

SOLICITATION, OFFER AND AWARD

THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 350) RA #3

PAGE 1 OF 48

2. CONTRACT NO. NNE04AA12B	3. SOLICITATION NO. 1-LDI-4200024660	4. TYPE OF SOLICITATION <input type="checkbox"/> SEALED BID (IFB) <input checked="" type="checkbox"/> NEGOTIATED (RFP)	5. DATE ISSUED 2/6/04	6. REQUISITION/PURCHASE NO. 4200024660
7. ISSUED BY Nasa Aeronautics And Space Administration Langley Research Center Hampton, VA 23681		8. ADDRESS OFFER TO (If other than Item 7) 9A Langley Boulevard, Building 1195B, Room 105 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 10 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 Blvd., Bldg 1195B, Room 105 until **4:00 p.m.** local time, on **3-8-04** (date).
CAUTION - LATE Submissions, Modifications, and Withdrawals: See Section L, Provision No. 52.214-7 or 52.215-1. All offers are subject to all terms and conditions contained in this solicitation.

10. FOR INFORMATION CALL: <input checked="" type="checkbox"/>	A. NAME Tianda M. Sherrell	B. TELEPHONE NO. (NO COLLECT CALLS) AREA CODE: (757) NUMBER: 864-3640 EXT.	C. EMAIL ADDRESS Tianda.M.Sherrell@nasa.gov
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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 10 CALENDAR DAYS 20 CALENDAR DAYS 30 CALENDAR DAYS CALENDAR DAYS
(See Section I, clause No. 52-232-8) 0 % 0 % 0 % 0 %

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
	001	02/07/04	003	02/13/04
	002	02/09/04	004	02/20/04

15. NAME AND ADDRESS OF OFFEROR CODE: OL1E5 FACILITY: LOCKHEED MARTIN CORPORATION Lockheed Martin Aeronautics Company 1011 Lockheed Way, Palmdale, CA 93599	16. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER (Type or print) Shirley A. Meredith Senior Manager - Contracts Advanced Development Programs
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15B. TELEPHONE NO. (Include area code) (661) 572-2820	15C. CHECK IF REMITTANCE ADDRESS IS DIFFERENT FROM ABOVE - ENTER <input checked="" type="checkbox"/> SUCH ADDRESS IN SCHEDULE	17. SIGNATURE <i>Shirley A. Meredith</i>	18. OFFER DATE 15 July 2004
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AWARD (To be completed by Government)

9. ACCEPTED AS TO ITEMS NUMBERED	20. AMOUNT SEE SECTION B.2	21. ACCOUNTING AND APPROPRIATION 4200080871 \$25,000.00
2. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION <input type="checkbox"/> 10 U.S.C. 2304(c) () <input type="checkbox"/> 41 U.S.C. 253(c) ()	23. SUBMIT INVOICES TO ADDRESS SHOWN IN: (4 copies unless otherwise specified) <input checked="" type="checkbox"/> ITEM G.2	25. PAYMENT WILL BE MADE BY NASA Langley Research Center Financial Management, Accounts Payable M/S 175 Hampton, VA 23681-2199
4. ADMINISTERED BY (If other than Item 7) National Aeronautics & Space Administration Langley Research Center 9A Langley Blvd., Bldg 1195A, Rm. 230 Hampton, VA 23681-2199	27. UNITED STATES OF AMERICA <i>Mary Jane Yeager</i> (Signature of Contracting Officer)	28. AWARD DATE AUG 20 2004

3. NAME OF CONTRACTING OFFICER (Type or print) Mary Jane Yeager	27. UNITED STATES OF AMERICA <i>Mary Jane Yeager</i> (Signature of Contracting Officer)	28. AWARD DATE AUG 20 2004
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PART I - THE SCHEDULE

SECTION B - SUPPLIES OR SERVICES AND PRICE/COSTS

B.1 SUPPLIES AND/OR SERVICES TO BE FURNISHED

Except as may be expressly stated in the task orders as furnished by the Government, the Contractor shall provide all resources as specified in Task Orders issued pursuant to Clause H.10, Task Ordering Procedure, that are necessary to perform the requirements delineated in the Section C, Statement of Work.

B.2 MINIMUM AND MAXIMUM INDEFINITE DELIVERY, INDEFINITE QUANTITY (IDIQ) CONTRACT VALUE

The guaranteed minimum quantity of work which will be required under this contract, and which will be initiated through the issuance of task orders, shall be \$100,000. There will be no further obligation on the part of the Government to issue additional task orders thereafter. The total maximum value is \$39 million for the 5-year period of performance (total of all multiple award contracts)

B.3 ESTIMATED COST AND FIXED FEE

The estimated cost and fixed fee of the contract is the sum of the estimated costs and fixed fee set forth for individual Task orders issued by the Government pursuant to H.10, Task Ordering Procedure.

B.4 CONTRACT FUNDING

(a) For purposes of payment of cost, exclusive of fee, in accordance with the Limitation of Funds clause, the total amount allotted by the Government to this contract is the amount set forth in Task Orders. This allotment is for the performance of work in accordance with the limitations and completion dates as set forth in task orders authorized by the Contracting Officer.

(b) An additional amount is obligated under each Task Order for payment of fee.

(c) The Limitation of Funds Clause FAR 52.232-22 (APR 1984) applies at the Task Order level.

SECTION C - STATEMENT OF WORK

STRUCTURES & MATERIALS AND AERODYNAMIC, AEROTHERMODYNAMIC & ACOUSTICS TECHNOLOGY FOR AEROSPACE VEHICLES**1.0 SCOPE AND OBJECTIVES**

This contract is for Structures & Materials and Aerodynamic, Aerothermodynamic & Acoustics Technology for Aerospace Vehicles. The contractor shall furnish all personnel, facilities, equipment, material, supplies, and services, except as may be expressly set forth in the Contract task orders as Government furnished, and otherwise do all things necessary to, or incident to, perform and provide the work efforts **described**, in this Section C. The contractor shall perform task orders that are issued by the Langley Research Center Contracting Officer. This contract may be used to support all NASA Centers that require work within the scope of this Section C.

2.0 Structures & Materials for Aerospace Vehicles**2.1 Structures & Materials Technology**

Task orders will be written to support research and development in materials and structures technology related to aerospace vehicles, with emphasis in the research areas of mechanics and durability, structural dynamics, aeroelasticity, metals and thermal structures, analytical and computational methods, advanced materials and processing, and nondestructive evaluation sciences. Research and development in structures and materials technology may include the use of systems analysis to determine the potential benefits of different vehicle configurations including the potential benefits of utilizing various technologies on these different configurations.

