WET SYSTEM ALARM TESTING	POTTER ELECTRIC	MODEL VSR-B	67	013	0040
1238A	BACKFLOW PREVENTER	WATTS	900	33	052	0005
1238A	AIR-HANDLER	TRANE	MZ-14	30	026	0050
1238A	AIR-HANDLER	TRANE	MCCA014GAEOABA	30	052	0020

Instruction Code	Date Due
86	0008
1720XX	9810
1720XX	9810
0711XXZZ	9801
0407114250	9804
0407114250XX	9804
0407114250XX	9804
0407114250XX	9804
0407114250XX	9804
0407114250XX	9804
0407114250	9804
0407114250XX	9804
0407114250XX	9804
0407114250XX	9804
0407114250XX	9804
0407114250XX	9804
0407114250XX	9804
0407114250XX	9804
0407114250XX	9804
0407114250XX	9804
0407114250XX	9804
0407114250XX	9804
0407114250	9804
0407114250XX	9804
0407114250XX	9804
0407114250	9804
030713X1XXBNX2X3X4Z1	9804
ZZZ11113AD03	9812
030713X1XXBNX2X3X4	9804
030713ADX1XXBNCSCTX2X3X4	9804
071382X1XXX2X3X4	9804
030713ZZXXX1X2X3X4BNCSCT	9805
030713XXX1X2X3BN	9805
030713ADZZBNCSCTXXX1	9805
0711XXZZ	9801
0711192782909193AN	9807
0711192782909193AN	9901

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1238A	CONDENSOR	TRANE	RAUCC204GG030F9	30	052	0020
1238A	GRINDER,BENCH	BALDOR ELECTRIC	7306D	20	052	0010
1238A	BANDSAW, FLOOR	POWERMATIC	87	20	052	0010
1238A	MILLING MACHINE	MONARCH	08EE	20	052	0010
1238A	DRILL PRESS, FLOOR, RADIAL		15-120	20	052	0010
1238A	SHEAR, BENCH	DI-ACRO	4	20	052	0010
1238A	BRAKE, FINGER	DI-ACRO	24	20	052	0010
1238A	PUNCH, TURRET	DI-ACRO	18	20	052	0010
1238A	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1238A	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1238A	LIGHT, EMERGENCY BATTERY			19	026	0003
1238B	SCR SINGLE PEN	LEEDS NORTHRUP	W	39	052	0020
1238B	TOWER COOLING	MARLEY		20	052	0040
				19	052	0010
1238B	LATHE WOOD AND MTR	OLIVER MACH CO	26	20	052	0010
1238B	SAW BAND AND MTR	DOALL CORP	2013-10	20	052	0010
1238B	PRESS DRILL AND MTR	ROCKWELL MFG CO	15-127	20	052	0010
1238B	ONSRUD OVERHEAD ROUTER	ONSRUD	A-1136-A	20	052	0010
1238B	DUST COLLECTOR	TWIN CITY FAN	BCV	20	052	0020
1238B	PUMP VACUUM AND MOTOR	BEACH RUSS	15	20	052	0010
1238B	SAW BAND AND MOTOR	DOALL CORP	2013-1	20	052	0010
1238B	JOINTER AND MTR	OLIVER		20	026	0010
1238B	PLANNER THK WOOD	OLIVER MACH CO		20	052	0010
1238B	SAW CIRCULAR AND MTR	POWERMATIC	66	20	052	0010
1238B	JOINTER AND MOTOR	MONARCH		20	026	0010
1238B	GASTECH OXYGEN ALARM SYSTEM	GASTECH INC.	1220-101210	39	013	0020
1238B	LATHE WOOD AND MTR	OLIVER		20	052	0010
1238B	SANDER DISC DRUM	OLIVER MACH CO		20	052	0010
1238B	SAW BAND AND MTR	TANNEWITZ	GHE	20	052	0010
1238B	SAW CIRCULAR AND MTR	OLIVER		20	052	0010
1238B	LATHE 14 INCH LATHE MET	LODGE & SHIPLEY		20	052	0010
1238B	SAW AND MTR	DEWALT	GE	20	052	0010
1238B	LATHE AND MTR	SOUTH BEND	1307	20	052	0040
1238B	BUFFER PORTABLE	GENERAL ELECTRIC	5KH45AB1647X	20	052	0010
1238B	DRILL PRESS AND MTR	LELAND GIFFORD		20	052	0010
1238B	LIFT TRUCK & MTR PUMP	ECONOMY ENGR	CW-66	20	052	0002
				19	052	0002
				20	260	0010

Instruction Code	Date Due
07111927759599ADAN	9901
82	9801
82AV	9812
82	9801
82	9801
82	9801
82	9801
82	9801
0407114250	9804
0407114250	9804
0407114250	9804
0207111316171956 58XX	9901
0309808385BMCECH	9901
041622	9811
8290XX	9901
1982XXZZ90	9901
82XX90	9901
82XX	9901
208290XX	9901
8290XX	9901
088290XX	9901
82XXX1	9807
82XXX1	9901
8285	9901
82XXX1	9807
0216	9804
82XX90	9901
82XXZZ	9901
82XX87	9901
82XX85	9901
82XX90	9901
82XX	9901
AVXXZZ82	9901
82XX	9901
088290AEXX	9901
08131982XX	9901
4246	9901
86	0201

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1238B	SANDER DISC	OLIVER		20	052	0010
1238B	SAW JIG	OLIVER	273-R	20	052	0010
1238B	SANDER SPINDLE AND MOTOR	FREEMAN SUPPLY CO		20	052	0010
1238B	SAW BAND AND MOTOR	TANNEWITZ	GHE	20	052	0010
1238B	RELIEF VALVE NITROGEN	ANDERSON-GREENWOO	83288	33	208	0010
				26	208	0010
1238B	SANDER DISC	SYRACUSE SAND CO		20	052	0010
1238B	RELIEF VALVE NITROGEN	ANDERSON GREENWOO	23/6J23	26	208	0010
				33	208	0010
1238B	RELIEF VALVE NITROGEN	ANDERSON GREENWOO	83C68-4	33	208	0010
				26	208	0010
1238B	DRILL PRESS	SIGOURNEY TOOL CO	100 A4157	20	052	0080
1238B	REDUCING STATION	LESLIE	GPK-1 11/4IN	33	052	0040
1238B	JOINTER AND MOTOR 20IN	OLIVER	166-DD	20	026	0010
1238B	MACH MILL	GORTON	1-22	20	052	0010
1238B	TABLE EXHAUST	FISHER		20	052	0010
1238B	TABLE EXHAUST GRINDING	TORIT CORP	DDHV-45	20	052	0010
1238B	AUTOCLAVE FAN DRIVE SYSTEM	ENGINEERING INC.		19	052	0005
1238B	PUMP,VACUUM AUTOCLAVE &MTR	BEACH RUSS CO	135D	29	052	0020
1238B	DIALATROL TEMP IND(LG.PROSS	HONEWELL	R7351	39	052	0020
1238B	YCM 3 AXIS SUPERMAX	YEONG CHIN IND CO	YCM-60	20	026	0010
				19	052	0010
1238B	SCR PRINTER (TOP OF PRESS)	HONEYWELL		39	052	0020
1238B	HYDRAULIC SHOPLIFT	ECONOMY ENGR		20	052	0006
				20	260	0040
1238B	DRILL PRESS	SIGOURNEY TOOL CO		20	052	0010
1238B	GRINDER PRECISION TOOL	E F HAGER & SON P		20	052	0010
1238B	GRINDER, TOOL AND CUTTER	KUHLMANN AMER		20	052	0010
1238B	PROPORTION NULL CONTROLLER	TENNEY		39	052	0020
1238B	DUST COLLECTORS FAN & MTR	TORIT	TJ-1390-155	20	052	0010
1238B	DUST COLLECTOR A	TORIT	TJ-1390-155	20	052	0010
1238B	DUST COLLECTOR B	TORIT	TJ-1390-155	20	052	0020
1238B	WRM GEAR TRANS&MTR,DUST COL	TORIT	TJ-1390-155	20	052	0020
1238B	LATHE PATTERNMAKERS	OLIVER MACH CO	N 29 MW 60	20	052	0010
1238B	PAINT SHAKER AND MTR	RED DEVIL		20	052	0010
1238B	CONDENSOR	BALLY	PL-300-2	30	052	0020
1238B	PRESS HYDRAULIC	NORDBERG MFG CO		29	052	0020
1238B	HYDRAULIC BOOM LIFT PORT.	RUGER EQUIPMENT	PH18	20	052	0020

Instruction Code	Date Due
82XX	9901
82XX	9901
82XX	9901
82XX87	9901
0711EAXXES	0001
ETXX	0001
82XX	9901
ETXX	0001
0711EAXXES	0001
0711EAXXES	0001
ETXX	0001
XX8290	9901
0711XX	9804
82XX	9807
82XX	9901
82XX	9902
82XX	9901
0738	9901
7990ATXXX1ZZ	9901
02071113161719XX	9901
027982XXZZ	9807
020307131922	9901
0207111316171956 58XX	9901
1942738211	9901
86	9908
8290XX	9901
82	9901
82XX90	9901
02071113171956XX	9901
829091	9901
07101112192094AEXX	9901
2094AEXX	9901
808291AEXX	9901
82XXZZ90	9901
82XX	9901
0711192782AB	9901
75XX	9901
738211	9901

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
				20	260	0020
1238B	PRESS HYDRAULIC	PASADENA HYD	5150R2/42X36XXD	29	052	0020
1238B	MACH LATHE AND MTR	LEBOND		20	052	0080
1238B	MACH LATHE AND MTR	CINCINNATI LATHE		20	052	0080
1238B	WALK-IN-BOX	BALLY	4884-1	30	052	0020
1238B	SPINDLE SANDER - STATE	FREEMAN MFG CO	T5	20	052	0080
1238B	HYDRAULIC BOOM LIFT PORT.	AIR TECH INDUSTRY	HM2000P16	20	052	0020
				20	260	0020
1238B	OVEN,AIR CONVECTION OVEN 9	BLUE M ELECTRIC	POM-256E-1HP	39	052	0020
1238B	WELDER,BAND SAW	FAHRINGER	WG10	20	052	0010
1238B	TOWER,COOLING	HALSTEAD-MITCHELL	GCKA-30	20	052	0030
1238B	SAW CIRCULAR AND MTR	DEWALT INC	3436	20	052	0080
1238B	IND CONTROLLER (OVEN)	BLUE M	80	39	052	0020
1238B	MILLING MACH AND MTR	GORTON	0-16	20	052	0010
1238B	ABSORPTION MACHINE	CARRIER	16JB021-604	30	260	0800
				30	104	0480
				30	052	0800
1238B	CHILL WATER PUMP	BELL GOSSETT	2BB-8-1/8-BF	20	052	0030
1238B	CHILL WATER PUMP	BELL GOSSETT	2BB-8-1/8-BF	20	052	0030
1238B	AIR HANDLER	CARRIER	39EB15	30	026	0050
1238B	CONDENSOR	TRANE	RAUA-2504MA	30	052	0030
1238B	WALK-IN FREEZER	BALLY	6084-1	30	052	0030
1238B	CONDENSER	CARRIER	38EN036600	30	052	0020
1238B	CONDENSER	CARRIER	38EN036600	30	052	0020
1238B	AIRHANDLER	CARRIER	390A-060-A12	30	052	0010
1238B	AIR-COOLED-CONDENSOR	BALLY	FN150A-1	30	052	0020
1238B	WALK-IN-FREEZER	BALLY	BF-300A-2	30	052	0010
1238B	AIR HANDLER	CARRIER	39EB39	30	013	0050
1238B	AIR HANDLER	CARRIER	39EB32	30	013	0050
1238B	RETURN AIR BLOWER			30	013	0060
1238B	CONDENSING UNIT	COPELAMATIC		30	052	0030
1238B	YALE 1/4 TON ELECTRIC HOIST	YALE	MEL1/4 10H32S1	28	052	0020
				28	052	0005
				28	260	0020
1238B	DIMILL 3 AXIS KAMOTO	OKAMOTO	HMC-3000 NO.9	19	052	0020
				20	052	0010
1238B	DUST COLLECTOR	CHELSEA FAN CO		20	052	0020
1238B	SHEAR-METAL	DI-ACRO	24	20	052	0010

Instruction Code	Date Due
86	0001
75XX	9901
XX82	9901
XX82	9901
07111995AN	9901
XX75	9901
7382	9901
86	0001
0207111618	9901
82	9801
85BMCECH90	9901
XX	9901
020711131617l9XX	9901
82XX	9901
DWDXCU	0001
DT	9803
DY	9809
83ABBM	9901
83ABBM	9901
0711192782909193AN	9807
07111927759599ADAN	9901
071119279599AN	9901
07111927759599ADAN	9901
07111927759599ADAN	9901
0711192782909192AN	9901
07278295AN	9901
07111995AN	9901
0711192782909193AN	9804
0711192782909193AN	9804
0711192782909193AN	9804
07111927759599ADAN	9901
BQ	9807
BB	9804
86	0203
020307132034XXZZ	9901
0279808293XX	9901
20829091XX	9901
82	9901

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1238B	FINGER BRAKE	DI-ACRO	24	20	052	0010
1238B	PLANER WOOD 24IN	OLIVER	299-D	20	052	0010
1238B	DRILL PRESS	MEDDINGS	A-10	20	052	0010
1238B	LATHE 14 INCH WOOD	OLIVER	2159T	20	052	0010
1238B	RELIEF VALVE WATER	ANDERSON GREENWOO	8305J23	33	208	0005
				26	208	0010
1238B	VALVE RELIEF	LONERGRAN MFG CO	V411	26	260	0010
				33	260	0005
1238B	VALVE RELIEF	LONERGRAN MFG CO	V422	26	260	0010
				33	260	0005
1238B	JET CHAIN HOIST	JET EQUIP & TOOL	MODEL L-90	28	260	0040
1238B	BATTERY OPERATED SHOP LIFT	LEE ENGR. CO.	C62	20	260	0020
1238B	BLACK JACK 4500 LB PALLIFT	ECOA		20	260	0040
1238B	LIGHT,EMERGENCY,BATTERY			19	026	0002
1238B	EXIT EMERG. LIGHT, BATTERY			19	026	0005
1238B	LIGHT,EMERGENCY,BATTERY			19	026	0005
1238B	LIGHT, EMERGENCY BATTERY			19	026	0003
1238B	LIGHT, EMERGENCY BATTERY			19	026	0003
1238B	FIRE ALARM PANEL(PYRO.SYS.3	FIRELITE ALARMS	CF32	19	052	0220
1238B	WET PIPE SPRINKLER SYSTEMS	FIREMATIC SPR INC	MODEL F-4"	33	004	0005
				33	052	0040
1238B	SPRINKLER SYSTEMS (VALVES)	FIREMATIC SPR INC	MODEL F-4"	33	004	0020
1238B	WATER FLOW DEVICES	POTTER ELECTRIC	MODEL VSR-B	33	004	0080
1238B	FIRE DEPARTMENT CONNECTIONS			33	004	0005
1238B	RISER FLOW TEST	FIREMATIC MFG CO	MODEL-F-4"	33	013	0040
1238B	POST INDICATOR VALVE			33	013	0020
1238B	WET SYSTEM ALARM TESTING			33	013	0040
1267A	AIR BRIDGE CRANE 1.5 TON	DETROIT		28	052	0010
				28	052	0020
				28	260	0040
1267A	TEMPERATURE CONTROLLER	L&N	5	39	052	0020
1267A	VACUUM CONTROLLER	L&N	5	39	052	0020
1267A	HYDRAULIC SHOPLIFT	ECONOMY ENG CO		20	260	0040
				20	052	0006
1267A	TEMP CONTROLLER	LOVE CONTROLS	149	39	052	0020
1267A	TEMP CONTROLLER	LOVE CONTROLS	149	39	052	0020
1267A	COOLING CONTROLLER	LOVE CONTROLS	156	39	052	0020
1267A	500TON MOLDING PRESS	THE OLIVER CORP.		20	052	0030