2.1.1 Mechanics and Durability

The contractor shall conduct analytical and experimental research on the response of complex structures subjected to static and **dynamic** loads, explore basic behavior, develop advanced methods of analysis and design, and confirm validity of analysis by conducting tests of elements and large-scale structural models. Specifically, the contractor shall develop structurally efficient, cost-effective structural concepts that exploit the benefits of advanced composite and metallic materials for advanced aircraft and spacecraft structural components. The contractor shall investigate stability, strength, damage tolerance, and structural integrity of aircraft and spacecraft structures, and tailor structures made from composite materials. The contractor shall focus on the identification of structural deformations and failure modes, development of verified failure analysis, development of structurally efficient composite and metallic structural concepts, and prediction of nonlinear and linear structural response phenomena of undamaged and damaged structures subjected to mechanical and pressure loads. The contractor shall also develop and validate new static and dynamic test techniques including combined loads. The contractor shall conduct fundamental and applied research to develop the mechanics characterization of advanced materials for airframe and spacecraft structural applications where this characterization takes the form of mechanics-based mathematical models that provide the material descriptions required to predict the

deformation, strength, and life of advanced materials in complex aerospace structures. The contractor shall investigate material in elasticity, anisotropy, time, and temperature dependence for the purpose of developing constitutive relationships. The contractor shall develop continuum mechanics-based models to describe material strength when dominant cracks are not present. The contractor shall develop fracture mechanics-based failure methodologies to predict the residual strength of materials with dominant cracks to assess damage tolerant structural requirements. The contractor shall develop fatigue crack growth and life prediction methodologies to address damage tolerance requirements. The contractor shall develop the mechanics of the microstructural deformation and failure process. The contractor shall conduct structural concept trade studies.

2.1.2 Structural Dynamics

The contractor shall conduct analytical and experimental research for the purpose of developing and validating improved methods to predict, verify, and control complex aircraft and space structures dynamic responses, and to confirm the validity of approaches by conducting tests on full-scale structures, structural elements and scaled structural models. The contractor shall conduct research to improve the safety and handling performance of aircraft during all-weather ground operations, including takeoff, landing impact, and ground handling phenomena. The contractor shall conduct research to assess runway treatments and effects on aircraft and tire performance, as well as develop and validate new dynamic test techniques.

2.1.3 Aeroelasticity

The contractor shall study aeroelastic phenomena and prediction capabilities needed to apply new aerodynamics and structural concepts to future flight vehicles and to determine and solve the aeroelastic problems of current designs. The contractor shall develop and validate advanced control concepts that employ smart materials or aerodynamic control surfaces for suppressing aeroelastic response and alleviating loads and vibration. The contractor shall develop and validate advanced control concepts for ground testing simulations (including the conception, recommendation, and technical support), wind-tunnel tests, and flight experiments to validate the methodologies. The contractor shall develop and validate advanced control concepts including generation of mathematical models required to support NASA flight projects and perform studies to verify theoretical developments involving advanced control concepts. The contractor shall provide technical support in flutter prevention programs for new vehicles through analysis and aeroelastically scaled model tests.

2.1.4 Metals and Thermal Structures

The contractor shall conduct analytical and experimental research to study the behavior of complex structures subject to static and time varying mechanical and thermal loads. The contractor shall investigate basic structural and thermal behavior, develop advanced methods of analysis and design, and verify performance by conducting thermal-structural experiments at the element, component, and large scale test article level. The contractor shall also develop efficient structural concepts for future high-speed aircraft and space transportation systems that exploit the benefits of advanced composite and metallic materials by studying primary vehicle structural behavior, sizing and concept development, stress, stability and failure analysis, lightweight/durable thermal protection systems, reliable, safe, operable reusable cryogenic tank systems, cooled

structural concepts, and thermal effects on structural behavior. The contractor shall conduct research on advanced light metal alloys and metal matrix composites for aerospace structural applications. The contractor shall conduct research on lightweight, high-strength structural alloys and composites to achieve improved thermal/mechanical performance through fundamental analysis of metallurgical concepts and control of microstructural features. The contractor shall develop new or improved ingot and powder metallurgy alloys, composites, and protective coatings for enhanced mechanical properties, long-term thermal stability and environmental protection. The contractor shall explore innovative processing methods for fabricating near net shape and built-up structural components for low and high-temperature applications on future aerospace vehicles. The contractor shall test and analyze structural elements to determine effects of processing on material properties and demonstrate the utility of advanced alloys and associated processes.

2.1.5 Analytical and Computational Methods

The contractor shall develop new and evolving computer hardware and software technology to conduct research in advanced computational methods for the design and response prediction of complex aerospace vehicles subject to static, dynamic and thermal loads. The contractor shall develop methods, which reduce design cycle time, manufacturing costs, and life cycle costs. These methods shall utilize the physics of structural mechanics, materials and multidisciplinary behavior and include design methods, which optimize cost, repair, and performance requirements of aircraft structural systems in a concurrent engineering environment. The contractor shall develop modeling methods for predicting composite and metallic component failure and integrity, global/local/micro response behavior, nonlinear structural response, finite element methods, optimization and integrated thermal and mechanical behavior. The contractor shall develop new equation solvers, eigenvalue extraction algorithms and stiffness and mass matrix assembly techniques to enable efficient and rapid solution on evolving computer systems; and validate analytical methods through experimentation.

2.1.6 Advanced Materials and Processing

The contractor shall conduct fundamental and applied research studies combining the disciplines of advanced polymer synthesis, composites, and adhesives processing science, and advanced characterization methodology to develop improved materials concepts for efficient aerospace structures. The contractor shall synthesize novel polymeric materials for applications such as matrices for fiber-reinforced composites, adhesives for bonding lightweight composite and metal structures, and high-performance films for spacecraft. The contractor shall conduct research studies regarding the evolution of methodologies for characterizing polymer molecular structure/property relationships and the effect of cure and environmental exposure on these relationships for these novel polymers and related composite materials. The contractor shall conduct investigations on processing variables for fabricating structural components for advanced composites and determine the effects of these variables on material properties. The contractor shall develop innovative processing methods for fabricating composite components for aircraft and spacecraft structures. The contractor shall analyze and test these composites to demonstrate potential improvements in fabrication. The contractor shall determine the extent and cause of environmental degradation of advanced structural materials in aircraft operating environments. The contractor shall develop materials concepts and

processing methods affording damage-tolerant airframe primary structures at costs competitive with conventional engineering materials. The contractor shall determine long-term behavior of aircraft structural materials through ground-based environmental tests and flight service evaluation.

2.1.7 Nondestructive Evaluation Sciences

The contractor shall conduct research, develop, and apply advanced measurement techniques that relate quantitative nondestructive evaluation sciences to physical/engineering materials and structures characterization. These techniques include new applications using properties of ultrasound, acoustic emission, acoustic microscopy, magnetics, optics, radiography, fiber optics, computed tomography, and thermography. The contractor shall develop prototype instrumentation, systems, nondestructive evaluation and inspection techniques for materials and structures. These techniques should address advanced polymeric and metal matrix composites, carbon-carbon and ceramic materials, advanced metals, smart materials and structures for both the current and next generation subsonic, supersonic, and hypersonic aircraft structures and systems, shuttle systems, solid rocket motor structures, and testing in laboratory environments.