Instruction Code	Date Due
82	9901
0882XXX1	9901
82XX90	9901
82XX90	9901
0711EAESXX	0001
ETXX	0001
ETXX	0201
0711EAES	0201
ETXX	0201
0711EAES	0201
86	0012
86	0301
86	9908
0407114250XX	9804
0407114250XX	9804
0407114250	9804
0407114250	9804
0407114250	9804
0311ASBNXXZZCSCTELEO	9812
030713X1XXBNX2X3X4Z1	9804
ZZZ11113AD03	9812
030713X1XXBNX2X3X4	9804
030713ADX1XXBNCSCTX2X3X4	9804
071382X1XXX2X3X4	9804
030713XXX1X2X3X4BNCSCT	9805
030713XXX1X2X3BN	9805
030713ADXXX1BNCSCT	9805
BB	9805
BZ	9904
86	0108
020708111619XX	9804
020708111619XX	9804
86	0204
19738211	9804
0708111619XX	9804
0708111619XX	9804
0708111619XX	9804
08121973758182AY09XX	9804

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
				26	052	0080
				33	052	0080
				19	052	0020
1267A	300TON MOLDING PRESS	ERIE FOUNDRY CO		20	052	0030
1267A	50TON MOLDING PRESS	PHI	ST50/15-S	20	052	0030
1267A	12TON MOLDING PRESS	WABASH	12-12-2TM	20	052	0020
1267A	30TON MOLDING PRESS	WABASH	30-12-2TM	20	052	0020
1267A	30TON MOLDING PRESS	WABASH	30-12-2TMAC	20	052	0030
1267A	ELE.BRIDGE CRANE 1.5 TON	ROBBINS & MYERS		28	052	0010
				28	052	0040
				28	260	0040
1267A	CONDENSING-UNIT	CARRIER	38QN060600	30	052	0020
1267A	AIRHANDLER	CARRIER	40QH060300	30	052	0020
1267A	PACKAGE-UNIT	CARRIER	50QD006620DA	30	052	0030
1267A	PACKAGE-UNIT	CARRIER	50DP009600AA	30	052	0020
1267A	TOWER COOLING AND MTR	THE MARLEY CO.		25	026	0020
				20	052	0010
				19	052	0010
1267A	SHOPLIFT	ECONOMY ENG.		20	260	0010
				20	052	0006
				19	052	0005
1267A	AIR HANDLER,PACKAGE,COOLING	TRANE CO	SA204C	30	052	0050
1267A	AIR COOLED CONDENSER	TRANE CO.	CA-2008	30	052	0030
1267A	AIR HANDLER,PACKAGE,COOLING	TRANE CO	SA204C	30	052	0050
1267A	AIR COOLED CONDENSER	TRANE CO.	CA-2008	30	052	0030
1267A	H2O COOLER FILTER	AMF CUNO	AP100	33	052	0005
1267A	STEAM TRAP 350	ARMESTRONG 1/2	1811	33	052	0005
1267A	STEAM TRAP 125 PSI	NICKOLSON	MT60-4	33	052	0005
1267A	STEAM TRAP 125 PSI	YARWAY 1/2	710	33	052	0005
1267A	STEAM TRAP 125 PSI	YARWAY 3/4	720	33	052	0005
1267A	STEAM TRAP	HOFFMAN 3/4		33	052	0005
1267A	STEAM TRAP	TRANE 3/4		33	052	0005
1267A	STEAM TRAP	HOFFMAN 3/4		33	052	0005
1267A	STEAM TRAP	BUDDY 3/4		33	052	0005
1267A	STEAM TRAP	HOFFMAN 3/4		33	052	0005
1267A	STEAM TRAP	HOFFMAN 3/4		33	052	0005
1267A	STEAM TRAP	HOFFMAN 3/4		33	052	0005
1267A	STEAM TRAP	HOFFMAN 3/4		33	052	0005

Instruction Code	Date Due
XX	9804
X1	9804
0307091922	9704
0809121973758182AY67	9804
0809121973758182AY	9804
0809121973758182AY	9804
0809121973758182AY	9804
0809121973758182AY	9804
BB	9805
BQBZ	9904
86	0108
07111927759599ADAN	9804
0711278290939599ADAN	9804
0711278290939599ADAN	9804
0711278290939599ADAN	9804
03071427ABBMXXZZ	9804
CH030919808385BMZZX1	9804
041622174849ZZ	9811
86	0004
19738211	9804
03071922	9704
071127758290919395AN	9804
0711192782909195AN	9804
071127758290919395AN	9804
0711192782909195AN	9804
1720XX	9810
0711XX	9804
0711XX	9804
0711XX	9804
0711XX	9804
0711XX	9804
0711XX	9804
0711XX	9804
0711XX	9804
0711XX	9804
0711XX	9804
0711XX	9804
0711XX	9804

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1267A	STEAM TRAP	STERLING 3/4		33	052	0005
1267A	STEAM TRAP	HOFFMAN 3/4		33	052	0005
1267A	STEAM TRAP	HOFFMAN 3/4		33	052	0005
1267A	STEAM TRAP	HOFFMAN 3/4		33	052	0005
1267A	STEAM TRAP	HOFFMAN 3/4		33	052	0005
1267A	STEAM TRAP	HOFFMAN 3/4		33	052	0005
1267A	STEAM TRAP	ARMSTRONG 3/4		33	052	0005
1267A	STEAM TRAP	ARMSTRONG 3/4		33	052	0005
1267A	STEAM TRAP	DUNHAM 3/4		33	052	0005
1267A	STEAM TRAP	DUNHAM 3/4		33	052	0005
1267A	STEAM TRAP	DUNHAM 3/4		33	052	0005
1267A	STEAM TRAP	HOFFMAN 3/4		33	052	0005
1267A	STEAM TRAP	HOFFMAN 3/4		33	052	0005
1267A	STEAM TRAP	ANDERSON 3/4		33	052	0005
1267A	STEAM TRAP	HOFFMAN 3/4		33	052	0005
1267A	STEAM TRAP	DUNHAM 3/4		33	052	0005
1267A	STEAM TRAP	STERLING 3/4		33	052	0005
1267A	STEAM TRAP	ARMSTRONG 3/4		33	052	0005
1267A	SCR SINGLE PEN	LEEDS NORTHRUP	W	39	052	0020
1267A	TEMP CONTROLLER OMEGA 2010	LEEDS NORTHRUP	PN 354162	39	052	0020
1267A	HI LIMIT CONTROL OMEGA 50	LEEDS NORTHRUP	H	39	052	0020
1267A	CCR OMEGA	OMEGA	CT 1000	39	052	0020
1267A	TEMP CONTROLLER OMEGA	OMEGA	CN2011	39	052	0020
1267A	HILIMIT NEWPORT	NEWPORT	82	39	052	0020
1267A	TEMP CONTROL OMEGA	OMEGA	CN 2011	39	052	0020
1267A	HILIMIT NEWPORT	WHEELCO		39	052	0020
1267A	SCR PRINTER	HONEYWELL	153058360601100	39	052	0020
1267A	SCR DOUBLE PEN	R AND I	64A1PG57021	39	052	0020
1267A	CONTROLLER(MICRISTAR)	R AND I	TL 5192	39	052	0020
1267A	CONTROLLER IND	BARBER COLMAN	523B40016031003	39	052	0020
1267A	CONTROLLER IND	BARBER COLMAN	523B40016031003	39	052	0020
1267A	CONTROLLER IND	BARBER COLMAN	523B40016031003	39	052	0020
1267A	CONTROLLER IND	BARBER COLMAN	523B40016031300	39	052	0020
1267A	PSI CONTROLLER	BRISTOL	JIC	39	052	0020
1267A	SCR SINGLE PEN	BRISTOL	64A1PJ571J1C251	39	052	0020
1267A	TEMP CONTROLLER	BRISTOL	J1C	39	052	0020
1267A	TEMP IND PYRO-VANE CONTROL	HONEYWELL	105C204PS22	39	052	0020
1267A	TEMP IND PYRO-VANE CONTROL	HONEYWELL	Y105C204PS131	39	052	0020

Instruction Code	Date Due
0711XX	9804
0711XX	9804
0711XX	9804
0711XX	9804
0711XX	9804
0711XX	9804
0711XX	9804
0711XX	9804
0711XX	9804
0711XX	9804
0711XX	9804
0711XX	9804
0711XX	9804
0711XX	9804
0711XX	9804
0711XX	9804
0711XX	9804
0711XX	9804
0711XX	9804
0207111316171956 58XX	9804
02071113171956XX	9804
02071113171956XX	9804
0207111316171956 58XX	9804
02071113171956XX	9804
0207111316175658XX	9804
0207111316175658XX	9804
02071113171956XX	9804
0207111316171956 58XX	9804
0207111316171956 58XX	9804
02071113171956XX	9804
02071113171956XX	9804
02071113171956XX	9804
02071113171956XX	9804
02071113171956XX	9804
02071113171956XX	9804
0207111316171956 58XX	9804
02071113171956XX	9804
02071113171956XX	9806
02071113171956XX	9806

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1267A	PYRO-VANECONTROLLER	HONEYWELL	Y105C204PS131	39	052	0020
1267A	PYRO-VAN CONTROLLER	HONEYWELL	105C204PS22	39	052	0020
1267A	RELIEF VALVE	KUNKLE VALVE CO		33	260	0010
				26	260	0010
1267A	RELIEF VALVE	REPUBLIC MFG	636B-4-314-2	33	260	0010
				26	260	0010
1267A	RELIEF VALVE	REPUBLIC MFG	636B-4-314-2	33	260	0010
				26	260	0010
1267A	RELIEF VALVE	KUNKLE VALVE CO		33	260	0010
				26	260	0010
1267A	RELIEF VALVE 3/4 X 1	TELEDYNE FARRIS	TYPE 2740	33	260	0010
				26	260	0010
1267A	RELIEF VALVE	KUNKLE VALVE CO		33	260	0010
				26	260	0010
1267A	RELIEF VALVE	TELEDYNE REPUBLIC	C 5	33	260	0005
				26	260	0010
1267A	RELIEF VALVE	ANDERSON GRNWD CO		33	260	0010
				26	260	0010
1267A	RELIEF VALVE	J E LONERGAN CO	LOT 2OT	33	260	0010
				26	260	0010
1267A	DRUM LIFT 1200 LBS.			28	052	0005
				28	260	0020
1267A	COMEALONG .75 TON	C&M	B	28	052	0015
				28	260	0020
1267A	LIGHT,EMERGENCY,BATTERY			19	026	0005
1267A	FIRE ALARM SYSTEM	SIMPLEX	SIMPLEX	67	104	0020
				67	052	0100
1267A	WET PIPE SPRINKLER SYSTEMS	GEM MFG CORP.	MODEL F200-6"	33	004	0020
				33	052	0080
1267A	SPRINKLER SYSTEMS (VALVES)	GEM MFG. CORP.	MODEL F200-6"	33	004	0020
1267A	WATER FLOW DEVICES	GEM PRESSURE SW.	MODEL B2	33	004	0080
1267A	FIRE DEPARTMENT CONNECTIONS			33	004	0005
1267A	STANDPIPE SYSTEMS			33	052	0080
1267A	RISER FLOW TEST			33	013	0040
1267A	POST INDICATOR VALVE			33	013	0020
1267A	WET SYSTEM ALARM TESTING			33	013	0040
1268	AIR HANDLER	CARRIER	39AC7B299-1-1	30	026	0040
1268	AIR HANDLER	CARRIER	43J9494	30	026	0040

Instruction Code	Date Due
02071113171956XX	9806
02071113171956XX	9806
0711XXEA	9806
ETXX	9806
0711XXEA	9806
ETXX	9806
0711XXEA	9806
ETXX	9806
0711XXEA	9806
ETXX	9806
0711XXEA	9806
ETXX	9806
0711XXEA	9806
ETXX	9806
0711EAESXX	9806
ETXX	9806
0711XXEA	9806
ETXX	9806
0711XXEA	9806
ETXX	9806
0710AG	9804
86	0104
071082	9804
86	0104
0407114250	9805
ZZ	9810
0311ASBNCSCTELEOXXX1	9901
030713X1XXBNX2X3X4Z1	9804
030713ZZZ1	9901
030713X1XXBNX2X3X4	9804
030713ADZZX1BNCSCTX2X3X4XX	9804
071382X1XXX2X3X4	9804
030713BNXXX1X2X3	9901
030713BNCSCTXXX1X2X3X4	9806
030713BNXXX1X2X3	9806
030713ADBNCSCTXXX1X2	9806
07111927829091AN	9709
07111927829091AN	9709

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1268	HOT WATER CIRC. PUMP	BELL&GOSSETT	9M2-1579-7.5	20	052	0020
1268	HOT WATER CIRC PUMP	BELL&GOSSETT	9M2-1519-7.5	20	052	0020
1268	PALLET LIFT	CROWN	PTH20-36	20	052	0003
				20	260	0040
1268	PALLET LIFT	CROWN	PTH27-48	20	052	0003
				20	260	0040
1268	BACKFLOW PREVENTER			33	052	0010
1268	WATERCOOLER FILTER			33	052	0005
1268	WATERCOOLER FILTER			33	052	0005
1268	AIRHANDLER	TRANE	MCCA010GAMOACA	30	026	0040
1268	BREAKER,AIR CIRCUIT	GENERAL ELECTRIC		17	104	0010
1268	WATERCOOLER FILTER			33	052	0005
1268	WATERCOOLER FILTER			33	052	0005
1268	BREAKER,AIR CIRCUIT	GENERAL ELECTRIC		17	104	0010
1268	CHILLER	TRANE	CVHE050KA1X3UN2	30	052	0160
1268	BREAKER,AIR CIRCUIT	GENERAL ELECTRIC		17	104	0010
1268	BREAKER,AIR CIRCUIT	GENERAL ELECTRIC		17	104	0010
1268	BREAKER,AIR CIRCUIT	GENERAL ELECTRIC		17	104	0010
1268	ELEVATOR TRACTION 5000 LBS	MONARCH		28	026	0020
				28	052	0040
				28	260	0070
1268	BREAKER,AIR CIRCUIT	GENERAL ELECTRIC		17	104	0010
1268	COOLING TOWER FAN MOTORS(3)	CERAMIC TOWER		20	026	0160
				25	026	0020
				19	052	0010
				13	052	0060
1268	CHILLER	TRANE	CVHE50KA2E03UN2	30	104	0320
				30	052	0016
				13	052	0080
				30	260	0640
1268	CHILLER	TRANE	CVHE50KAZE03UNZ	30	052	0016
				30	260	0640
				30	104	0320
1268	HOIST ELECT 5TON	WRIGHT	WHEL2	28	052	0020
				28	052	0010
				28	260	0040
1268	HOIST ELECT 5TON	WRIGHT	WHEL2	28	052	0020
				28	052	0010

Instruction Code	Date Due
07118283ABBM	9803
07118283ABBM	9803
11197382	9803
86	9903
11197382	9803
86	9903
0711XXZZ	9808
1720XX	9810
1720XX	9810
07111927829091AN	9802
07111931328285	9209
1720XX	9810
1720XX	9810
07111931328285	9209
03DU	9902
07111931328285	9209
07111931328285	9209
07111931328285	9209
BC	9803
AXBQ	9902
86XX	0006
07111931328285	9209
030919808385BMCHZZCE	9804
03071427ABBMXX	9804
041622174849	9811
0307193882	9710
DT	0002
03DU	9902
0307192938	9902
DV	0302
03DU	9902
DV	0003
DT	0002
BQ	9804
BB	9809
86	0204
BQ	9804
BB	9809