3.0 Aerodynamic Aerothermodynamic & Acoustics Technology for Aerospace vehicles

3.1 Aerodynamic, Aerothermodynamic & Acoustics Technology

Task orders will be written to support research and development in aerodynamics, aerothermodynamics, and acoustics technology related to aerospace vehicles, with emphasis in the research areas of configuration aerodynamics, computational modeling and simulation, flow physics and control, aircraft noise prediction and control, aerothermodynamics, hypersonic airbreathing propulsion, advanced measurement, diagnostics, and instrument systems, and model systems. The technology covers a wide variety of aerospace vehicles concepts that may include both Earth and other planetary flight applications. Vehicle configurations of interest may include traditional as well as non-traditional concepts. Vehicle flight speed regimes of interest may extend from subsonic through flight at hypersonic speeds. Research and development in these technical areas may include the use of systems analysis to determine the potential benefits of the various technologies.

3.1.1 Configuration Aerodynamics

The contractor shall conduct applied experimental and computational research focused on the development of advanced configuration concepts for all classes of fixed-wing aircraft at subsonic, transonic, and supersonic speeds. The contractor shall conceive and evaluate innovative aircraft plan-form shapes, control effectors, and propulsion system installations and assess the suitability for further development. This research shall include the development of an understanding of the flow physics and integrated aerodynamic characteristics associated with these classes of aircraft. The contractor shall perform assessments of vehicle performance at cruise, off-design, and high-lift conditions using experimental and computational methods. Occasional modification/adaptation of computational tools may be required for performing design and assessment of revolutionary and evolutionary air vehicle configurations. The contractor shall conduct studies to optimize all aspects of configuration external shape and to develop and use active and passive configuration shaping, active and passive flow control methods, thrust vectoring for control, and advanced propulsion system installations for improving performance, stability and control, and maneuverability. In addition, the contractor shall conduct studies also aimed at understanding and optimizing the mutual interference effects that exist between aircraft components such as the wing, fuselage, propulsion system, and external stores to significantly increase performance.

3.1.2 Computational Modeling and Simulation

The contractor shall develop computational methods that can be used to improve fundamental understanding of physics associated with the fluid mechanics and noise generation for complex airframe systems. The contractor shall conduct computational research in aerodynamics and acoustics with applications in all speed regimes, from subsonic to hypersonic flight. The contractor shall utilize the full range of mathematical equations for fluid dynamic and acoustics, including various levels of modeling that range from linearized to fully non linear equations. The contractor shall conduct research in grid generation and fluid dynamics/aeroacoustic equation solution methods for both structured and unstructured grid topologies. In particular,

the contractor shall perform advanced research aimed at the development and validation of steady and unsteady solutions to the Reynolds-Averaged Navier-Stokes equations. The contractor shall provide for the timely transfer of validated computer software to Langley researchers and organizations, including the creation and transfer of appropriate computer code documentation. The contractor shall develop new analytical and numerical methods and extensions of existing computational methods for the analysis and design of complex three-dimensional configurations, including the exploration of massively parallel and distributed workstation-class computers for affordable computations. The contractor shall also conduct research aimed at developing higher order accurate algorithms and improved boundary condition procedures for the prediction of aeroacoustic noise for advanced subsonic and supersonic aircraft. The contractor shall conduct both basic and applied research aimed at improving the physical understanding of advanced techniques and models for the prediction and control of turbulent flows, with an emphasis on the high Reynolds number flows encountered on full-scale aircraft configurations. The contractor shall also conduct computational methods research for a wide range of applications, including rapid and robust adaptive unstructured grid analysis and design methods, airframe noise prediction and control methods, turbulence and transition modeling and validation, and time-dependent flow fields for application to flow control device design, vehicle stability and control, and vehicle aeroelastic stability prediction.

3.1.3 Flow Physics and Control

The contractor shall conduct fundamental experimental and computational research to enhance the knowledge and understanding of the physics underlying boundary-layer transition, active and passive flow control, three-dimensional flow physics, turbulence, vortical and separated flows. The contractor shall apply this understanding in the development of advanced computational and analytical methods for the prediction of boundary-layer transition and in developing techniques for controlling viscous fluid flows. The contractor shall conduct experiments to obtain detailed flow field and surface data to validate Computational Fluid Dynamics (CFD) methods. The contractor shall apply advanced wind tunnel and experimental test techniques across the speed range from low subsonic to hypersonic speeds. The contractor shall transfer validated design tools and benchmark experimental data to NASA researchers and organizations.

3.1.4 Aircraft Noise Prediction and Control

The contractor shall conduct research aimed at understanding, predicting and controlling the noise of all classes of aircraft (including both fixed- and rotary-wing) . The contractor shall conduct research to understand and control interior noise and its effects on aircraft, rotorcraft, and spacecraft structures, passengers, and crew. The contractor shall conduct research that includes fundamental, theoretical, analytical, and experimental components as well as applied efforts. The contractor shall conduct research on the fluid mechanics and acoustics of jets, nacelle and fan noise, airframe noise, and propulsion/airframe aeroacoustics. The contractor shall conduct research to understand noise generation processes, to develop methods for predicting acoustics and flow fields and their interactions, and to identify and demonstrate noise reduction and control techniques. The contractor shall develop advanced active and passive interior noise control concepts for vehicles manufactured with conventional, advanced metallic, or

composite materials. The contractor shall also conduct research to understand, predict, and control the response of vehicle structures of advanced metallic and composite materials to intense acoustic loads, for acoustic fatigue avoidance. The contractor shall conduct experimental research in anechoic facilities, laboratories, wind tunnels, and on vehicles in flight. The contractor shall develop noise-prediction computer software that ranges from analytical and CFD-based methods to empirical and semi-empirical aircraft systems and airport noise prediction methods.

3.1.5 Aerothermodynamics

The contractor shall conduct research to assesses, optimize, and benchmarks the national access-to-space and planetary entry vehicle concepts. The contractor shall develop new aerothermodynamic technologies to enable and enhance vehicle performance. The contractor shall conduct research to understand complex flowfield physics associated with aerospace vehicles. The contractor shall develop rapid, high fidelity computational/experimental tools required for vehicle assessment and technology advancement.

3.1.6 Hypersonic Airbreathing Propulsion

The contractor shall conduct multidisciplinary research to develop advanced technology for hypersonic airbreathing propulsion systems for aerospace vehicles. The focus of the research will be on airframe integrated engine concepts having high performance over a wide range of flight Mach numbers. The contractor shall conduct research that develops and validates integrated multidisciplinary methods for design and analysis with both fundamental physics and phenomenological models including effects of turbulence, mixing, finite-rate reactions, fuel injection, and geometry on ignition, combustion and thrust performance across

integrated airbreathing-engines shall be developed and evaluated. The contractor shall predict complete airframe-engine performance characteristics for both ground-test and flight-test conditions using experimentally verified analysis methods. Innovative experimental techniques and diagnostics shall be developed for application in tests of airframe-integrated engines in ground test facilities. The contractor shall utilize appropriate test data, or conduct tests of complete subscale and large-scale engines, to assess and to improve integrated engine and aero-thermo-structural performance.