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
				28	260	0040
1268	BREAKER,AIR CIRCUIT	FEDERAL PACIFIC		17	104	0010
1268	BREAKER,AIR CIRCUIT	FEDERAL PACIFIC		17	104	0010
1268	BREAKER,AIR CIRCUIT	FEDERAL PACIFIC		17	104	0010
1268	BREAKER,AIR CIRCUIT	FEDERAL PACIFIC		17	104	0010
1268	BREAKER,AIR CIRCUIT	FEDERAL PACIFIC		17	104	0010
1268	BREAKER,AIR CIRCUIT	FEDERAL PACIFIC		17	104	0010
1268	BREAKER,AIR CIRCUIT	FEDERAL PACIFIC		17	104	0010
1268	ENVIROMENTAL CONTROL UNIT	LIEBERT CORP.	FH302C-A00	30	026	0020
1268	ENVIROMENTAL CONTROL UNIT	LIEBERT CORP.	FH302C-A00	30	026	0020
1268	BACKFLOW PREVENTER	HERSEY	12	33	052	0005
1268	ENVIROMENTAL CONTROL UNIT	LIEBERT CORP.	FH302C-A00	30	026	0020
1268	ENVIROMENTAL CONTROL UNIT	LIEBERT CORP.	FH302C-A00	30	026	0020
1268	ENVIROMENTAL CONTROL UNIT	LIEBERT CORP.	FH302C-A00	30	026	0020
1268	BREAKER,AIR CIRCUIT	GENERAL ELECTRIC		17	104	0010
1268	SWITCH,AIR 4275	ISOLATOR ELE ENG		17	208	0020
1268	SWITCH,AIR 4276	ISOLATOR ELE ENG		17	208	0020
1268	SWITCH,AIR 4277	WESTINGHOUSE		17	208	0020
1268	SWITCH,AIR 4278	WESTINGHOUSE		17	208	0020
1268	SWITCH,AIR 4279	WESTINGHOUSE		17	208	0020
1268	SWITCH,AIR 4280	WESTINGHOUSE		17	208	0020
1268	ASPERATOR FULFLOW FILTER	FULFLOW		33	026	0005
1268	CHILL WATER PUMP	BELL GOSSETT	VSC11BFLHR	20	052	0020
1268	CHILL WATER PUMP	PEERLESS	PE11/2X2X10-S	20	052	0020
1268	CHILL WATER PUMP	WEIMAN	6AEB-6	20	052	0020
1268	CONTROL AIR COMPRESSOR	CURTIS	CV969A	20	052	0020
1268	ENVIROMENTAL CONTROL UNIT	LIEBERT CORP.	FH302C-A00	30	026	0020
1268	ENVIROMENTAL CONTROL UNIT	LIEBERT CORP.	FH302C-A00	30	026	0020
1268	ENVIROMENTAL CONTROL UNIT	LIEBERT CORP.	FH302C-A00	30	026	0020
1268	AIR HANDLER	DATA AIRE	DACD-1534	30	026	0020
1268	AIR HANDLER	DATA AIRE	DACD-1534	30	026	0020
1268	SPREADER BAR CAP. 350 LBS.			28	052	0005
				28	260	0020
1268	SPREADER-BAR CAP. 350 LBS.			28	260	0020
				28	052	0005
1268	MAN.HOIST CAP. 500 LBS.			28	052	0020
				28	260	0040
1268	MAN.HOIST CAP. 500 LBS.			28	052	0020

Instruction Code	Date Due
86	0204
07111931328285	9209
07111931328285	9209
07111931328285	9209
07111931328285	9209
07111931328285	9209
07111931328285	9209
07111931328285	9209
071119222782909193AB	9709
071119222782909193AB	9709
0711XXZZ	9808
071119222782909193AB	9709
071119222782909193AB	9709
071119222782909193AB	9709
07111931328285	9209
111526288285	9209
111526288285	9209
111526288285	9209
111526288285	9209
111526288285	9209
111526288285	9209
1720XX	9810
07118283ABBM	9803
07118283ABBM	9803
07118283ABBM	9803
0711192770719093	9803
071119222782909193AB	9709
071119222782909193AB	9709
071119222782909193AB	9709
071119222782909193AB	9709
071119222782909193AB	9709
0710AG	9804
86	0104
86	0104
0710AG	9804
071082	9804
86	0104
071082	9804

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
				28	260	0040
1268	MAN.HOIST CAP. 500 LBS.			28	052	0020
				28	260	0040
1268	ROL-LIFT PALLET JACK	ROL-LIFT		28	260	0020
1268	LIGHT,EMERGENCY,BATTERY	LIGHT ALARM		19	026	0002
1268	LIGHT,EMERGENCY,BATTERY	LIGHT ALARM		19	026	0002
1268	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268	LIGHT, EMERGENCY BATTERY			19	026	0003
1268	LIGHT, EMERGENCY BATTERY			19	026	0003
1268	LIGHT, EMERGENCY BATTERY			19	026	0003
1268	LIGHT,EMERGENCY,BATTERY	LIGHT ALARM		19	026	0002
1268	LIGHT,EMERGENCY,BATTERY	LIGHT ALARM		19	026	0002
1268	LIGHT,EMERGENCY,BATTERY	LIGHT ALARM		19	026	0002
1268	LIGHT,EMERGENCY,BATTERY	DUAL LIGHT		19	026	0003
1268	LIGHT,EMERGENCY,BATTERY	LIGHT ALARM		19	026	0002
1268	LIGHT,EMERGENCY,BATTERY	EXIDE		19	026	0002
1268	LIGHT,EMERGENCY,BATTERY	EXIDE		19	026	0002
1268	LIGHT,EMERGENCY,BATTERY			19	026	0002
1268	LIGHT,EMERGENCY,BATTERY			19	026	0002
1268	LIGHT,EMERGENCY,BATTERY	BEAM-A-MATIC		19	026	0002
1268	LIGHT,EMERGENCY,BATTERY	LIGHT ALARMS	3237 120VAC.	19	026	0002
1268	LIGHT,EMERGENCY,BATTERY	DUAL LIGHT	AS-63 120VAC	19	026	0010
1268	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268	LIGHT EMERGENCY BATTERY			19	026	0002
1268	LIGHT,EMERGENCY,BATTERY	BEAM-A-MATIC		19	026	0002
1268	LIGHT,EMERGENCY,BATTERY	BEAM-A-MATIC		19	026	0002
1268	LIGHT,EMERGENCY,BATTERY	BEAM-A-MATIC		19	026	0002
1268	LIGHT,EMERGENCY,BATTERY	EXIDE LIGHT GUARD	FSS	19	026	0002
1268	LIGHT, EMERGENCY BATTERY			19	026	0002
1268	LIGHT,EMERGENCY,BATTERY			19	026	0003
1268	LIGHT, EMERGENCY BATTERY			19	026	0003
1268	FIRE ALARM SYSTEM			67	026	0480
1268	FIRE ALARM SYSTEM	PYROTRONICS	PYR-A-LARM-120V	19	052	1200
1268	WET PIPE SPRINKLER SYSTEMS	STOCKHAM VALVE CO	MODEL 95-6"	33	004	0005

Instruction Code	Date Due
86	0104
071082	9804
86	0204
86	0111
0407114250	9805
0407114250	9805
0407114250	9805
0407114250	9805
0407114250	9805
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0407114250	9805
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0407114250XX	9805
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0407114250	9805
0407114250	9805
0407114250	9805
0407114250	9805
0407114250	9805
0407114250	9805
0407114250	9805
XX	9709
0311ASBNCSCTELEO	9803
030713ZZXXBNX1X2X3X4	9804

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
				33	052	0080
1268	SPRINKLER SYSTEMS (VALVES)	STOCKHAM VALVE CO	MODEL 95-6"	33	004	0020
1268	WATER FLOW DEVICES	POTTER & NOTIFIER	VSR-D 2 WFD-4 1	33	004	0080
1268	FIRE DEPARTMENT CONNECTIONS			33	004	0005
1268	RISER FLOW TEST			33	013	0040
1268	WET SYSTEM ALARM TESTING			33	013	0040
1268	STANDPIPE SYSTEMS			33	104	0080
				33	052	0080
1268	POST INDICATOR VALVE			33	013	0020
1268A	ENVIROMENTAL CONTROL UNIT	LIEBERT	CF060EC00	30	026	0020
1268A	SWITCH,AIR 4458	S-C		17	208	0020
1268A	DMS-HYD.POWER SUPPLY	SPERRY-VICKERS	PVB10	33	052	0020
				33	260	0010
				26	260	0010
				29	260	0015
				29	052	0040
1268A	DMS SIMULATOR-A	MCFADDEN SYSTEMS	392A	29	052	0015
1268A	DMS SIMULATOR-B	MCFADDEN SYS, INC	392A	29	052	0015
1268A	ELEVATOR TRACTION 10000 LBS	OTIS ELEV. CO		28	052	0040
				28	026	0020
				28	260	0070
1268A	VMS-HYD.POWER SUPPLY	RACINE HYDS.SYS.	PV65-613015	33	052	0020
				26	260	0010
				32	260	0010
				33	260	0020
				29	052	0040
1268A	VMS-VISUAL MOTION SIMULATOR	SINGER SIMULATION	6D0F	29	052	0080
1268A	VMS CO-PILOT CONTROL HPS	TEAM CORP	77102-B	33	260	0010
				26	260	0010
				32	260	0020
				29	052	0020
1268A	VMS-LIFT PLATFORM	COLSON CORP.	D135553	32	052	0040
				26	260	0010
				33	260	0010
1268A	VMS PILOT CONTROL HPS	MC FADDEN SYS.INC	6100	29	052	0020
1268A	VMS HYD.MANIFOLD	MCFADDEN SYS.INC	6200	29	052	0020
1268A	AIR SWITCH 4518	S&C		17	208	0020
1268A	CHILL WATER PUMP	WEINMAN	65-2	20	052	0020

Instruction Code	Date Due
1113AD03ZZZ1	9803
030713ZZXXBNX1X2X3X4	9804
030713ADZZXXX1X2X3X4BNCSCT	9804
071382XXX1X2X3X4	9804
030713X1XXBNCSCTX2X3	9806
030713ADZZBNCSCTXXX1X2	9806
030713XXBNX1X2X3X4	9709
030713XXBNX1X2X3	9803
030713X1XXBNX2X3	9806
071119222782909193AB	9709
111526288285	9209
03040719ABAP	9803
EX	0103
EE	0103
97	0303
0307ZZ737693ACADCCXX	9903
020304071993CC	9903
020304071993CC	9903
AXBQ	9902
BC	9804
86XX	0006
03040719ABAP	9803
EE	9910
97	9808
EX	9910
0307ZZ737693ACADCCXX	9903
020304071993CC	9903
EX	0203
EE	0203
97	9808
03040719737693AECC	9903
030407197393CCXX	9509
EE	9910
EX	9910
03040719739397AECCEEXX	9903
0304071993CCXXX1	9903
111526288285	9209
071182A3ABBM	9803

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1268A	CHILL WATER PUMP	WEINMAN	5L-2	20	052	0020
1268A	CHILL WATER PUMP	WEINMAN	5L-2	20	052	0020
1268A	HOT WATER PUMP	WEINMAN	4L-2	20	052	0020
1268A	HOT WATER PUMP	WEINMAN	4L-2	20	052	0020
1268A	AIR HANDLER #1	CARRIER	39AC12C979702-1	30	026	0050
1268A	AIR HANDLER #4	CARRIER		30	026	0040
1268A	AIR HANDLER #7	CARRIER	39BB140A10	30	026	0050
1268A	SWITCH,AIR 4366	S-C		17	208	0020
1268A	SWITCH,AIR 4367	S-C		17	208	0020
1268A	SWITCH,AIR 4368	S-C		17	208	0020
1268A	SWITCH,AIR 4369	S-C		17	208	0020
1268A	SWITCH,AIR 4370	S-C		17	208	0020
1268A	SWITCH,AIR 4371	S-C		17	208	0020
1268A	SWITCH,AIR 4372	S-C		17	208	0020
1268A	SWITCH,AIR 4373	S-C		17	208	0020
1268A	BREAKER,AIR CIRCUIT	ALLIS CHALMERS		17	104	0010
1268A	BREAKER,AIR CIRCUIT	ALLIS CHALMERS		17	104	0010
1268A	BREAKER,AIR CIRCUIT	ALLIS CHALMERS		17	104	0010
1268A	BREAKER,AIR CIRCUIT	ALLIS CHALMERS		17	104	0010
1268A	BREAKER,AIR CIRCUIT	ALLIS CHALMERS		17	104	0010
1268A	BREAKER,AIR CIRCUIT	ALLIS CHALMERS		17	104	0010
1268A	SOLFRUNT GAGE	SOLFRUNT		32	260	0010
1268A	GAUGE	HELICOID		32	260	0010
1268A	ACS-HYD.POWER SUPPLYS 2-EA.	MCFADDEN CO.CA.	6100	32	052	0080
				33	260	0020
				26	260	0010
				32	260	0010
1268A	ADVANCE CONCEPTS SIMULATOR	MCFADDEN	292A	32	052	0080
				30	026	0040
1268A	GA/TSRV-HYD.POWER SUPPLY	TEAM CORP.	77102-B	32	052	0040
				33	260	0020
				26	260	0010
				32	260	0010
1268A	HYD.MANIFOLD	TEAM CORP.	DML-1113	32	052	0020
1268A	ENVIROMENTAL CONTROL-UNIT	LIEBERT	FH422C-A00	30	026	0020
1268A	ENVIROMENTAL CONTROL-UNIT	LIEBERT	FH422C-A00	30	026	0020
1268A	ENVIROMENTAL CONTROL-UNIT	LIEBERT	FH422C-A00	30	026	0020
1268A	ENVIROMENTAL CONTROL-UNIT	LIEBERT	FHJ22C-A00	30	026	0020

Instruction Code	Date Due
07118283ABBM	9803
07118283ABBM	9803
07118283ABBM	9803
07118283ABBM	9803
0711192782909193AN	9709
0711192782909193AN	9709
0711192782909193AN	9709
111526288285	9209
111526288285	9209
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111526288285	9209
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07111931328285	9209
07111931328285	9209
07111931328285	9209
07111931328285	9209
07111931328285	9209
07111931328285	9209
BG16XX	9703
BG16XX	9703
03040719737693AEXXZZ	9510
EX	9910
EE	9910
97	9708
0304071993CCXX	9510
111982CDZZZ1	9709
03040719737693AEXX	9510
EX	9910
EE	9910
97	9708
0304071993CCXXZZ	9510
071119222782909193AB	9709
071119222782909193AB	9709
071119222782909193AB	9709
071119222782909193AB	9709

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1268A	ENVIROMENTAL CONTROL-UNIT	LIEBERT	FH422C-A00	30	026	0020
1268A	ENVIROMENTAL CONTROL UNIT	LIEBERT	FH422C-A00	30	026	0020
1268A	BACKFLOW PREVENTER	HERSEY	12	33	052	0005
1268A	BACKFLOW PREVENTER	HERSEY	12	33	052	0005
1268A	GAS HYD.POWER SUPPLY	DOUBLE-A	68-L-34892	33	052	0020
				33	260	0020
				26	260	0010
				29	260	0020
				29	052	0080
1268A	GA GEN. AVIATION SIMULATOR	SPERRY CONTRACT		29	052	0080
1268A	SWITCH,AIR 4460	S-C		17	208	0020
1268A	SWITCH,AIR 4456	S-C		17	208	0020
1268A	AIR HANDLER	TRANE	M-3	30	026	0050
1268A	AIR HANDLER	TRANE	M-3	30	026	0050
1268A	CONTROLLED ENVIROMENT #9	SUPREME-AIRE	DAC3535	30	026	0040
1268A	CONTROLLED ENVIROMENT #11	LIEBERT	FH422C-A00	30	026	0040
1268A	WATERCOOLER FILTER			33	052	0005
1268A	WATERCOOLER FILTER			33	052	0005
1268A	WATERCOOLER FILTER			33	052	0005
1268A	WATERCOOLER FILTER			33	052	0005
1268A	ENVIROMENTAL-CONTROL-UNIT	LIEBERT	FH422C-A00	30	026	0020
1268A	ENVIROMENTAL-CONTROL-UNIT	LIEBERT	FH422C-A00	30	026	0020
1268A	AIR-HANDLER-CHILL-WATER	MAGIC-AIR	180-BHW-6	30	026	0020
1268A	SWITCH,AIR 4525	ABB ASEA BB INC	VERSA-RUPTER	17	208	0020
1268A	BREAKER,AIR CIRCUIT	SEIMENS	RL800	17	104	0010
1268A	BREAKER,AIR CIRCUIT	SEIMENS	RL800	17	104	0010
1268A	BREAKER,AIR CIRCUIT	SEIMENS	RL1600	17	104	0010
1268A	BREAKER,AIR CIRCUIT	SEIMENS	RL800	17	104	0010
1268A	SPREADER BAR CAP.350 LBS.			28	260	0040
				28	052	0005
1268A	SPREADER BAR CAP. 350 LBS.			28	052	0005
				28	260	0020
1268A	SPREADER BAR CAP. 350 LBS.			28	260	0020
				28	052	0005
1268A	LIFTING RIG			28	260	0030
				31	260	0120
1268A	LIGHT,EMERGENCY,BATTERY	EXIDE	LSS 120/277VAC	19	026	0010
1268A	LIGHT,EMERGENCY,BATTERY			19	026	0002

Instruction Code	Date Due
07111922278290 9193AB	9709
07111922278290 9193AB	9709
0711XXZZ	9802
0711XXZZ	9802
03040719ABAP	9803
EX	9910
EE	9910
97	9303
0307ZZ737693ACADAEXX	9510
0304071993CC	9510
111526288285	9209
111526288285	9209
0711192782909193AN	9709
0711192782909193AN	9709
07111982909AN	9709
07111927829093AN	9709
1720XX	9810
1720XX	9810
1720XX	9810
1720XX	9810
1127758290939599ADAN	9709
1127758290939599ADAN	9709
0711192782909193AN	9709
111526288285	9709
07111931328285	9509
07111931328285	9509
11071931328285	9509
07111931328285	9509
86	0210
0710AG	9704
0710AG	9804
86	0104
86	0104
0710AG	9804
86	0106
XX	0106
0407114250XX	9805
0407114250	9805

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1268A	LIGHT,EMERGENCY,BATTERY	EXIDE	M 115VAC 6VDC	19	026	0010
1268A	LIGHT,EMERGENCY,BATTERY	DUAL LIGHT		19	026	0002
1268A	LIGHT,EMERGENCY,BATTERY			19	026	0003
1268A	LIGHT,EMERGENCY,BATTERY			19	026	0003
1268A	LIGHT,EMERGENCY,BATTERY	LIGHT ALARM		19	026	0002
1268A	LIGHT,EMERGENCY,BATTERY	DUAL LIGHT	AS-63	19	026	0040
1268A	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268A	LIGHT, EMERGENCY BATTERY			19	026	0003
1268A	LIGHT,EMERGENCY,BATTERY	DUAL LIGHT		19	026	0002
1268A	LIGHT,EMERGENCY,BATTERY	DUAL LIGHT		19	026	0002
1268A	LIGHT,EMERGENCY,BATTERY	DUAL LIGHT		19	026	0002
1268A	LIGHT,EMERGENCY,BATTERY	DUAL LIGHT		19	026	0002
1268A	LIGHT,EMERGENCY,BATTERY	DUAL LIGHT		19	026	0002
1268A	LIGHT,EMERGENCY,BATTERY	DUAL LIGHT		19	026	0002
1268A	LIGHT,EMERGENCY,BATTERY	DUAL LIGHT		19	026	0030
1268A	LIGHT, EMERGENCY BATTERY			19	026	0003
1268A	LIGHT,EMERGENCY,BATTERY	DUAL LIGHT	AS-63 120VAC	19	026	0010
1268A	LIGHT,EMERGENCY,BATTERY	DUAL-LITE	AS-63 120VAC	19	026	0030
1268A	LIGHT,EMERGENCY,BATTERY	CHLORIDE		19	026	0005
1268A	LIGHT,EMERGENCY,BATTERY	EXIDE		19	026	0002
1268A	LIGHT,EMERGENCY,BATTERY	EMERGI-LITE	LSM36-2-AVC	19	026	0003
1268A	LIGHT,EMERGENCY,BATTERY	DUAL LIGHT		19	026	0002
1268A	LIGHT, EMERGENCY, BATTERY			19	026	0002
1268A	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268A	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268A	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268A	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268A	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268A	LIGHT, EMERGENCY BATTERY			19	026	0003
1268A	LIGHT, EMERGENCY BATTERY			19	026	0003
1268A	LIGHT, EMERGENCY BATTERY			19	026	0003
1268A	LIGHT, EMERGENCY BATTERY			19	026	0003
1268A	LIGHT, EMERGENCY BATTERY			19	026	0003
1268A	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268A	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268A	LIGHT,EMERGENCY,BATTERY	DUAL LIGHT		19	026	0002
1268A	LIGHT,EMERGENCY,BATTERY	LIGHT ALARM		19	026	0002
1268A	LIGHT EMERGENCY BATTERY	DUAL LIGHT	NCS4760A3	19	026	0002

Instruction Code	Date Due
0407114250XX	9805
0407114250	9805
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0407114250XXZZ	9805
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0407114250	9805

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1268A	LIGHT EMERGENCY BATTERY	DUAL LIGHT	NCS4760A3	19	026	0002
1268A	LIGHT,EMERGENCY,BATTERY	EXIDE LIGHT GUARD	FSS	19	026	0003
1268A	LIGHT,EMERGENCY,BATTERY	EXIDE LIGHT GUARD	FSS	19	026	0002
1268A	LIGHT,EMERGENCY,BATTERY	EXIDE LIGHT GUARD	LSS	19	026	0002
1268A	LIGHT,EMERGENCY,BATTERY			19	026	0003
1268A	LIGHT,EMERGENCY,BATTERY			19	026	0003
1268A	EXIT EMERG. LIGHT, BATTERY			19	026	0003
1268A	LIGHT,EMERGENCY,BATTERY			19	026	0003
1268A	LIGHT,EMERGENCY,BATTERY	DUAL LIGHT		19	026	0002
1268A	LIGHT,EMERGENCY,BATTERY			19	026	0003
1268A	LIGHT, EMERGENCY BATTERY			19	026	0003
1268A	LIGHT, EMERGENCY BATTERY			19	026	0003
1268A	LIGHT, EMERGENCY BATTERY			19	026	0003
1268A	LIGHT, EMERGENCY BATTERY			19	026	0003
1268A	LIGHT, EMERGENCY BATTERY			19	026	0003
1268A	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268A	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268A	LIGHT, EMERGENCY BATTERY			19	026	0003
1268A	LIGHT, EMERGENCY BATTERY			19	026	0003
1268A	LIGHT, EMERGENCY BATTERY			19	026	0003
1268A	LIGHT, EMERGENCY BATTERY			19	026	0003
1268A	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268A	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268A	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268A	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268A	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268A	LIGHT, EMERGENCY BATTERY			19	026	0003
1268A	LIGHT, EMERGENCY BATTERY			19	026	0002
1268A	LIGHT, EMERGENCY BATTERY			19	026	0002
1268A	LIGHT, EMERGENCY BATTERY			19	026	0002
1268A	FIRE ALARM SYSTEM	PYROTRONICS	PYR-A-LARM-120V	19	052	1600
1268A	WET PIPE SPRINKLER SYSTEMS	STOCKHAM VALVE CO	MODEL 95-6"	33	004	0005
				33	052	0080
1268A	SPRINKLER SYSTEMS (VALVES)	STOCKHAM VALVE CO	MODEL 95-6"	33	004	0020
1268A	WATER FLOW DEVICES	POTTER & NOTIFIER	VSR-D 2 WFD-4 1	33	004	0080
1268A	FIRE DEPARTMENT CONNECTIONS			33	004	0005
1268A	STANDPIPE SYSTEMS			33	052	0080
				33	104	0080

Instruction Code	Date Due
0407114250	9805
0407114250	9805
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0407114250	9805
0407114250	9805
0311ASBNCSCTELEOXXZZ	9803
030713ZZXXBNX1X2X3X4	9804
1113AD03ZZZ1	9803
030713ZZXXBNX1X2X3X4	9804
030713ADZZXXX1X2X3X4BNCSCT	9804
071382XXX1X2X3X4	9804
030713XXBNX1X2X3	9803
030713XXBNX1X2X3X4	9709

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1268A	RISER FLOW TEST			33	013	0040
1268A	POST INDICATOR VALVE			33	013	0020
1268A	WET SYSTEM ALARM TESTING			33	013	0040
1268A	WET PIPE SPRINKLER SYSTEMS	RELIABLE MFG CO	MODEL-G	67	004	0005
1268A	SPRINKLER SYSTEMS (VALVES)	RELIABLE MFG CO.	MODEL"G" 2 1/2"	67	004	0020
1268A	WATER FLOW DEVICES	POTTER SECURITY	MODEL VSR-F	67	004	0040
1268A	FIRE DEPARTMENT CONNECTIONS			67	004	0005
1268A	RISER FLOW TEST	RELIABLE MFG CO	MODEL"G"2 1/2"	67	013	0040
1268A	POST INDICATOR VALVE	MUELLER MFG CO		67	013	0020
1268A	WET SYSTEM ALARM TESTING	POTTER SECURITY	MODEL VSR-F	67	013	0040
1268B	WATERCOOLER FILTER			33	052	0005
1268B	BACKFLOW PREVENTER	WATTS	900	33	052	0005
1268B	BACKFLOW PREVENTER	WATTS	900	33	052	0005
1268B	COND. WATER PUMP #1	ALLIS-CHALMERS	150	20	052	0020
				33	052	0005
1268B	COND.WATER PUMP #2	ALLIS-CHALMERS	150	20	052	0020
				33	052	0005
1268B	WATERCOOLER FILTER			33	052	0005
1268B	ABSORPTION MACHINE	TRANE	ABTD03J4L4BCJ8	30	104	0480
				30	052	0800
				30	260	0800
1268B	AIR HANDLER #1	AIRTHERM	M1420	30	026	0050
1268B	CONTROLLED ENVIROMENT #3	LIEBERT	FD4110	30	026	0040
1268B	CONTROLLED ENVIROMENT #6	LIEBERT	FD4110	30	026	0040
1268B	CONTROLLED ENVIROMENT #4	LIEBERT	FD4110	30	026	0040
1268B	CONTROLLED ENVIROMENT #11	LIEBERT	FD4110	30	026	0040
1268B	CONTROLLED ENVIROMENT #10	LIEBERT	FD4110	30	026	0040
1268B	CONTROLLED ENVIROMENT #7	LIEBERT	FD4110	30	026	0040
1268B	CONTROLLED ENVIROMENT #9	DATA AIRE	FD4110	30	026	0040
1268B	BACKGLOW PREVENTER	WATTS	900	33	052	0005
1268B	AIR-HANDLER	LIEBERT		30	026	0020
1268B	COND. WATER PUMP #3	ALLIS-CHALMERS		20	052	0020
				33	052	0010
1268B	ABSORPTION COLD GENERATOR	TRANE	ABTD03J4LC1D3E3	30	052	0800
				30	104	0480
				30	260	0800
1268B	LIGHT,EMERGENCY,BATTERY			19	026	0002
1268B	LIGHT,EMERGENCY,BATTERY	EMERG.LITE	BATTERY TYPE M2	19	026	0002

Instruction Code	Date Due
030713X1XXBNCSCTX2X3X4	9806
030713X1XXBNX2X3	9806
030713ADXXBNCSCTX1X2	9806
030713XXX1BNX2X3X4	9804
030713XXX1BNX2X3X4	9804
030713ADXXX1BNCSCTX2X3X4	9804
071382XXX1X2X3X4	9804
030713XXX1BNCSCTX2X3X4	9806
030713XXX1BNX2X3	9806
030713ADXXBNCSCTX1	9806
1720XX	9810
0711XXZZ	9802
0711XXZZ	9802
07088283ABBMXX	9803
93	9803
07088283ABBMXX	9803
93	9803
1720XX	9810
DT	9805
DY	9812
DWDXCU	0212
0711192782909193AN	9709
07111927829093AN	9709
071119829093AN	9709
07111927829093AN	9709
07111927829093AN	9709
07111927829093AN	9709
071119279093AN	9709
07111927829093AN	9709
0711XXZZ	9802
0711278290939599ADAN	9709
07088283ABBM	9803
93	9803
DY	9812
DT	9805
DWDXCU	0212
0407114250	9805
0407114250	9805

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1268B	LIGHT, EMERGENCY, BATTERY	EMERG.LITE	BATTERY TYPE M2	19	026	0002
1268B	LIGHT, EMERGENCY, BATTERY	EMERG.LITE	BATTERY TYPE M2	19	026	0002
1268B	LIGHT,EMERGENCY,BATTERY			19	026	0003
1268B	LIGHT, EMERGENCY, BATTERY	EMERG.LITE	BATTERY TYPE M2	19	026	0002
1268B	LIGHT, EMERGENCY, BATTERY	EMERG.LITE	BATTERY TYPE M2	19	026	0002
1268B	LIGHT, EMERGENCY, BATTERY	EMERG.LITE	BATTERY TYPE M2	19	026	0002
1268B	LIGHT, EMERGENCY, BATTERY	EMERG.LITE	BATTERY TYPE M2	19	026	0002
1268B	LIGHT, EMERGENCY, BATTERY	EMERG.LITE	BATTERY TYPE M2	19	026	0002
1268B	LIGHT, EMERGENCY BATTERY	EMERG.LITE	BATTERY TYPE M2	19	026	0002
1268B	LIGHT,EMERGENCY,BATTERY			19	026	0003
1268B	LIGHT, EMERGENCY BATTERY			19	026	0002
1268B	LIGHT,EMERGENCY,BATTERY			19	026	0003
1268B	LIGHT,EMERGENCY,BATTERY			19	026	0003
1268B	LIGHT,EMERGENCY,BATTERY			19	026	0003
1268B	LIGHT EMERGENCY BATTERY			19	026	0003
1268B	LIGHT,EMERGENCY,BATTERY			19	026	0003
1268B	LIGHT, EMERGENCY BATTERY			19	026	0003
1268B	F.A. SURVEY	PYROTRONICS	SYSTEM 3	19	052	0800
1268B	STANDPIPE SYSTEMS			33	052	0080
				33	104	0080
1268B	POST INDICATOR VALVE			33	013	0020
1268B	WET PIPE SPRINKLER SYSTEMS	GEM CORP.	MODEL F200-6"	33	004	0005
				33	052	0080
1268B	SPRINKLER SYSTEMS (VALVES)	GEM CORP.	MODEL F200-6"	33	004	0020
1268B	WATER FLOW DEVICES	POTTER & NOTIFIER	VSR-D 1 WFD-6 1	33	004	0080
1268B	FIRE DEPARTMENT CONNECTIONS			33	004	0005
1268B	RISER FLOW TEST			33	013	0040
1268B	WET SYSTEM ALARM TESTING			33	013	0040
1268C	PASSENGER HYDRAULIC ELEV	DOVER		28	260	0040
				28	052	0040
				28	026	0020
1268C	2.3KV AIR CIRCUIT BREAKER	WESTINGHOUSE	50-DHP-250	17	052	0160
1268C	AIR SWITCH 2136	S/C ELECTRIC CO.		17	208	0080
1268C	SWITCH,AIR 4485	ITE	VERSASWITCH	17	208	0020
1268C	SWITCH,4486	ITE	VERSASWITCH	17	208	0020
1268C	SWITCH,AIR 4484	ITE	VERSASWITCH	17	208	0020
1268C	TRANSFORMER 2DM2	STANDARD TRANS CO		17	104	0220
				17	052	0020

Instruction Code	Date Due
0407114250	9805
0407114250	9805
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0407114250	9805
0407114250	9805
0407114250	9805
0311ASBNCSCTELEOXXZZ	9803
030713XXBNX1X2X3	9803
030713XXBNX1X2X3X4	9709
030713X1XXBNX2X3	9806
030713ZZXXBNX1X2X3X4	9804
1113AD03ZZ	9803
030713ZZXXBNX1X2X3X4	9804
030713ADZZXXX1X2X3X4BNCSCT	9804
071382XXX1X2X3X4	9804
030713X1XXBNCSCTX2X3X4	9806
030713ADXXBNCSCTX1X2	9806
86	0001
97BQ	9701
BC	9804
07111982BDCL	9111
111526288285	9209
111526288285	9209
111526288285	9209
111526288285	9209
19BD	9209
7576	9807