3.1.7 Advanced Measurement, Diagnostics and Instrument Systems

The contractor shall conduct research and development of experimental measurement and sensing techniques for aerospace research applications. Utilizing expertise ranging from analytical chemistry to optical physics to advanced sensors and actuators, the contractor shall develop advanced micro-electro-mechanical systems (MEMS) sensors and nanosensors and the associated electronics. The contractor shall conduct research aimed at discovering and developing radical new techniques to allow the measurement and quantification of the aerodynamic properties associated with advanced vehicle concepts. The contractor shall demonstrate the ability to conduct research for a large variety of applications, including non-intrusive optical measurement techniques of wind tunnel model state, global flow diagnostic measurement techniques for velocity, temperature and pressure measurements, intelligence frameworks for large sensor arrays, and time-dependent sensing methods.

3.1.8 Model Systems

The contractor shall perform research to develop state of the art test-articles, electro-mechanical instrumentation systems that enable achievement of NASA's research and development goals. The contractor shall perform applied research for development of sub-scaled flying vehicles, electromechanical systems and discrete measurement systems using systems engineering theory to insure the complete integration of complex hardware and instrument systems. The contractor shall conduct research to assess and improve current capabilities for scaled model systems. The contractor shall develop model systems for a variety of applications, including morphing and dynamic control for test articles, cycle time reduction efforts and characterization and integration of sensors (strain, force and angle-of-attack)

4.0 Integration

The contractor shall conduct research and development for the integration of structures and material technologies with aerodynamic, aerothermodynamic & acoustics technologies. The contractor shall provide detailed systems analysis for both revolutionary and evolutionary vehicle concepts including evaluating the relative merits of individual technologies within a vehicle system. This capability shall include the ability to assess multidisciplinary implications (aerodynamics, noise, structures, observables, etc.) of evolutionary and revolutionary vehicle concepts and advanced technology integration into those concepts.

SECTION D - PACKAGING AND MARKING

D.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE

NOTICE: The following contract clauses pertinent to this section are hereby incorporated by reference:

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

CLAUSE NUMBER	DATE	TITLE
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None included by reference.

II. NASA FAR SUPPLEMENT (48 CFR CHAPTER 18) CLAUSES

CLAUSE NUMBER	DATE	TITLE
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None included by reference.

SECTION E - INSPECTION AND ACCEPTANCE

E.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE

NOTICE: The following contract clauses pertinent to this section are hereby incorporated by reference:

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

CLAUSE NUMBER	DATE	TITLE
52.246-8	MAY 2001	INSPECTION OF RESEARCH AND DEVELOPMENT -COST-REIMBURSEMENT

II. NASA FAR SUPPLEMENT (48 CFR CHAPTER 18) CLAUSES

CLAUSE NUMBER	DATE	TITLE
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E.2 HIGHER-LEVEL CONTRACT QUALITY REQUIREMENT (FAR 52.246 -11) (FEB 1999)

The Contractor shall comply with the higher-level quality standard selected below.

Title	Number	Date
ANSI/ISO/ASQC Q	ISO 9001	

[NOTE: This clause applies only when the deliverable is other than a report.]

E.3 MATERIAL INSPECTION AND RECEIVING REPORT (NFS 1852.246-72) (AUG 2003)

(a) At the time of each delivery to the Government under this contract, the Contractor shall furnish a Material Inspection and Receiving Report (DD Form 250 series) prepared in 5 copies, an original and 4 copies.

(b) The Contractor shall prepare the DD Form 250 in accordance with NASA FAR Supplement 1846.6. The Contractor shall enclose the copies of the DD Form 250 in the package or seal them in a waterproof envelope, which shall be securely attached to the exterior of the package in the most protected location.

(c) When more than one package is involved in a shipment, the Contractor shall list on the DD Form 250, as additional information, the quantity of packages and the package numbers. The Contractor shall forward the DD Form 250 with the lowest numbered package of the shipment and print the words 'CONTAINS DD FORM 250" on the package.

SECTION F - DELIVERIES OR PERFORMANCE

F.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE

NOTICE: The following contract clauses pertinent to this section are hereby incorporated by reference:

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

CLAUSE NUMBER	DATE	TITLE
52.211-15	SEP 1990	DEFENSE PRIORITY AND ALLOCATION REQUIREMENTS
52.242-15	AUG 1989	STOP-WORK ORDER (ALTERNATE I) (APR 1984)
52.247-34	NOV 1991	F.O.B. DESTINATION

II. NASA FAR SUPPLEMENT (48 CFR CHAPTER 18) CLAUSES

CLAUSE NUMBER	DATE	TITLE
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None included by reference.

F.2 PERIOD OF PERFORMANCE

The period for issuance of task orders is 60 months from the effective date of this contract.

F.3 DELIVERY REQUIREMENTS (LaRC 52.211-96) (APR 2002)

Delivery shall be f.o.b destination:

National Aeronautics and Space Administration, Langley Research Center
4 South Marvin Street (Bldg. 1206), Hampton, VA 23681-2199, or as
specified in each task order

F.4 PLACE(S) OF PERFORMANCE (LaRC 52.211-98) (OCT 1992)

The place(s) of performance shall be:

The Contractor's facilities in Palmdale, California, Fort Worth, Texas, Marietta, Georgia, Denver, Colorado, Michoud, Louisiana, Palo Alto, California and Sunnyvale, California, at subcontractor facilities, and other sites as may be specified by task orders.

SECTION G - CONTRACT ADMINISTRATION DATA

G.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE

NOTICE: The following contract clauses pertinent to this section are hereby incorporated by reference:

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

CLAUSE NUMBER	DATE	TITLE
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None included by reference.

II. NASA FAR SUPPLEMENT (48 CFR CHAPTER 18) CLAUSES

CLAUSE NUMBER	DATE	TITLE
1852.216-75	DEC 1988	PAYMENT OF FIXED FEE
1852.242-73	JUL 2000	NASA CONTRACTOR FINANCIAL MANAGEMENT REPORTING
1852.245-70	JUL 1997	CONTRACTOR REQUESTS FOR GOVERNMENT OWNED EQUIPMENT

G.2 SUBMISSION OF VOUCHERS FOR PAYMENT (NFS 1852.216-87) (MAR 1998)

(a) The designated billing office for cost vouchers for purposes of the Prompt Payment clause of this contract is indicated below. Public vouchers for payment of costs shall include a reference to the number of this contract.