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1268C	TRANSFORMER STA SER	TDC		17	104	0040
1268C	TRANSFORMER SUB A	STANDARD TRANS CO		17	104	0020
1268C	TRANSFORMER SUB B	STANDARD TRANS CO		17	104	0020
1268C	TRANSFORMER SUB C	STANDARD TRANS CO		17	104	0020
1268C	BREAKER AIR CIRCUIT	WESTINGHOUSE		17	052	0160
1268C	BREAKER AIR CIRCUIT	WESTINGHOUSE		17	052	0160
1268C	BREAKER AIR CIRCUIT	WESTINGHOUSE		17	052	0160
1268C	BREAKER,AIR CIRCUIT	WESTINGHOUSE		17	104	0010
1268C	BREAKER,AIR CIRCUIT	WESTINGHOUSE		17	104	0010
1268C	BREAKER,AIR CIRCUIT	WESTINGHOUSE		17	104	0010
1268C	WATER COOLER FILTER	CUNO	AP11T	33	052	0005
1268C	WATER COOLER FILTER	CUNO	AP11T	33	052	0005
1268C	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268C	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268C	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268C	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268C	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268C	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268C	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268C	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268C	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268C	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268C	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268C	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268C	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268C	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268C	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268C	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268C	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268C	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1268C	LIGHT, EMERGENCY BATTERY			19	026	0003
1268C	LIGHT, EMERGENCY BATTERY			19	026	0003
1268C	LIGHT, EMERGENCY BATTERY			19	026	0003
1268C	LIGHT, EMERGENCY BATTERY			19	026	0003
1268C	LIGHT, EMERGENCY BATTERY			19	026	0003
1268C	LIGHT, EMERGENCY BATTERY			19	026	0003
1268C	LIGHT, EMERGENCY BATTERY			19	026	0003
1268C	LIGHT, EMERGENCY BATTERY			19	026	0003

Instruction Code	Date Due
0407114250	9805
0407114250	9805
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0407114250	9805
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0407114250	9805
0407114250	9805
0407114250	9805
0407114250	9805
030713X1XXBNX2X3X4	9804
030713X1XXBNX2X3X4	9804
030713X1XXBNX2X3X4	9803
030713ADX1XXBNCSCTX2X3X4	9804
071382X1XXX283X4	9804
030713XXBNX1X2X3	9803
030713X1XXBNCSCTX2X3X4	9806

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
				67	052	0040
1268C	POST INDICATOR VALVE	KENNEDY MFG. CO.		67	013	0020
1268C	WET SYSTEM ALARM TESTING	POTTER SECURITY	MODEL-PS 10-2A	67	013	0020
				67	052	0040
1271	LIGHT,EMERGENCY,BATTERY	DUAL LIGHT		19	026	0002
1271	HOT WATER PUMP	BELL GOSSETT	4AB6-3/4BF	20	052	0010
1271	HOT WATER PUMP	BELL GOSSETT	4AB6-3/4BF	20	052	0010
1271	BOILER	YORK-SHIPLEY	SPWV-100-2	24	052	0400
1271	HOT WATER PUMP	BELL GOSSETT		20	052	0010
1271	AIR HANDLER	CARRIER	39BA070A1	30	052	0030
1271	CONDENSING UNIT	CARRIER	38BA00661	30	052	0020
1271	CONDENSING UNIT	CARRIER	38AB016650	30	052	0020
1271	AIR HANDLER	CARRIER		30	052	0030
1271	AIR COMPRESSOR			20	052	0005
1271	FIRE ALARM SYSTEM(PYRO.HG.V	PYROTRONICS	HIGH VOLTAGE	19	052	0180
				19	104	0180
1271	WET PIPE SPRINKLER SYSTEMS	HODGMAN MFG CO	MODEL B-4"	33	004	0005
				33	052	0040
1271	SPRINKLER SYSTEMS (VALVES)	HODGMAN MFG.CO.	MODEL B-4"	33	004	0020
1271	WATER FLOW DEVICES	UNITED ELECTRIC	MODEL 5835 J7X	33	004	0080
1271	FIRE DEPARTMENT CONNECTIONS			33	004	0005
1271	RISER FLOW TEST			33	013	0040
1271	POST INDICATOR VALVE			33	013	0020
1271	WET SYSTEM ALARM TESTING			33	013	0040
1283	SPREADER BAR CAP. 300 LBS.			28	052	0005
				28	260	0020
1283	MAN.HOIST CAP. 300 LBS.			28	052	0020
				28	260	0040
1283	LIGHT,EMERGENCY,BATTERY	DYNARY		19	026	0002
1283	LIGHT,EMERGENCY,BATTERY			19	026	0003
1283	LIGHT,EMERGENCY,BATTERY			19	026	0003
1283	LIGHT,EMERGENCY,BATTERY			19	026	0003
1283	LIGHT,EMERGENCY,BATTERY	EXIDE		19	026	0002
1283	LIGHT,EMERGENCY,BATTERY			19	026	0003
1283	LIGHT,EMERGENCY,BATTERY			19	026	0003
1283	LIGHT,EMERGENCY,BATTERY			19	026	0003
1283	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1283	WATER COOLER FILTER			33	052	0005

Instruction Code	Date Due
030713X1XXBNCSCTX2X3X4	9803
030713X1XXBNX2X3	9806
030713RDXXENCSCTX1X2	9806
030713ADXXBNCSCTX1X2	9803
0407114250	9805
07112782ABBM	9809
07112782ABBM	9809
131968XXZZ	9808
07112782ABBM	9809
0711192782909193AN	9808
07111927759599ADAN	9808
07111927759599ADAN	9808
0711192782909193AN	9808
0711277175	9809
031113ASBNXXCSCTELEO	9808
ZZ	9810
030713ZZXXBNX1X2X3X4	9804
1113AD03ZZZ1	9808
030713ZZXXBNX1X2X3X4	9804
030713ADZZXXX1X2X3X4BNCSCT	9804
071382XXX1X2X3X4	9804
030713BNCSCTXXX1X2X3X4	9806
030713BNXXX1X2X3	9806
030713ADBNCSCTXXX1X2	9806
0710AG	9902
86	0103
071082	9902
86	0103
0407114250XX	9805
0407114250	9805
0407114250	9805
0407114250	9805
0407114250XX	9805
0407114250	9805
0407114250	9805
0407114250	9805
0407114250	9805
1720	9810

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1283	CHILLER	MCQUAY	ALR084AD	30	052	0100
1283	WATER COOLER FILTER			33	052	0005
1283	AIR DRYER	HANKISON	8010	30	052	0010
1283	SAW,BAND (DO-ALL)	DOALL	1612-3	20	052	0020
1283	DRILL PRESS	CLEEREMAN		20	052	0010
1283	BORING MILL,HORZ	MEUSER	76BFS	20	052	0010
1283	DIMIL 3 AXIS VERTICAL	HILLYER	CNC 600	20	052	0020
				19	052	0040
1283	GRINDER,SURFACE	GALLMEYER & DIV.	280	20	052	0020
1283	MILLING MACH,VERT	KEARNEY & TRECKER	315TF-16	20	052	0010
1283	WATER COOLER FILTER			33	052	0005
1283	ICE MAKER FILTER			33	052	0005
1283	MILLING MACH,RAM (HORT/VERT	KEARNEY & TRECKER	307 S-12	20	052	0010
1283	LATHE	AMERICAN	20X72 M.D.	20	052	0040
				19	052	0040
1283	LATHE & MTR	PRATT WHITNEY		20	052	0010
1283	P&W BORING MACH & MTR	PRATT WHITNEY	2A	20	052	0010
1283	CONTROL AIR COMPRESSOR	HONEYWELL	UP210A1100	20	052	0020
1283	AIR HANDLER	MCQUAY	LSL108CV	30	052	0080
1283	LATHE, TOOLROOM	MONARCH MACH CO	EE	20	052	0010
				19	052	0015
1283	MILLING MACH AND MTR	TREE TOOL AND DIE	2UVR	20	052	0010
1283	LATHE AND MTR	MONARCH MACH	EE	20	052	0010
1283	AIR HANDLER	MCQUAY	R057088Y	30	052	0080
1283	MILLING MACH.	BRIDGEPORT		20	052	0010
1283	AIR HANDLER	MCQUAY	LML114D1	30	052	0080
1283	LATHE WOOD AND MTR	OLIVER		20	052	0010
1283	SANDER DRUM AND MTR	206323	34	20	052	0010
1283	DRILL PRESS RADIAL & MTR	ROCKWELL	15-120	20	052	0010
1283	LATHE WOOD AND MTR	OLIVER	2159	20	052	0010
1283	SANDER DISC AND MTR	PORTER CABLE		20	052	0010
1283	PUMP VACUUM AND MTR	WM WELCH CO	5KC42JG14E	20	052	0010
1283	PUMP VACUUM	WM WELCH		20	052	0005
1283	GRINDER TOOL	GORTON	375-4	20	052	0040
1283	HYDRAULIC BOOM LIFT PORT.	RUGER EQUIPMENT	50	28	052	0005
				28	260	0020
1283	GRINDER AND MTR	BALDOR EL CO		20	052	0010
1283	NC TURNING LATHE	LEBLOND	KNIGHT 20	20	052	0010

Instruction Code	Date Due
07111927759599ADAN	9902
1720XX	9810
0711192795AD	9902
73829093XX	9902
82XX	9902
8293	9902
638182739066	9902
030407192934	9902
6366829085XXZZ	9902
8290XX	9902
1720XX	9810
1720XX	9810
8290XX	9902
9087XX82	9902
07223428	9902
8290XX	9902
82XX	9902
70719093	9902
0711192782909193AN	9902
8290XX	9902
02082229	9902
8290XX	9902
8290XX	9902
0711192782909193AN	9902
8290XX	9902
0711192782909193AN	9902
82XX20	9902
82XX20	9902
82XX20	9902
82XX20	9902
82XX20	9902
070911131719XX79	9902
0708111317197982XX	9902
9082XX	9902
19738211	9902
86	0202
82XX	9902
82XX93	9902

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
				19	052	0020
1283	SHOP LIFT	ECONOMY ENGIN	MV60	20	052	0005
				20	260	0010
1283	WATER COOLER FILTER			33	052	0005
1283	PLANER, WOODWORKING			20	052	0010
1283	SANDER, SPINDLE			20	052	0010
1283	SURFACE ROUTER			20	052	0010
1283	JOINER, PRECISION			20	052	0010
1283	SAW,TABLE			20	052	0010
1283	BAND SAW (MARVEL)			20	052	0010
1283	VACUUM PUMP			20	052	0010
1283	DRILL PRESS & MOTOR (AVERY)	AVERY DRILLING CO	MA 6	20	052	0010
				19	052	0020
1283	BACKFLOW PREVENTER	WATTS 909		33	052	0005
1283	PALLET JACK	EQUIP.CO.OF.AMERI	L-180	28	052	0010
				28	260	0015
1283	BANDSAW (WOOD)	NORTHFEILD		20	052	0010
1283	DUST COLLECTOR SYSTEM	DONALDSON	64PJD-10	20	052	0020
1283	ELECTRICAL DISCHARGE MACH	ELOX		20	052	0010
1283	HORZ. MILLING MACHINE	BRIDGEPORT		20	052	0010
1283	JIG SAW (WOOD)	OLIVER		20	052	0010
1283	AIR HANDLER TYPE LZ-17	TRANE		30	052	0060
1283	AIR CIRCUIT BKR	G E		17	104	0010
1283	AIR CIRCUIT BKR	G E		17	104	0010
1283	AIR CIRCUIT BKR	G E		17	104	0010
1283	SWITCH,AIR 4392	GENERAL ELECTRIC		17	208	0020
1283	COLD WATER PIPE			19	052	0010
1283	SHOP LIFT			20	052	0003
				20	260	0020
1283	PAINT SPRAY BOOTH	BINKS		20	052	0020
1283	FIRE ALARM SYSTEM(PYRO.SYS3	PYROTRONICS	SYSTEM 3	19	104	0120
				19	052	0120
1283	WET PIPE SPRINKLER SYSTEMS	NIBCO USA	MOD.1 1/2 CHECK	33	004	0005
				33	052	0040
1283	SPRINKLER SYSTEMS (VALVES)	NIBCO-USA	MOD 1 1/2 GATE	33	004	0020
1283	WATER FLOW DEVICES	MCDONNELL-MILLER	FLOWSWITCH	33	004	0080
1283	STANDPIPE SYSTEMS			33	052	0080
1283	RISER FLOW TEST			33	013	0040

Instruction Code	Date Due
02030407192934	9902
0809118Z	9902
86	0202
1720	9810
829020	9902
8220	9902
02048290	9902
8220	9902
0282	9902
0282739093	9902
070811131719798293	9902
820204XX	9902
07132220	9902
0711XXX1	9712
1182	9902
86	0202
2082XX	9902
208290	9902
1982XX	9902
8290XX	9902
2082XX	9902
0711192782909193AN	9902
07111931328285	9608
07111931328285	9608
07111931328285	9608
111526288285	9808
041617224849	9810
198211	9902
86	0202
091020829093	9902
ZZ	9811
03040511ASBNCSCTELEOXXX1	9812
030713ZZXXBNX1X2X3X4	9804
031113ADZZZ1	9812
030713ZZXXBNX1X2X3X4	9804
030713ADZZXXX1X2X3X4BNCSCT	9804
030713BNXXX1X2X3	9812
030713BNCSCTXXX1X2X3X4	9806

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1283	POST INDICATOR VALVE			33	013	0020
1283	WET SYSTEM ALARM TESTING			33	013	0040
1283C	LIGHT EMERGENCY BATTERY	EXIDE	FSS	19	026	0002
1283C	LIGHT EMERGENCY BATTERY	EXIDE	FSS	19	026	0002
1284B	HYDRO PUMP FILTER	FULFLOW	BRX8 1	33	026	0005
1284B	REFRIGERATOR	KENMOORE	126 7966020	30	052	0010
1284B	H20 COOLER FILTER			33	052	0005
1284B	CONDENSING UNIT	TRANE	CA1008A	30	052	0020
1284B	AIR HANDLER	TRANE	SVA-1004A	30	052	0040
1284B	AIR COMPRESSOR	INGERSOLL RAND	10T2	20	052	0020
1284B	HYDRAULIC SHOPLIFT	CROWN CONTROLS	LT1000	20	052	0005
				20	260	0003
1284B	H1-PRESS GAGES(7)			26	260	0040
1284B	6000 PSI GN2 BOTTLE	APRD INC	ICC-3AA6000	32	260	0020
1284B	AIR HOIST 1 TON	INGERSOL RAND	C	28	052	0005
				28	260	0040
1284B	AIR HOIST 1 TON	INGERSOL RAND	C	28	052	0005
				28	260	0040
1284B	RELIEF VALVE	KUNKLE		26	260	0010
1284B	RELIEF VALVE	KUNKLE		26	260	0010
				32	260	0010
1284B	RELIEF VALVE	KUNKLE		26	260	0010
1284B	RELIEF VALVE	KUNKLE		26	260	0010
1284B	RELIEF VALVE	KUNKLE		26	260	0010
1284B	RELIEF VALVE	KUNKLE		26	260	0010
1284B	RELIEF VALVE	KUNKLE		26	260	0010
1284B	RELIEF VALVE	TELEDYNE		26	260	0010
1284B	RELIEF VALVE			33	260	0010
				26	260	0010
1284B	RELIEF VALVE	TELEDYNE		26	260	0010
1284B	RELIEF VALVE	KUNKLE		26	260	0010
1284B	RELIEF VALVE	TELEDYNE		26	260	0010
1285	HAND WINCH CAP 800 LBS	BEEBE BROS INC	BM3B	28	052	0010
				28	260	0020
1285	HAND WINCH CAP 800 LBS	BEEBE BROS INC	BM3B	28	052	0010
				28	260	0020
1285	EMERGENCY EYE WASH			19	052	0010
				33	026	0005

Instruction Code	Date Due
030713BNXXX1X2X3	9806
030713ADBNCSCTXXX1X2	9806
0407114250XX	9805
0407114250XX	9805
1720XX	9810
071195AN	9801
1720XX	9810
0711192782AB	9801
0711278290939599ADAN	9801
03071113198090	9802
19738211	9802
86	9902
16	0201
XX	9705
BB	9807
86	0108
BB	9807
86	0108
ETXX	0103
ETXX	0103
050797XXEA	0102
ETXX	0103
050797XXEAET	0103
050797XXEAET	0103
050797XXEAET	0103
050797XXEAET	0103
050797XXEAET	0103
0711EAESXX	0103
ETXX	0103
050797XXEAET	0103
050797XXEAET	0103
050797XXEAET	0103
07108288	9901
86	9902
07108288	9901
86	9902
041622	9810
0711CV	9810

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1285	LIFT-TRAILER MOUNT	PROMARK PRODUCTS	40PAL	28	052	0020
				28	260	0020
1286	HOT WATER PUMP	BELL GOSSETT		20	052	0010
1286	CONTROL AIR COMPRESSOR	JOHNSON SERVICE		20	052	0020
1286	AIR BRIDGE CRANE 1 TON	WRIGHT		28	260	0040
				28	052	0005
1286	A.C. WINDOW UNITS			30	052	0040
1286	EMERGENCY EYE WASH			33	026	0005
1286	ICE MACHINE	WHIRLPOOL		30	052	0020
1286	FIRE ALARM SYSTEM(EDWARDS)	EDWARDS CO	FA4	19	052	0040
1286	WET PIPE SPRINKLER SYSTEMS	GRINNEL MFG CO	MODEL G-4"	33	004	0005
				33	052	0040
1286	SPRINKLER SYSTEMS (VALVES)	GRINNEL MFG.CO.	MODEL G-4"	33	004	0020
1286	WATER FLOW DEVICES	POTTER-ELECTRIC	MODEL VSR-B	33	004	0080
1286	RISER FLOW TEST			33	013	0040
1286	POST INDICATOR VALVE			33	013	0020
1286	WET SYSTEM ALARM TESTING			33	013	0040
1289	PALLET JACK	ROL-LIFT		28	260	0010
1289	FIRE ALARM SYSTEM	PROTRONICS	HIGH VOLTAGE	19	052	0040
1289	DOMESTIC WATER VALVES 061			33	026	0005
1292	ROLL-UP DOOR, ELECTRIC	HOWELL-EVERITE		28	052	0010
1292	ROLL-UP DOOR, ELECTRIC	HOWELL-EVERITE		28	052	0010
1292	HOIST ELECT 1000 LB	YALE	1/2E10L12FPW2	28	260	0020
				28	052	0005
1292	CONDENSINGUNIT	TRANE	TTA120B400BC	30	052	0020
1292	HOIST ELECT 1000 LB	YALE LOAD KING	1/2E20L35RM/PH	28	260	0020
				28	052	0005
1292	AIRHANDLERUNIT	TRANE	TWE120B300BB	30	052	0040
1292	FIRE ALARM SYSTEM(EDWARDS)	EDWARDS CO INC	FA 9	19	052	0040
1292A	ROLL-UP DOOR, ELECTRIC	J G WILSON		28	052	0010
1294	LIGHT,EMERGENCY,BATTERY			19	026	0003
1294	HOT WATER PUMP	BELL & GOSSETT	P3-132-5-3	20	052	0005
1294	H2O COOLER FLT			33	052	0005
1294	NOTIFIER			19	052	0020
1296	REFRIGERATOR	TRAVLSON	RHT1-26WUT	30	052	0010
1296	WALK-IN-BOX,REFRIGERATION	BALLY	BF-300A-2	30	052	0010
1296	CONDENSING-UNIT	BALLY	PL-300-2	30	052	0020
1296	PACKAGE UNIT	YORK	DICE090A46C	30	052	0020

Instruction Code	Date Due
	9809
86	0210
07118283ABBM	9901
07111970719093	9901
86	0206
BB	9806
XX	9812
0711CV	9810
0711278295AN	9812
03040511ASBNCSCTELEOXX	9808
030713ZZXXBNX1X2X3X4	9804
1113AD03ZZZ1	9808
030713ZZXXBNX1X2X3X4	9804
030713ADZZXXX1X2X3X4BNCSCT	9804
030713BNCSCTXXX1X2X3X4	9806
030713BNXXX1X2X3	9806
030713ADBNCSCTXXX1X2	9806
86	0111
03040511ASBNCSCTELEOXX	9809
EVEW	9809
0709112782AV	9902
0709112782AV	9902
86	0202
BB	9808
0711192782AB	9901
86	0202
BB	9808
0711278290939599ADANXX	9901
03040511ASBNCSCTELEOXX	9809
0709112782AV	9902
0407114250	9805
07118283ABBM	8611
1720XX	9810
031113ASBNXXZZCSCTEL	9804
071195AN	9704
07119519AN	9704
07111995AN	9704
11278290939599ADAN	9704

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1296	UNIT COOLER	BALLY	BF-300-A-3	30	052	0020
1296	CONDENSING UNIT	BALLY	PL-300-3	30	052	0020
1296	HTR UNIT AND MTR	TRANE	76H	20	052	0005
1296	STEAM TRAP 125 PSI	ARMSTRONG 3/4	CD62A	33	052	0005
1296	STEAM TRAP	HOFFMAN 3/4		33	052	0005
1296	STEAM TRAP	HOFFMAN 3/4		33	052	0005
1296	STEAM TRAP	HOFFMAN 3/4		33	052	0005
1296	STEAM TRAP	HOFFMAN 3/4		33	052	0005
1296	STEAM TRAP	TRANE 3/4		33	052	0005
1296	STEAM TRAP	ANDERSON 1"		33	052	0005
1296	STEAM TRAP	BUDDY 3/4		33	052	0005
1296	STEAM TRAP	ANDERSON 1 1/2		33	052	0005
1296	STEAM TRAP	STERLING 1		33	052	0005
1296	STEAM TRAP	TRANE 3/4		33	052	0005
1296	STEAM TRAP	ANDERSON 1		33	052	0005
1296	PACKAGE UNIT	YORK	PF-36-25A	30	052	0080
1296	ROLL-UP DOOR, MANUAL			28	052	0005
1296	LIGHT,EMERGENCY,BATTERY	LINK BOY		19	026	0003
1296	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1296	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1296	LIGHT,EMERGENCY BATTERY			19	026	0002
1296	LIGHT,EMERGENCY,BATTERY			19	026	0003
1296	LIGHT,EMERGENCY,BATTERY			19	026	0003
1296	FIRE ALARM SYSTEM	PYROTRONICS	FA4	67	104	0040
				67	052	0040
1296	WET PIPE SPRINKLER SYSTEMS	GEM MFG CO	MODEL F2001	67	004	0005
1296	WATER FLOW DEVICES	NOTIFIER MFG. CO	MODEL WPS 10-2	67	004	0080
1296	RISER FLOW TEST	GEM MFG CO	MODEL F2001	67	013	0040
1296	POST INDICATOR VALVE	MUELLER MFG. CO.	P.I.V.	67	013	0020
1296	WET SYSTEM ALARM TESTING	NOTIFIER MFG CO.	MODEL WPS-10-2	67	013	0040
1296	DOMESTIC WATER VALVES 374			33	026	0005
1296	DOMESTIC WATER VALVES 377			33	026	0005
1296	DOMESTIC WATER VALVES 378			33	026	0005
1298	SUMP PUMP			20	052	0005
1298	SUMP PUMP			20	052	0005
1298	AIR SWITCH 4333	ITE		17	208	0020
1298	RETURN AIR FAN	CARRIER CORP.	SIZE 27CB-7	30	052	0030
1298	HOT WATER PUMP	CHICAGO PUMP CO.	74-02	20	052	0020

Instruction Code	Date Due
07111995AN	9704
11278293AD95AN	9704
111382	9804
0711XX	9804
0711XX	9804
0711XX	9804
0711XX	9804
0711XX	9804
0711XX	9804
0711XX	9804
0711XX	9804
0711XX	9804
0711XX	9804
0711XX	9804
0711XX	9804
0711278290939599ADAN	9704
07091182AV	9804
0407114250XX	9806
0407114250	9806
0407114250	9806
0407114250XX	9806
0407114250	9806
0407114250	9806
ZZ	9811
0311ASBNCSCTELEOXXX1	9809
030713XXX1X2X3X4BNZZ	9804
030713ADBNCSCTXXX1X2X3X4	9804
030713BNCSCTXXX1X2X3X4	9806
030713BNXXX1X2X3	9806
030713ADBNCSCTXXX1X2	9806
EVEW	9809
EVEW	9809
EVEW	9809
07111982AB	9810
07111982AB	9810
111526288285	9811
07111927829091	9808
07118283ABBM	9810

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1298	HOT WATER PUMP	CHICAGO PUMP CO.	74-02	20	052	0020
1298	CHILL WATER PUMP	CHICAGO PUMP CO.	74-02	20	052	0020
1298	AIR HANDLER, ZONE #1	CARRIER CORP.	39AC12097970-1	30	052	0040
1298	AIR HANDLER, ZONE #2	CARRIER CORP.	39AC5051VBF4	30	052	0005
				30	017	0005
1298	AIR HANDLER #3	CARRIER CORP.	39AC6051THR7	30	052	0005
				30	017	0005
1298	AIR HANDLER #4	CARRIER CORP.	39AC5	30	052	0005
				30	017	0005
1298	BREAKER AIR CIRCUIT	I T E		17	104	0010
1298	BREAKER AIR CIRCUIT	I T E		17	104	0010
1298	BREAKER AIR CIRCUIT	I T E		17	104	0010
1298	BREAKER AIR CIRCUIT	I T E		17	104	0010
1298	BREAKER AIR CIRCUIT	I T E		17	104	0010
1298	REFRIGERATOR	HOTPOINT	1CTF114G2	30	052	0010
1298	BREAKER AIR CIRCUIT	I T E		17	104	0010
1298	WATER COOLER FILTER			33	052	0005
1298	WATER COOLER FILTER			33	052	0005
1298	BREAKER AIR CIRCUIT	I T E	01	17	104	0010
1298	RE-HEAT UNIT (CEILING)	CARRIER CORP.	37FA110	30	052	0010
1298	RE-HEAT UNIT (CEILING)	CARRIER CORP.	37FA110	30	052	0010
1298	RE-HEAT UNIT (CEILING)	CARRIER CORP.	37FA110	30	052	0010
1298	RE-HEAT UNIT (CEILING)	CARRIER CORP.	37FA110	30	052	0010
1298	RE-HEAT UNIT (CEILING)	CARRIER CORP.	37FA110	30	052	0010
1298	RE-HEAT UNTI (CEILING)	CARRIER CORP.	37FA110	30	052	0010
1298	RE-HEAT UNIT (CEILING)	CARRIER CORP.	37FA110	30	052	0010
1298	RE-HEAT UNIT (CEILING)	CARRIER CORP.	37FA110	30	052	0010
1298	RE-HEAT UNIT (CEILING)	CARRIER CORP.	37FA110	30	052	0010
1298	RE-HEAT UNIT (WALL MOUNT)	CARRIER CORP.	36BA04	30	052	0010
1298	RE-HEAT UNIT (WALL MOUNT)	CARRIER CORP.	36BA02	30	052	0010
1298	RE-HEAT UNIT (WALL MOUNT)	CARRIER CORP.	36BA04	30	052	0010
1298	RE-HEAT UNIT (WALL MOUNT)	CARRIER CORP.	36BA04	30	052	0010
1298	RE-HEAT UNIT (WALL MOUNT)	CARRIER CORP.	36BA04	30	052	0010
1298	RE-HEAT UNIT (WALL MOUNT)	CARRIER CORP.	36BA04	30	052	0010
1298	RE-HEAT UNIT (WALL MOUNT)	CARRIER CORP.	36BA06	30	052	0010
1298	RE-HEAT UNIT (WALL MOUNT)	CARRIER CORP.	36BA04	30	052	0010
1298	RE-HEAT UNIT (WALL MOUNT)	CARRIER CORP.	36BA06	30	052	0010
1298	RE-HEAT UNIT (WALL MOUNT)	CARRIER CORP.	36BA04	30	052	0010

Instruction Code	Date Due
07118283ABBM	9810
07118283ABBM	9810
0711192782909193AN	9808
ZZZ1	9808
XXX1X2X3X4	9712
ZZZ1	9808
XXX1X2X3X4	9712
ZZZ1	9808
XXX1X2X3X4	9712
07111931328285	9611
07111931328285	9611
07111931328285	9611
07111931328285	9611
07111931328285	9611
071195AN	9808
07111931328285	9611
1720	9810
1720	9810
07111931328285	9611
07CD	9808
07CD	9808
07CD	9808
0CD	9808
0CD	9808
07CD	9808
07CD	9808
07CD	9808
07CD	9808
07CD	9808
07CD	9808
07CD	9808
07CD	9808
07CD	9808
07CD	9808
07CD	9808
07CD	9808
07CD	9808
07CD	9808

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1298	RE-HEAT UNIT (WALL MOUNT)	CARRIER CORP.	36BA04	30	052	0010
1298	RE-HEAT UNIT (WALL MOUNT)	CARRIER CORP.	36BA04	30	052	0010
1298	RE-HEAT UNIT (WALL MOUNT)	CARRIER CORP.	36BA04	30	052	0010
1298	RE-HEAT UNIT (WALL MOUNT)	CARRIER CORP.	36BA04	30	052	0010
1298	RE-HEAT UNIT(WALL MOUNT)	CARRIER CORP.	36BA04	30	052	0010
1298	RE-HEAT UNIT (WALL MOUNT)	CARRIER CORP.	36BA04	30	052	0010
1298	RE-HEAT UNIT (WALL MOUNT)	CARRIER CORP.	36BA04	30	052	0010
1298	RE-HEAT UNIT (WALL MOUNT)	CARRIER CORP.	36BA04	30	052	0010
1298	RE-HEAT UNIT (WALL MOUNT)	CARRIER CORP.	36BA04	30	052	0010
1298	RE-HEAT UNIT (WALL MOUNT)	CARRIER CORP.	36BA04	30	052	0010
1298	RE-HEAT UNIT (WALL MOUNT)	CARRIER CORP.	36BA04	30	052	0010
1298	RE-HEAT UNIT (WALL MOUNT)	CARRIER CORP.	36BA04	30	052	0010
1298	RE-HEAT UNIT (WALL MOUNT)	CARRIER CORP.	36BA04	30	052	0010
1298	RE-HEAT UNIT (WALL MOUNT)	CARRIER CORP.	36BA04	30	052	0010
1298	RE-HEAT UNIT (WALL MOUNT)	CARRIER CORP.	36BA04	30	052	0010
1298	RE-HEAT UNIT (WALL MOUNT)	CARRIER CORP.	36BA04	30	052	0010
1298	RE-HEAT UNIT (WALL MOUNT)	CARRIER CORP.	36BA04	30	052	0010
1298	RE-HEAT UNIT (WALL MOUNT)	CARRIER CORP.	36BA04	30	052	0010
1298	RE-HEAT UNIT (WALL MOUNT)	CARRIER CORP.	36BA04	30	052	0010
1298	RE-HEAT UNIT (WALL MOUNT)	CARRIER CORP.	36BA04	30	052	0010
1298	RE-HEAT UNIT (WALL MOUNT)	CARRIER CORP.	36BA04	30	052	0010
1298	RE-HEAT UNIT (WALL MOUNT)	CARRIER CORP.	36BA04	30	052	0010
1298	RE-HEAT UNIT (WALL MOUNT)	CARRIER CORP.	36BA04	30	052	0010
1298	STEAM TRAP	HOFFMAN 3/4		33	052	0005
1298	STEAM TRAP	HOFFMAN 3/4		33	052	0005
1298	BACKFLOW PREVENTER	WATTS	900	33	052	0005
1298	SUMP PUMP			19	052	0005
1298	PACKAGE UNIT	CARRIER	50CZ008610DA	30	052	0030
1298	AIR HANDLER	LIEBERT	CU64A	30	052	0030
1298	AIR COOLED CONDENSER	LIEBERT	D0450	30	052	0010
1298	AIR COOLED CONDENSER	LIEBERT	D0440	30	052	0010
1298	AIR HANDLER	LIEBERT	FD75A	30	052	0030
1298	AIR SWITCH 4332	ITE		17	208	0020
1298	PACKAGE UNIT	CARRIER	50EE018330	30	052	0020
1298	PACKAGE A/C	ZONEAIRE	VAC-360-2-15	30	052	0010
1298	PACKAGE A/C	ZONEAIRE	VAC-360-2-15	30	052	0010
1298	MAN.CRANE MONORAIL 1 TON	YALE	BB	28	052	0020
				28	260	0040