(b) (1) If the contractor is authorized to submit interim cost vouchers directly to the NASA paying office, the original voucher should be submitted to:

NASA Langley Research Center
MS 175/ Accounts Payable
Hampton VA 23681

(2) For any period that the Defense Contract Audit Agency has authorized the Contractor to submit interim cost vouchers directly to the Government paying office, interim vouchers are not required to be sent to the Auditor, and are considered to be provisionally approved for payment, subject to final audit.

(3) Copies of vouchers should be submitted as directed by the Contracting Officer.

(c) If the contractor is not authorized to submit interim cost vouchers directly to the paying office as described in paragraph (b), the contractor shall prepare and submit vouchers as follows:

(1) One original Standard Form (SF) 1034, SF 1035, or equivalent Contractor's attachment to:

DCAA-SWBO
P.O. Box 900846
Palmdale CA, 93590-0846

(2) Three copies of SF 1034, SF 1035A, or equivalent Contractor's attachment to the following offices by insertion in the memorandum block of their names and addresses:

(i) Copy 1 NASA Contracting Officer

(ii) Copy 2 Auditor

(iii) Copy 3 Contractor

(3) The Contracting Officer may designate other recipients as required.

(d) (1) Public vouchers for payment of fee shall be prepared similarly to the procedures in paragraphs (b) or (c) of this clause, whichever is applicable, and be forwarded to:

NASA Langley Research-Center
MS 175/ Accounts Payable
Hampton VA 23681

This is the designated billing office for fee vouchers for purposes of the Prompt Payment clause of this contract.

(2) Fixed fee shall be paid in monthly installments based upon the percentage of completion of work as determined by the Contracting Officer. The following formulas are provided as a convenience for calculating the interim fee provided the formulas produce a reasonable percentage as compared to completion of work. You should show both formulas on your fee voucher however, the maximum fee percentage for fee billing is the smaller of the percentages resulting from the application of the two formulas. If at any time the Contracting officer determines that the fee percentage is not consistent with the completion of work, the fee formula will be adjusted, or another methodology that results in comparative fee billing agree upon.

(#) Cost Incurred to Date
Contract Estimated Cost

(#) Months of Performance Expended to Date
Contract Period of Performance (Months) = %

(e) In the event that amounts are withheld from payment in accordance with provisions of this contract, a separate voucher for the amount withheld will be required before payment for that amount may be made.

G.3 DESIGNATION OF NEW TECHNOLOGY REPRESENTATIVE AND PATENT REPRESENTATIVE (NASA 1852.227-72) (JUL 1997) (LaRC FILL IN)

(a) For purposes of administration of the clause of this contract entitled 'New Technology or "Patent Rights -- Retention by the Contractor (Short Form), whichever is included, the following named representatives are hereby designated by the Contracting Officer to administer such clause:

New Technology Representative
Office Code 212
NASA Langley Research Center
Hampton, VA 23681-2199

Patent Representative
Office Code 212
NASA Langley Research Center
Hampton, VA 23681-2199

(b) Reports of reportable items, and disclosure of subject inventions, interim reports, final reports, utilization reports, and other reports required by the clause, as well as any correspondence with respect to such matters, should be directed to the New Technology Representative unless transmitted in response to correspondence or request from the Patent Representative. Inquires or requests regarding disposition of rights, election of rights, or related matters should be directed to the Patent Representative. This clause shall be included in any subcontract hereunder requiring a 'New Technology clause or "Patent Rights--Retention by the Contractor (Short Form)" clause, unless otherwise authorized or directed by the Contracting Officer. The respective responsibilities and authorities of the above-named representatives are set forth in 1827.305-370 of the NASA FAR Supplement.

G.4 FINANCIAL REPORTING OF NASA PROPERTY IN THE CUSTODY OF CONTRACTORS NFS 1852.245-73 (AUGUST 2001) (DEVIATION)

(a) The Contractor shall submit annually a NASA Form (NF) 1018, NASA Property in the Custody of Contractors, in accordance with the provisions of 1845.505-14, the instructions on the form, subpart 1845.71, and any supplemental instructions for the current reporting period issued by NASA.

(b) (1) Subcontractor use of NF 1018 is not required by this clause; however, the Contractor shall include data on property in the possession of subcontractors in the annual NF 1018.

(2) The Contractor shall mail the original signed NF 1018 directly to the cognizant NASA Center Deputy Chief Financial Officer, Finance, unless the Contractor uses the NF 1018 Electronic Submission System (NESS) for report preparation and submission.

(3) One copy shall be submitted (through the Department of Defense (DOD) Property Administrator if contract administration has been delegated to DOD) to the following address: Attention: Industrial Property Office, NASA Langley Research Center, Office of Logistics Management, Mail Stop 377, Hampton VA 23681-2199; unless the Contractor uses the NF 1018 Electronic Submission System (NESS) for report preparation and submission.

(c) (1) The annual reporting period shall be from October 1 of each year through September 30 of the following year. The report shall be submitted in time to be received by October 15. The information contained in these reports is entered into the NASA accounting system to reflect current asset values for agency financial statement purposes. Therefore, it is essential that required reports be received no later than October 15. Some activity may be estimated for the month of September, if necessary, to ensure the NF 1018 is received when due. However, contractors procedures must document the process for developing these estimates based on planned activity such as planned purchases or NASA Form 533 (NF 533 Contractor Financial Management Report) cost estimates. It should be supported and documented by historical experience or other corroborating evidence, and be retained in accordance with FAR Subpart 4.7, Contractor Records Retention. Contractors shall validate the reasonableness of the estimates and associated methodology by comparing them to the actual activity once that data is available, and adjust them accordingly. In addition, differences between the estimated cost and actual cost must be adjusted during the next reporting period. Contractors shall have formal policies and procedures, which address the validation of NF 1018 data, including data from subcontractors, and the identification and timely reporting of errors. The objective of this validation is to ensure that information reported is accurate and in compliance with the NASA FAR Supplement. If errors are discovered on NF 1018 after submission, the contractor shall immediately contact the cognizant NASA Center Industrial Property Officer (IPO) to discuss corrective action.

(2) The Contracting Officer may, in NASA's interest, withhold payment until a reserve not exceeding \$25,000 or 5 percent of the amount of the contract, whichever is less, has been set aside, if the Contractor fails to submit annual NF 1018 reports in accordance with 1845.505-14 and any supplemental instructions for the current reporting period issued by NASA. Such reserve shall be withheld until the Contracting Officer has determined that NASA has received the required reports. The withholding of any amount or the subsequent payment thereof shall not be construed as a waiver of any Government right

(d) A final report shall be submitted within 30 days after disposition of all property subject to reporting when the contract performance period is complete in accordance with (b) (1) through (3) of this clause.