Instruction Code	Date Due
07CD	9808
07CD	9808
07CD	9808
07CD	9808
07CD	9808
07CD	9808
07CD	9808
07CD	9808
07CD	9808
07CD	9808
07CD	9808
07CD	9808
07CD	9808
07CD	9808
07CD	9808
07CD	9808
07CD	9808
07CD	9808
07CD	9808
07CD	9808
07CD	9808
07CD	9808
07CD	9808
0711XX	9804
0711XX	9804
0711XXZZ	9801
07111327	9810
071119278290919399AN	9808
0711192790939599ADAN	9808
0711192795ADAN	9808
0711192795ADAN	9808
071119277590939599AN	9808
111526288285	9811
0711278290919399AN	9808
0711278290919399AN	9808
0711278290919399AN	9808
BB	9810
86	0010

Bldg. No.	Description	Manufacturer Name	Model Number	Craft	Freq.	Est. Hrs. In Tenths
1298	LIGHT,EMERGENCY,BATTERY	BIG BEAM		19	026	0002
1298	LIGHT,EMERGENCY,BATTERY	BIG BEAM		19	026	0002
1298	LIGHT,EMERGENCY,BATTERY	DUAL LIGHT		19	026	0002
1298	LIGHT,EMERGENCY,BATTERY	EXIDE LIGHT GUARD	FSS	19	026	0002
1298	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1298	EXIT EMERG. LIGHT, BATTERY			19	026	0002
1298	LIGHT, EMERGENCY, BATTERY			19	026	0002
1298	LIGHT,EMERGENCY,BATTERY			19	026	0003
1298	LIGHT,EMERGENCY,BATTERY			19	026	0003
1298	FIRE ALARM PANEL(PYRO.SYS.3	PYROTRONICS	SYSTEM 3	19	104	0240
				19	052	0240
1298	WET PIPE SPRINKLER SYSTEMS	FIREMATIC MFG.	MODEL-G-4"	33	004	0005
				33	052	0150
1298	SPRINKLER SYSTEMS (VALVES)	FIREMATIC MFG.	MODEL-G-4"	33	004	0020
1298	WATER FLOW DEVICES	NOTIFIER CO.	MODEL WFD-3	33	004	0080
1298	FIRE DEPARTMENT CONNECTIONS			33	004	0005
1298	RISER FLOW TEST			33	013	0040
1298	POST INDICATOR VALVE			33	013	0020
1298	WET SYSTEM ALARM TESTING			33	013	0040

Instruction Code	Date Due
0407114250XX	9806
0407114250XX	9806
0407114250XX	9806
0407114250XX	9806
0407114250	9806
0407114250	9806
0407114250	9806
0407114250	9806
0407114250	9806
ZZ	9812
03040511ASBNCSCTELEOXXX1	9901
030713ZZXXBNX1X2X3X4	9804
1113AD03ZZZ1	9812
030713ZZXXBNX1X2X3X4	9804
030713ADZZXXX1X2X3X4BNCSCT	9804
071382XXX1X2X3X4	9804
030713BNCSCTXXX1X2X3X4	9806
030713BNXXX1X2X3	9806
030713ADBNCSCTXXX1X2	9806

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

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2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. *(If applicable)*
3	MAR 02 1999	GL.2166	

6. ISSUED BY	CODE	7. ADMINISTERED BY *(If other than Item 6)*	CODE
National Aeronautics and Space Administration Langley Research Center Hampton, VA 23681-2199			

8. NAME AND ADDRESS OF CONTRACTOR *(No. Street, County, State and ZIP: Code)*	(✓)	9A. AMENDMENT OF SOLICITATION NO
TO ALL CONCERNED	X	1-135-GL.2166 Final RFP
		9B. DATED *(SEE ITEM 11)* February 10, 1999
		10A. MODIFICATION OF CONTRACT/ORDER NO.
		10B. DATED *(SEE ITEM 13)*
CODE / FACILITY CODE		

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☒ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☒ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning one (1) copy of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATA SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and data specified.

12. ACCOUNTING AND APPROPRIATION DATA *(If required)*

N/A

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

(✓)	
	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: *(Specify authority)* THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES *(such as changes in paying office, appropriation date, etc.)* SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER Specify type of modification and authority)

E. **IMPORTANT:** Contractor ☐ is not, ☐ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

SUBJECT: NASA Final Request for Proposal 1-135-GC.2166 Facilities and Equipment Support Service (FESS) contract

The purposes of this amendment are to (1) make a revision to the RFP; and (2) provide answers to questions.

(continued)

Except at provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER *(Type or print)*		16A. NAME AND TITLE OF CONTRACTING OFFICER *(Type or print)*	
		SANDRA S. RAY	
15B. CONTRACTOR/OFFEROR *(Signature of person authorized to sign)*	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY *(Signature of Contracting Officer)*	16C. DATE SIGNED 3/2/99

I. Section H is revised to incorporate the following clause to address the application of bid bonds and performance and payment bonds to construction work under the contract.

"H.18 - Construction -- Bid Bonds and Performance and Payment Bonds

For Government selected WSRs issued for construction, the Contractor agrees to obtain performance and payment bonds or alternative payment protection. For the purposes of the Section I clauses 52.228-15, Performance and Payment Bonds – Construction (SEP 1996), 52.228-13, Alternative Payment Protections, and 52.228-2, Additional Bond Security (OCT 1997), the "contract price" shall be deemed to refer to the price of the WSR issued. The Contractor may include in pricing proposals in response to selected construction IQ work the price of performance and payment bonds or alternative payment protection as a separate expense."

II. Section I.3, Clauses Applicable to Construction Work, is revised to delete the following clauses:

"52.228-1 Bid Guarantee (SEP 1996) Paragraph (c) insert "20%" and "$3,000,000".
18-52.228-73 Bid Bond (OCT 1988)"

III. Section I.3, Clauses Applicable to Construction Work, is revised to incorporate the following clause:

"52.228-13 Alternative Payment Protections (Oct 1997)

(a) The Contractor shall submit one of the following payment protections:

___ a payment bond.

___ an irrevocable letter of credit (ILC).

(b) The amount of the payment protection shall be 50 percent of the contract price.

(c) The submission of the payment protection is required within 10 days of contract award.

(d) The payment protection shall provide protection for the full contract performance period plus a one-year period.

(e) Except for escrow agreements and payment bonds, which provide their own protection procedures, the Contracting Officer is authorized to access funds under the payment protection when it has been alleged in writing by a supplier of labor or material that a nonpayment has occurred, and to withhold such funds pending resolution by administrative or judicial proceedings or mutual agreement of the parties.

(f) When a tripartite escrow agreement is used, the Contractor shall utilize only suppliers of labor and material that signed the escrow agreement."

IV. Questions and Answers:

1. Page 183 of the subject Solicitation defined in Section I-3 "Clauses applicable to construction work". We find no construction work per se defined in the SOW. We do understand that construction work may be directed to the awarded FESS contractor via future IDIQ requests, which are beyond the current definition of the SOW. In view of this situation, why is the Government requesting bid bond/guarantee in the amount of $3 million or 20% of the contract value (whichever is smaller) relative to construction work which is not yet specified in the statement of work?

Answer:

As stated in Amendment 1 to the Draft RFP (Question 28.), construction will be IQ work. Although construction work is not in the firm-fixed price portion of the contract, construction work is within the current definition of the SOW. Tasks in many of the Section C sections can qualify as construction if over $2K and it meets the FAR definition of construction. The contract has been modified (See I. above) to clarify that performance and payment bonds will be required for Government selected WSRs issued for construction IQ work. The requirement for bid bonds has been waived per FAR 28.101 and therefore deleted from the contract per II. above.

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

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2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. *(If applicable)*
4	March 16, 1999	GI.2166	

6. ISSUED BY	CODE	7. ADMINISTERED BY *(If other than Item 6)*	CODE
National Aeronautics and Space Administration Langley Research Center Hampton, VA 23681-2199			

8. NAME AND ADDRESS OF CONTRACTOR *(No. Street, County, State and ZIP: Code)*	(✓)	9A. AMENDMENT OF SOLICITATION NO
TO ALL CONCERNED	X	1-135-GI.2166 Final RFP
		9B. DATED *(SEE ITEM 11)* February 10, 1999
		10A. MODIFICATION OF CONTRACT/ORDER NO.
		10B. DATED *(SEE ITEM 13)*
CODE / FACILITY CODE		

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☒ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☒ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning one (1) copy of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATA SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and data specified.

12. ACCOUNTING AND APPROPRIATION DATA *(If required)*

N/A

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

(✓)	
	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: *(Specify authority)* THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES *(such as changes in paying office, appropriation date, etc.)* SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER Specify type of modification and authority)

E. **IMPORTANT:** Contractor ☐ is not, ☐ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

SUBJECT: NASA Final Request for Proposal 1-135-GC.2166 Facilities and Equipment Support Service (FESS) contract

The purpose of this amendment is to provide answers to questions.

(continued)

Except at provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER *(Type or print)*		16A. NAME AND TITLE OF CONTRACTING OFFICER *(Type or print)*	
		SANDRA S. RAY	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
(Signature of person authorized to sign)		BY *(Signature of Contracting Officer)*	3-16-99

1. Reference: Attachment J-C9-x Preventive Maintenance Program. Is the historical or projected cost for materials\parts associated with the PM work included in the solicitation or one of its attachments? If yes, where is it located? If no, please provide this critical information. Since High Voltage Electrical has previously been performed by Civil Service Personnel, are the High Voltage PM tasks included in the Preventive Maintenance Technical Exhibits? If not, please provide material\parts information.

Answer: The projected cost for materials\parts associated with the PM work is not included in the solicitation. As provided under Amendment 1 Question 23 to the Draft RFP, the labor hours and material used in performance of PM for calendar year 1997 are as follows:

Total labor hours expended in performance of PM work during 1997 equals 49,696.
Total material costs incurred in performance of PM work during 1997 equals $195,218.

Your are correct, High Voltage Electrical work was previously performed by Civil Servants and is included in SOW Section C.23, High and Low Voltage Electrical Distributions Systems Maintenance and Repair, and Attachment J-C9, Preventive Maintenance Program. The Government has estimated costs for material and parts associated with PM work in the area of High Voltage Electrical at $5,000/year.

2. Reference: SOW Section C.24.b.(2), Operator Maintenance of the Central Steam Plant Equipment and Systems. Please provide historical or projected man-hours and material\parts to perform Operator Maintenance of the Central Steam Plant Equipment and Systems.

Answer: There is no historical data which indicates the amount of time currently spent by Steam Plant Operators performing operator maintenance tasks. The Government has estimated costs for material and parts associated with Steam Plant Operator Maintenance at $10,000/year.

3. Reference: Attachment J-C8-11A, Summary of Trouble Call Historical Data. Table #4 is footnoted as not including the material cost associated with high voltage electric, and crane and elevator trouble calls. Please provide this critical data.

Answer: The Government has estimated costs for material and parts associated with High Voltage Electrical Trouble Calls at $5,000/year. The Government has estimated costs for material and parts associated with Crane and Elevator Trouble Calls at $10,000/year.

4. Reference: Attachment J-C9-12B and the PM Technical Exhibits.

a. The PM Technical Exhibits identifies the following Craft Codes that are not included in Attachment J-C9-12B: Craft Code 12 (Zone 6), Craft Code 14 (Zone 5), Craft Code 21 (Zone 5) and Craft Code 36 (Zone 3). Please provide a description for these craft codes.

b. Please clarify the descriptors for the following Craft Codes (Attachment J-C9-12B):

Code 23 and Code 33 are both Pipefitting. Please clarify the difference between the two.
Code 56 is 1236 – Ops Maint. Please clarify as the type of crafts\skills required.
Code 68 is 1236 – Research Maint. Please clarify as to the crafts\skills required.

Answer:
a. Crafts 12, 14, 21 and 36 were inadvertently identified in the Preventive Maintenance Program Attachment. These codes are not applicable to the FESS requirement and should not be considered in your offer.

b. Craft 23 were previously Civil Service pipefitter's preventive maintenance work but are now part of FESS contractor responsibilities. Craft 33 is FESS contract pipefitters. Craft 56 is for preventive maintenance performed at the NTF tunnel that is part of the FESS contractor responsibility. Craft 68 is for other non-FESS Contract Facility Operator personnel at the NTF tunnel. Craft 68 was inadvertently identified in J-C9-12B and should not be considered in your offer.

5. Reference: SOW Section C.18, Rigging and Hauling Services. The trouble call work man-hours are identified in Attachment J-C8-11A. The introduction to the PM Program Technical Exhibits identify 1,000 hours per year as the rigging support required to support the PM Program. Other than the requirement for the Operation Procedures Plan, will all other work to be performed fall under the Non-recurring work umbrella?

Answer: Yes, all other Rigging work will be considered Non-Recurring work.

6. Reference: Exhibit E Collective Bargaining Agreements (CBA). Will the incumbent contractor(s) be required to pay employees for their unused vacation (annual) leave and sick leave at the end of the current contract? Please clarify. Will the successful offeror on this solicitation be required to pay employees for their unused vacation (annual) leave and sick leave at the end of the contract or will that financial responsibility be deferred to the next contractor?

The incumbent contractor(s) will pay employees for their unused vacation (annual) leave and sick leave at the end of the current contract. Accumulated sick leave is not transferred forward under either of the CBAs. See Code of Federal Regulations 29 Subtitle A (7-1-98 Edition), Section 4.173 (d), Contractor Liability for Vacation Benefits for additional information. Any renegotiations of the CBAs could impact terms regarding sick leave and vacation leave. However, offerors should not assume that liability for unused vacation and sick leave can be deferred to the next contractor.

7. Reference Section M.3.B of the RFP, which states that "An analysis of the proposed price for the basic and option periods will be conducted to determine their price reasonableness and cost realism. The prices proposed on the RFP Bid Schedules will be used in this evaluation." Since the Phase-In Period is included in the Base Period of the contract, the incumbent will have a price advantage over the other bidders. Is this the Government's intention?

Answer: Any phase-in costs which the offeror proposes to charge to the Government will be a real cost to the Government of doing business and therefore will be included in the base period. This contract is a greatly different contract than the existing one (e.g., it is fixed price vs. the current cost-reimbursement level of effort, it includes the steam plant and elevator maintenance currently performed on separate contracts, it will include a SDB participation target requirement and includes a significant Small Business subcontracting goal). There are likely to be phase-in costs for all offerors, including the incumbent.

8. Reference Amendment 2 to the Final RFP Section IX, Question 1. The removal of the requirements imposed by L.13.II.A.1.e. and L.13.II.A.3 from the page count in volume 1 is a zero sum for an SDB offeror. Our proposal and page count allocations were established early in the process and a page count reduction from 85 to 75 has had a significant impact on our proposal preparation. Therefore, it is respectfully requested that the submission date be extended a minimum of 2 weeks in order to not prejudice this procurement by giving an unfair advantage to big business.