SECTION H - SPECIAL CONTRACT REQUIREMENTS

H. 1 LISTING OF CLAUSES INCORPORATED BY REFERENCE

NOTICE: The following contract clauses pertinent to this section are hereby incorporated by reference:

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

CLAUSE NUMBER	DATE	TITLE
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None included by reference.

II. NASA FAR SUPPLEMENT (48 CFR CHAPTER 18) CLAUSES

CLAUSE NUMBER	DATE	TITLE
1852.204-74	MAY 2002	CENTRAL CONTRACTOR REGISTRATION
1852.208-81	OCT2001	RESTRICTIONS ON PRINTING AND DUPLICATING
1852.223-70	APR 2002	SAFETY AND HEALTH
1852.223-75	FEB 2002	MAJOR BREACH OF SAFETY OR SECURITY
1852.235-73	FEB2003	FINAL SCIENTIFIC AND TECHNICAL REPORTS (Alternate II) (Feb 2003)
1852.244-70	APR1985	GEOGRAPHIC PARTICIPATION IN THE AEROSPACE PROGRAM

H.2 SECURITY PROGRAM/NON-U.S. CITIZEN EMPLOYEE ACCESS REQUIREMENTS (LaRC 52.204-91) (Oct 03)

(a) Access to the LaRC by contractor non-U.S. citizen employees, including employees in permanent resident alien status, shall be approved in accordance with NPR 1371.2 and LMS-CP-4850-- "Non-U.S. Citizen(s) /Foreign Representative(s) Visitor Approval". Administrative processing requires advance notice of between 20 to 45 days depending on the nationality of the non-U.S. citizen. Access authorization shall be for a maximum of one year, and must be reevaluated annually. Non-U.S. citizen employees must be under escort at all times while on Center by a U.S. citizen issued a LaRC identification badge.

(b) Request for Center access in excess of 90 days requires that a background investigation be conducted on the non-U.S. citizen employee. The processing of a background investigation requires the submittal of a NASA Form 531, 'Name Check Request,' and a fingerprint card application. Normal processing time for a background investigation is approximately 90 days. A favorably adjudicated background investigation shall allow non-U.S. citizen contractor employee limited unescorted access to the Center. Access shall be limited to work areas identified and deemed necessary and entry and egress to that site.

H.3 UNESCORTED ACCESS BY U.S CITIZEN CONTRACTOR EMPLOYEES (LaRC 52.204-102) (NOV 2002)

Visits by U.S. citizen contractor employees that are expected will exceed 90 days will require the employee to undergo a Background Investigation. All Contractor employees must, as a minimum, have a favorably adjudicated NASA Agency Check (NAC). However, a NAC is not required if the Contractor can certify that an employee has an active United States Government Security Clearance, (IAW requirements of Executive Order #12968), or has been the subject of a prior favorable NAC investigation.

For contractor employees requiring a NAC, the Contractor shall require its employees to submit a "Name Check Request" (NASA Form 531), an "Authorization for Release of Credit Reports" (NASA Form 1684), and a completed FD-258, "Applicant Fingerprint Card" to the LaRC Badge and Pass Office, Mail Stop 232. Fingerprint cards will be completed at the Badge and Pass Office only. Normal processing time for a NASA NAC is approximately 60 days.

H.4 (LIMITED) RELEASE OF CONTRACTOR CONFIDENTIAL BUSINESS INFORMATION (CBI) (LaRC 52.204-104) (JAN 2002)

(a) NASA may find it necessary to release information submitted by the Contractor, either in response to this solicitation or pursuant to the provisions of this contract, to individuals not employed by NASA. Business information that would ordinarily be entitled to confidential treatment may be included in the information released to these individuals. Accordingly, by submission of this proposal, or signature on this contract or other contracts, the Contractor hereby consents to a limited release of its Confidential Business Information (CBI)

(b) Possible circumstances where the Agency may release the Contractor's CBI include, but are not limited to, the following:

(1) To other Agency contractors and subcontractors, and their employees tasked with assisting the Agency in handling and processing information and documents in the evaluation, the award or the administration of Agency contracts, such as providing both preaward and post award audit support and specialized technical support to NASA's technical evaluation panels;

(2) To NASA contractors and subcontractors, and their employees engaged in information systems analysis, development, operation, and maintenance, including performing data processing and management functions for the Agency.

(c) NASA recognizes its obligation to protect the contractor from **competitive** harm that could result from the release of such information to a competitor. Except where otherwise provided by law, NASA will permit the limited release of CBI under subparagraphs (1) or

(2) only pursuant to non-disclosure agreements signed by the assisting contractor or subcontractor, and their individual employees who may require access to the CBI to perform the assisting contract.

(d) NASA's responsibilities under the Freedom of Information Act are not affected by this clause.

(e) The Contractor agrees to include this clause, including this paragraph (e), in all subcontracts at all levels awarded pursuant to this contract that require the furnishing of CBI by the subcontractor.

**H.5 INCORPORATION OF SECTION K OF THE PROPOSAL BY REFERENCE
(LaRC 52.215-107) (NOV 2002)**

Pursuant to FAR 15.204-1(b), the completed Section K of the proposal is hereby incorporated by reference.

**H.6 SMALL DISADVANTAGED BUSINESS PARTICIPATION --CONTRACT TARGETS
(LaRC 52.219-91) (OCT 2002) (for offeror fill-in)**

Fill-In: By offeror

(a) This clause does not apply to, and should not be completed by, Small Disadvantaged Business (SDB) of ferors unless the SDB of feror has waived the price adjustment evaluation adjustment [see Paragraph (c) of FAR clause 52.219-23]

(b) FAR 19.202-4(a) requires that SDB participation targets be incorporated in the contract. Targets for this contract are as follows: (See Internet at <http://www.census.gov/epcd/www/naics.html> for Department of Commerce NAICS Industry Subsectors.)

Department of Commerce		
NAICS Industry Subsector	Dollar Target	Percent of Contract Value
Yr 1 - 541710, 541710 & 332510	\$780,000	2%
Yr 2 - 541710, 541710 & 332510	\$780,000	2%
Yr 3 - 541710, 541710 & 332510	\$780,000	2%
Yr 4 - 541710, 541710 & 332510	\$780,000	2%
Yr 5 - 541710, 541710 & 332510	\$780,000	2%

(c) FAR 19.202-4(b) requires that SDB concerns that are specifically identified by the of feror 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:

Name of Concern(s)

Zin Technologies, 3000 Aerospace Parkway, Brook Park, OH44142

ASRI, 3411 Triana Blvd S. W., Huntsville, AL 35805

The Contractor shall notify the Contracting Officer of any substitutions of firms that are not SDB concerns.

(d) If the prime offerer 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 Department of Commerce NAICS Industry Subsectors is as follows:

Percent of Dollars	Contract Value
Year 1	
Year 2	
Year 3	
Year 4	
Year 5	

**H.7 ADVANCE REVIEW FOR RELEASE OF TECHNICAL INFORMATION (LaRC 52.22792)
(JUL 2002)**

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 comment prior to publication, presentation or release to others. The COTR will have 30 days from submission to review all material proposed for publication and submit comments to the Contractor which will be given full consideration before publishing.

[Applicable to of ferors who are compliant at time of award]

**H.8 QUALITY MANAGEMENT SYSTEM REQUIREMENTS (ISO 9001:2000)
(LaRC 52.246-97) (SEP 2002)**

The Contractor's quality system shall be compliant with the requirements of the current ANSI/ISO/ASQC Q ISO 9001 standard, Quality Management Systems Requirements.

The Contractor's quality system shall remain in compliance with the ISO 9001 standard during the term of the contract. The Government reserves the rights to audit the Contractor's quality system at any time.

"Compliant" as used in this clause means that the contractor has defined, documented, and will continually implement during the term of the contract management-approved methods of operation that conform to the requirements given in the above-cited International Standard.

[Applicable to Of ferors who are not compliant at time of award]

**H.9 QUALITY MANAGEMENT SYSTEM COMPLIANCE REQUIREMENTS (ISO 9001:2000)
(LaRC 52.246-96) (SEP 2002)**

The Contractors quality system shall be compliant with the requirements of the current ANSI/ISO/ASQC Q ISO 9001 standard, Quality Management Systems Requirements.

Since the Contractor's quality system is not already compliant with the requirements of the current ANSI/ISO/ASQC Q ISO 9001 standard, the Contractor shall develop quality system procedures and associated documentation to become compliant within nine months after the contract effective date.

Once compliance with the current ANSI/ISO/ASQC Q ISO 9001 has been achieved, an updated Quality System Manual and final documentation (addressing the topics noted in the Contractor's compliance plan) should be submitted for review and acceptance.

The Contractor's quality system shall remain in compliance with the ISO 9001 standard during the term of the contract. The Government reserves the right to audit the Contractors quality system at any time.

'Compliant' as used in this clause means that the contractor has defined, documented, and will continually implement during the term of the contract management-approved methods of operation that conform to the requirements given in the above-cited International Standard.

H.10 TASK ORDERING PROCEDURE (NFS 1852.216-80) (OCT 1996)

(a) Only the Contracting Officer may issue task orders to the Contractor, providing specific authorization or direction to perform work within the scope of the contract and as specified in the schedule. The Contractor may incur costs under this contract in performance of task orders and task order modifications issued in accordance with this clause. No other costs are authorized unless otherwise specified in the contract or expressly authorized by the Contracting Officer.

(b) Prior to issuing a task order, the Contracting Officer shall provide the Contractor with the following data:

(1) A functional description of the work identifying the objectives or results desired from the contemplated task order.

(2) Proposed performance standards to be used as criteria for determining whether the work requirements have been met.

(3) A request for a task plan from the Contractor to include the technical approach, period of performance, appropriate cost information, and any other information required to determine the reasonableness of the Contractors proposal.

(c) The Contractor shall submit a task plan conforming to the Contracting Officer's request, within the time period specified in the individual task orders. Typically, the normal time period for task plan submittal is 15 days; however, the period may vary.

(d) After review and any necessary discussions, the Contracting Officer may issue a task order to the Contractor containing, as a minimum, the following:

(1) Date of the order.

- (2) Contract number and order number.
- (3) Functional description of the work identifying the objectives or results desired from the task order, including special instructions or other information necessary for performance of the task.
- (4) Performance standards, and where appropriate, quality assurance standards.
- (5) Maximum dollar amount authorized (cost and fee)
- (6) Any other resources (travel, materials, equipment, facilities, etc.) authorized.
- (7) Delivery/performance schedule including start and end dates
- (8) Accounting and appropriation data.
- (e) The Contractor shall provide acknowledgment of receipt to the Contracting Officer within 3 calendar days after receipt of the task order.
- (f) If time constraints do not permit issuance of a fully defined task order in accordance with the procedures described in paragraphs (a) through (d) , a task order which includes a ceiling price may be issued.
- (g) The Contracting officer may amend tasks in the same manner in which they were issued.
- (h) In the event of a conflict between the requirements of the task order and the Contractors approved task plan, the task order shall prevail .

H.11 FLIGHT TEST OPERATIONS AND SAFETY REPORT (FTOSR) INFORMATION (LaRC 52.223-91) (OCT 2003)

The Technical Point of Contact (POC) and/or COTR must submit a Flight Test Operations and Test and Safety Report (FTOSR) to the Airworthiness and Safety review Board (ASRB) for evaluation and approval in order to obtain a Flight Safety Release letter. The contractor shall support the Technical Point of Contact (POC) and/or COTR to obtain this Flight Safety Release letter when work performed under this contract requires experiments to be flown on or involving aircraft (including balloon borne experiments/instruments) whose flights occur within the Earth's sensible atmosphere. Specifically such flights include full-scale aircraft or aircraft models, either manned or unmanned and either powered or un-powered. No flight test/flight experiment shall be conducted until a Flight Safety Release letter is obtained. This is applicable for aircraft that are either NASA, University or Contractor-owned. The contractor shall develop the FTOSR or information required for the FTOSR. The Flight Safety Release letter is obtained by the Technical Point of Contact (POC) and/or COTR from the LaRC Airworthiness and Safety Review Board (ASRB) per the requirements of LNS-CP--5580 "Airworthiness and Safety Review Board", and in accordance with LAPD-1710.1 and LAPG 1710.16. An outline for the FTOSR is provided below. If an item in the FTOSR does not apply, the item must be marked as such and a brief reason why it does not apply.

Flight Test Operations and Safety Report (FTOSR) Outline:

Cover Sheet w/ Approvals

Program/Project Overview:

- Program Objectives & General Description
- Program Management
- Selected Aircraft
- Proposed Aircraft Modifications & Design Criteria
- Instrumentation Hardware/software & Flt Test
- Data Measurement Requirements
- Contractual Requirements
- Other Involved Agencies
- Summary of Supporting Research & Tests
- Analytical
 - Wind Tunnel
 - Simulation
- Ground Operating Systems Check out
- Proposed Schedule Milestones

Flight Test Operations:

- Location
- Flight Tests Start Date
- Number of Flights
- Flight Frequency
- Test Procedures (incl. maneuvers)

Support Requirements:

- Support Organization & Responsibilities
- Transportation to Test Location
- Chase Aircraft
- Photo/TV Coverage
- Tracking
 - Radar
 - Optical
- Beacon (incl. frequency)
- Telemetry
- Communications
- Meteorological
 - Data
 - Real Time
 - Quick Look
 - Processed
- Other Special Support Requirements

Safety:

- System Safety Program Plan
- Risk Assessment
- Hazard Analysis

General Operational Restrictions & Conditions

Weather

Personal Equipment

Minimum On-board Equipment

Weight/Balance

Flight Test Envelope

Abort Procedures

Emergency Plans & Procedures

Configuration Control Responsibilities

Other

H. 12 MULTIPLE AWARD CONTRACTS

Orders under this multiple award contract will be placed in accordance with FAR 16.505 and H.I.O, Task Ordering Procedure. Unless otherwise stated in an individual Task Order Request, the selection criteria to be considered to provide multiple awardees a fair opportunity to be considered for award for each order are: technical approach, cost, and past performance. Unless otherwise stated in an individual Task Order Request, these criteria will be considered of essentially equal importance.