Answer: The Government released the Draft RFP on October 29, 1998 with a 75-page limitation for the Technical Proposal. This was increased to 85 pages in the final RFP, which was released on February 10, 1999 because of the addition of Subfactor 3, SDB Participation, and the requirement for the submission of the Subcontracting Plan as part of Subfactor 1. SDB firms that do not waive the price evaluation adjustment under FAR 52.219-23 will not respond to Subfactor 3. Similarly, small businesses are not required to submit a Subcontracting Plan under Subfactor 1. Therefore, in order to put all prospective offerors on a more equal footing, the response to Subfactor 3 and the Subcontracting Plan were eliminated from the page limitation for the Technical Proposal in Amendment 2 to the Final RFP. The page limitation for the Technical Proposal was thereby reduced to the 75-page limit that was in the Draft RFP. We feel that the period from the release of Amendment 2 on March 2, 1999 until the proposal due date of March 29, 1999 is adequate time for any adjustments to accommodate this changed page limitation. The page limitation for the Technical Proposal will remain at 75 pages.

9. Reference L.13.III.A.4.b.If the support information for our cost proposal does not readily fit in one file, can more than one file be used?

Answer: It is preferred that all information be provided as one file; however, if the information you are submitting required more than one file, save all files under one directory. All linking must be within that directory. There shall be no external links.

10. Reference Attachment 2 Bid Schedule, line item 103-13.2. Is the work to be performed by these trades LaRC facilities and equipment maintenance work? If the answer to this answer is "yes", shouldn't the Government specify that these trade skills are subject to the IBEW Collective Bargaining Agreement specified wage rates, as the IBEW represents these skill trades for all facilities and equipment maintenance work at LaRC?

Answer: The Government anticipates that the referenced trades will be needed to perform the required FESS work. These trades are subject to the Services Contract Act. See references to Collective Bargaining Agreements in FAR 52.222-41, Service Contract Act 1965, As Amended (May 1989). Since the FESS procurement is a consolidation of three contracts, (see paragraph 3 of the solicitation cover sheet PROC P-287), two CBA's (Exhibit E) and a Wage Determination (Exhibit D) are applicable to this contract.

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1 | 3

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. *(If applicable)*
5	March 22, 1999	GI.2166	

6. ISSUED BY CODE

National Aeronautics and Space Administration
Langley Research Center
Hampton, VA 23681-2199

7. ADMINISTERED BY *(If other than Item 6)* CODE

8. NAME AND ADDRESS OF CONTRACTOR *(No. Street, County, State and ZIP: Code)*

TO ALL CONCERNED

CODE FACILITY CODE

(✓)	9A. AMENDMENT OF SOLICITATION NO.
X	1-135-GI.2166 Final RFP
	9B. DATED *(SEE ITEM 11)* February 10, 1999
	10A. MODIFICATION OF CONTRACT/ORDER NO.
	10B. DATED *(SEE ITEM 13)*

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☒ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☒ is not extended.
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(a) By completing Items 8 and 15, and returning one (1) copy of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATA SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and data specified.

12. ACCOUNTING AND APPROPRIATION DATA *(If required)*

N/A

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

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	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER Specify type of modification and authority)

E. **IMPORTANT:** Contractor ☐ is not, ☐ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

SUBJECT: NASA Final Request for Proposal 1-135-GC.2166 Facilities and Equipment Support Service (FESS) contract

The purposes of this amendment are to (1) incorporate a revision to the RFP; and (2) provide answers to questions.

(continued)

Except at provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER *(Type or print)*		16A. NAME AND TITLE OF CONTRACTING OFFICER *(Type or print)* SANDRA S. RAY	
15B. CONTRACTOR/OFFEROR *(Signature of person authorized to sign)*	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY *(Signature of Contracting Officer)*	16C. DATE SIGNED 3/22/99

I. Exhibit G, Performance Requirements Summary, Column (1),Item No. C8E, Data Management, is revised to incorporate under Column 4(a) the MADR. As a result, "2" is hereby incorporated as the MADR % under column (4a) for Item No. C8E.

II. Answers to Questions:

1. Reference SOW Section C.11.a, line 5. Please clarify the definition of the TC limit. Is it the government's intention that the $2000 can be allocated among labor, material, and equipment in any quantity as long as the $2000 limit is not exceeded? OR should the contractor stop at the 16-hour limit, and request an IDIQ regardless of the $2000 limit. It appears that the 16-hour limit is not necessary and that the $2000 limit is the correct ceiling. A quick response is appreciated.

ANSWER: The labor expended by the Contractor on individual Trouble Calls shall be limited to a maximum of 16 hours. The costs for labor shall be considered at the Contractor's proposed rate from the bid schedule. The separate costs for materials and equipment have no specified limit. The Contractor's total cost for individual Trouble Calls is limited to $2,000.

2. Reference Exhibit E, CBA between EG&G Langley and the IBEW Local Union No. 1340, Article XXVIII, Section I, Group Medical Insurance. Please provide the following information:

(a) What are the limits and co-payment under the current Group Medical Plan?

Answer: Base Plan - $250 deductible. After the $250 deductible is met, the cost is split 80/20 between the company and employee.

(b) Does the Group Medical Plan include a Dental Plan?

Answer: Yes, the Base Plan includes Dental.

(c) Is the premium co-pay 12% of whatever the cost of insurance is? Please clarify.

Answer: The premium co-pay of 12% is of the total cost of the Base Plan.

(d) What is the cost of the current fringe/insurance package per employee?

Answer: The average cost of health insurance per covered employee is $3,523 annually. This average includes the employee co-payment.

(e) The number of single employees covered by the CBA? The number of married employees covered by the CBA? The number of married employees with dependents covered by the CBA?

Answer: Employees statuses for participating in the Base Plan are broken out into three categories: single coverage, employee plus one coverage, and family coverage. 35 employees are currently participating in single health insurance coverage. 35 employees are currently participating in employee plus one (two-party) health insurance coverage. 61 employees are currently participating in family (married with dependents) health insurance coverage.

3. Reference Attachment 2, Bid Schedule, Item No. X02. For proposal pricing purposes, please designate for each Indefinite Quantity Work – Unit Price Task line item shown on the Bid Schedule, the basis for its pricing, i.e. Davis Bacon Act Wage Determination, Service Contract Act, Wage Determination, and/or Collective Bargaining Agreement.

Based on the description given of the services/supplies, the offerors are responsible for determining the unit prices.

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1	1

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. *(If applicable)*
6	March 23, 1999	GI.2166	

6. ISSUED BY	CODE	7. ADMINISTERED BY *(If other than Item 6)*	CODE
National Aeronautics and Space Administration Langley Research Center Hampton, VA 23681-2199			

8. NAME AND ADDRESS OF CONTRACTOR *(No. Street, County, State and ZIP: Code)*	(✓)	9A. AMENDMENT OF SOLICITATION NO.
TO ALL CONCERNED	X	1-135-GI.2166 Final RFP
		9B. DATED *(SEE ITEM 11)* February 10, 1999
		10A. MODIFICATION OF CONTRACT/ORDER NO.
		10B. DATED *(SEE ITEM 13)*
CODE / FACILITY CODE		

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

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12. ACCOUNTING AND APPROPRIATION DATA *(If required)*

N/A

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	D. OTHER Specify type of modification and authority)

E. **IMPORTANT:** Contractor ☐ is not, ☐ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

SUBJECT: NASA Final Request for Proposal 1-135-GC.2166 Facilities and Equipment Support Service (FESS) contract

The purpose of this amendment is to extend the due date of offers by one week. As a result, Standard Form 33, Block 9., is restated as follows:

"9. Sealed offers in original and 8 copies for furnishing the supplies or services in the Schedule will be received at the place specified in Item 8, or if handcarried, in the depository located in 9A Langley Boulevard, Building 1195B, Room 125 until 4:00 PM local time April 5, 1999."

Except at provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER *(Type or print)*		16A. NAME AND TITLE OF CONTRACTING OFFICER *(Type or print)*	
		SANDRA S. RAY	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
(Signature of person authorized to sign)		BY *(Signature of Contracting Officer)*	3/23/99

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1 | 3

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. *(If applicable)*
7	March 24, 1999	GI.2166	

6. ISSUED BY — CODE

National Aeronautics and Space Administration
Langley Research Center
Hampton, VA 23681-2199

7. ADMINISTERED BY *(If other than Item 6)* — CODE

8. NAME AND ADDRESS OF CONTRACTOR *(No. Street, County, State and ZIP: Code)*

TO ALL CONCERNED

CODE — FACILITY CODE

(✓)	9A. AMENDMENT OF SOLICITATION NO.
X	1-135-GI.2166 Final RFP
	9B. DATED *(SEE ITEM 11)* February 10, 1999
	10A. MODIFICATION OF CONTRACT/ORDER NO.
	10B. DATED *(SEE ITEM 13)*

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	D. OTHER Specify type of modification and authority)

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SUBJECT: NASA Final Request for Proposal 1-135-GC.2166 Facilities and Equipment Support Service (FESS) contract

The purposes of this amendment are to (1) make a revision to the RFP; and (2) provide answers to questions.

(continued)

Except at provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER *(Type or print)*		16A. NAME AND TITLE OF CONTRACTING OFFICER *(Type or print)*	
		SANDRA S. RAY	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
(Signature of person authorized to sign)		BY *(Signature of Contracting Officer)*	3/24/99

NSN 7540-01-152-8070
PREVIOUS EDITION UNUSABLE

30-105
Computer Generated

STANDARD FORM 30 (REV. 10-83)
Prescribed by GSA FAR (48 CFR) 53.243

I. Article B.5, Price Schedule 4: Option Period 2, is revised to delete Item No. 402-18, Rigging and Hauling Services, which was inadvertently incorporated into the schedule. As a result, the following is deleted from Price Schedule 4:

"402-18 Rigging and Hauling Services	Unit	Unit Price
402-18.1 Rigging Truck & tools with Supervisor (See Clause C.18)		
A Five Riggers	Hour	$
B Four Riggers	Hour	$
C Three Riggers	Hour	$
D Two Riggers	Hour	$"

II. Questions and Answers:

1. Question: The present IBEW 1340 Maintenance Collective Bargaining Agreement expires 31 July 2000. Does the Government intend to incorporate the renegotiated CBA wage and fringe rates effective 1 August 2000? If not, what is the Government's intention?

Answer: Yes, the Government does intend to incorporate into the resulting contract the renegotiated CBA wage and fringe rates effective 1 August 2000.

2. Question: There appears to be a discrepancy between the first and second sentences of the answer to question 6 of Amendment 4 concerning sick leave.

Answer: You are correct. The Government has also determined that information previously supplied concerning sick leave is incorrect i.e. that it is not carried forward (see Amendment 1, Question 8 to the Draft RFP and Amendment 4, Question 6 of the Final RFP). As a result, Question 6 of Amendment 4 is repeated for convenience with the correct answer as Question 3 below:

3 Question: Will the incumbent contractor(s) be required to pay employees for their unused vacation (annual) leave and sick leave at the end of the current contract? Please clarify. Will the successful offeror on this solicitation be required to pay employees for their unused vacation (annual) leave and sick leave at the end of the contract or will that financial responsibility be deferred to the next contractor?

Answer: The incumbent contractors will pay employees for their unused vacation leave at the end of the contracts. See Code of Federal Regulations 29 Subtitle A (7-1-98 Edition), Section 4.173 (d), *Contractor Liability for Vacation Benefits*, for additional information. Sick leave will be carried forward. The following information is given to assist offerors with estimating their liability for sick leave:

EG&G Union Employees:	Accrual Rate	104/hrs Year
	Average Use Rate	52.82/hrs Year
	Average Sick Leave Balance	360.2/hrs
DTSV Union Employees:	Accrual Rate	104/hrs Year
	Average Use Rate	24/hrs Year
	Average Sick Leave Balance	146.3/hrs

deral Crane & Elevator

n-Exempt Employees:	Accrual Rate	80/hrs Year
	Average Use Rate	64/hrs Year
	Average Sick Leave Balance	120/hrs

&G Non-Exempt

ployees:	Accrual Rate	96/hrs Year
	Average Use Rate	49.17/hrs Year
	Average Sick Leave Balance	189.52/hrs

e successful contractor for this solicitation will likely be responsible for paying employees for crued vacation at the end of the resulting contract. However, any renegotiations of the CBAs could pact terms regarding vacation and sick leave under the resulting contract.

Question: The CBAs included in the RFP allow for carry-over of represented employee annual ve and sick leave. Will the incumbent contractor pay-off the accumulated leave at the end of his ntract, or does the Government intend bidders to reflect the assumption of this cost in their fixed price ls? If bidders are to include this cost in their bids, what dollar value should be included?

swer: See the answer to Question 3 above.

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1	2

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. *(If applicable)*
8	March 31, 1999	GI.2166	

6. ISSUED BY	CODE	7. ADMINISTERED BY *(If other than Item 6)*	CODE
National Aeronautics and Space Administration Langley Research Center Hampton, VA 23681-2199			

8. NAME AND ADDRESS OF CONTRACTOR *(No. Street, County, State and ZIP: Code)*	(✔)	9A. AMENDMENT OF SOLICITATION NO.
TO ALL CONCERNED	X	1-135-GI.2166 Final RFP
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		10B. DATED *(SEE ITEM 13)*
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11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☒ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☒ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning one (1) copy of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATA SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and data specified.

12. ACCOUNTING AND APPROPRIATION DATA *(If required)*

N/A

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

(✔)	
	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: *(Specify authority)* THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES *(such as changes in paying office, appropriation date, etc.)* SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER Specify type of modification and authority)

E. **IMPORTANT:** Contractor ☐ is not, ☐ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

SUBJECT: NASA Final Request for Proposal 1-135-GC.2166 Facilities and Equipment Support Service (FESS) contract

The purpose of this amendment is to provide answers to questions.

(continued)

Except at provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER *(Type or print)*		16A. NAME AND TITLE OF CONTRACTING OFFICER *(Type or print)*	
		SANDRA S. RAY	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
(Signature of person authorized to sign)		BY *(Signature of Contracting Officer)*	3/31/99

Reference: Amendment 5, Answers relating to employee insurance plans. Could you please ɔply the "Benefit Sheet" for the various insurance plans (Group Medical, Dental, Life, Disability ɔme, etc,) for each CBA. This information is key so that the offeror's may get the best possible quote incorporate into our proposal?

ıswer: The Government does not have this information. For additional information you may ntact the Business Representative for the International Brotherhood of Electrical Workers, Local ion No. 1340, AFL-CIO at 245-7691 and the Business Representative for the District Lodge 74 ernational Association of Machinists and Aerospace Workers at 466-7665.

Reference: Amendment 4 and various technical exhibits relating to material and parts associated th maintenance. Do the historical costs for material and parts quoted throughout the above documents lude "expendable" or "bench stock" costs? Please verify.

ıswer: Reference Amendment 4. The historical and Government estimated costs for materials d parts for various technical sections includes costs of pre-expended bin materials and supplies (as erred to in Section C.4, No.43).

Reference: H.16 Unescorted Access by Contractor Employees. According to this section, ɔkground investigations are required for Contractor employees to have unescorted access to LaRC. Is NAC background check a contractor expense? If this is a contractor expense, what is the typical ice per employee? Finally, do rehired employees from the current incumbent need to be submitted for NAC check?

ıe Government pays for and performs any necessary NAC background checks. Rehired employees ıt have not previously had a favorable NAC will have to have one performed. Rehired employees ho have previously been granted a favorable NAC will not have to have one performed.

What are the specific SIC Major Group Codes for the FESS solicitation?

ıswer: The standard SIC code for this overall acquisition is 8744 as given in Section K.7 of the licitation. For subcontracting/teaming, offerors are responsible for reviewing the authorized SIC ajor Groups, as determined by the Department Of Commerce, and determining which SIC Major roups are applicable.

Reference: Attachment J-C9-0 thru 6. Do the PM hours indicated in these documents include the fort expended by your current Elevator Maintenance contractor? Please clarify.

ıswer: Yes, the PM hours indicated in the referenced documents do include the effort expended the current Elevator Maintenance contractor.

Reference: Attachment J-C9-11A. Do the hours indicated for Cranes and Elevators include ose of your current Elevator Maintenance contractor? Please clarify.

ıswer: Yes, the hours indicated for Cranes and Elevators do include the effort expended by the ırrent Elevator Maintenance contractor.