H.13 TASK ORDER SOLICITATION AND SELECTION PROCEDURES

A. Each contractor will be given a fair opportunity to be considered for each order in accordance with FAR 16.505. This contract includes no requirement for the contractor to submit a task plan for any individual task order. The costs of preparing task plans for individual task orders under the contract will not be an allowable direct charge to the contract. However, these costs may be an allowable cost to the normal bid and proposal indirect cost pursuant to FAR 31.205-18.

The contracting officer (CO) will consider past performance, quality of services and/or deliverables, final proposed cost/price or other factors the contracting officer believes are relevant.

Contractors need not be given an opportunity to be considered for a particular order in excess of \$2,500 under multiple Task Order contracts if the CO determines that-

1. The agency need for such supplies or services is of such urgency that providing such opportunity would result in unacceptable delays;
2. Only one such contractor is capable of providing such supplies or services required at the level of quality required because the supplies or services ordered are unique or highly specialized;
3. The order should be issued on a sole-source basis in the interest of economy and efficiency as a logical follow-on to an order already issued under the contract, provided that all contractors were given a fair opportunity to be considered for the original order; or

4. It is necessary to place an order to satisfy a minimum guarantee.

B. The CO need not contact each of the multiple award contractors before selecting an order awardee if the contracting officer has information available to ensure that each multiple contractor is provided a fair opportunity to be considered for each order.

C. For those orders, which are competed among the multiple contract awardees, the CO will provide a solicitation to each contractor and will request a task plan in accordance with H-b, Task Ordering Procedure. The solicitation will include a Statement of Work, specifications, or drawings; required delivery date, any special instructions or provisions, and any selection criteria to be used to award the Task Order which differs from that specified in H. 13. Prior to awarding the Task Order, all awardees will be required to provide a task plan that may include the following: 1) technical approach, 2) implementation plan (including staffing, proposed facilities and subcontractors), and 3) estimated cost including breakouts of the estimated labor hours and all costs to perform the Task Order. The level of detail in each Task Plan will be dependent on the complexity of the requirement. Upon selection of an awardee, the CO and Contracting Officer Technical Representative (COTR) will review the task plan and cost estimate to complete the work. The contracting officer will negotiate any necessary changes with the Contractor. The final cost estimate represents the baseline to be used for reporting in Columns 7b and 7d of NASA Form 533N (See Exhibit A)

D. Orders may be issued by facsimile or be electronic commerce methods.

E. No protest is authorized in connection with this contract except for a protest on the grounds that the order increases the scope, period, or maximum value of the contract.

F. In the case where only one award is made as a result of this solicitation or if the CO determines that the Task Order shall not be competed (based on criteria stated in Paragraph A above), the following Task Order initiation procedure apply:

1. The COTR will provide a Statement of Work, specifications, or drawings; required delivery date, any special instructions or provisions to the Contractor.

2. The Contractor will be required to provide a task plan, which shall include a discussion of their technical approach for performing the work and an estimated cost for the proposed Task Order in accordance with H-IO. Task Ordering Procedure. The estimated cost shall include breakouts of the estimated labor hours and costs to perform the Task Order.

3. The CO and COTR will review the task plan and cost estimate to complete the work. The CO will negotiate necessary changes with the Contractor.

4. The final negotiated cost estimate shall represent the baseline to be used for reporting in Columns 7b and 7d of NASA Form 533M (See Exhibit A).

H.14 EXPORT LICENSES (NFS 1852225-70) (FE 2000)

(a) The Contractor shall comply with all U.S. export control laws and regulations, including the international Traffic in Arms Regulations (ITAR), 22 CFR Parts 120 through 130, and the Export Administration Regulations (EAR), 15 CFR Parts 730 through 799, in the performance of this contract. In the absence of available license exemptions/exceptions, the Contractor shall be responsible for obtaining the appropriate licenses or other approvals, if required, for exports of hardware, technical data, and software, or for the provision of technical assistance.

(b) The Contractor shall be responsible for obtaining export licenses, if required, before utilizing foreign persons in the performance of this contract, including instances where the work is to be performed on-site at NASA Langley Research Center, where the foreign person will have access to export-controlled technical data or software.

(c) The Contractor shall be responsible for all regulatory record keeping requirements associated with the use of licenses and license exemptions/exceptions.

(d) The Contractor shall be responsible for ensuring that the provisions of this clause apply to its subcontractors.

PART II - CONTRACT CLAUSES

SECTION I - CONTRACT CLAUSES

I.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE

NOTICE: The following contract clauses pertinent to this section are hereby incorporated by reference:

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

CLAUSE NUMBER	DATE	TITLE
52.202-1	DEC 2001	DEFINITIONS
52.203-3	APR 1984	GRATUITIES
52.203-5	APR 1984	COVENANT AGAINST CONTINGENTFEES
52.203-6	JUL 1995	RESTRICTIONS ON SUBCONTRACTOR SALES TO THE GOVERNMENT
52.203-7	JUL 1995	ANTI-KICKBACK PROCEDURES
52.203-8	JAN 1997	CANCELLATION, RESCISSION AND RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY
52.203-10	JAN 1997	PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY
52.203-12	JUN 2003	LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS
52.204-4	AUG 2000	PRINTED OR COPIED DOUBLE-SIDED ON RECYCLED PAPER
52.209-6	JUL 1995	PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT
52.215-2	JUN 1999	AUDIT AND RECORDS--NEGOTIATION
52.215-8	OCT 1997	ORDER OF PRECEDENCE - UNIFORM CONTRACT FORMAT
52.215-11	OCT 1997	PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA-- MODIFICATIONS
52.215-13	OCT 1997	SUBCONTRACTOR COST OR PRICING DATA MODIFICATIONS
52.215-14	OCT 1997	INTEGRITY OF UNIT PRICES
52.215-15	DEC 1998	PENSION ADJUSTMENTS AND ASSET REVERSIONS
52.215-18	OCT 1997	REVERSION OR ADJUSTMENT OF PLANS FOR POSTRETIREMENT BENEFITS (PRB) OTHER THAN PENSIONS
52.215-19	OCT 1997	NOTIFICATION OF OWNERSHIP CHANGES

52.215-21	OCT 1997	REQUIREMENTS FOR COST OR PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA -- MODIFICATIONS (ALTERNATE IV) (OCT 1997)
	Insert (b)	Provide information described below:
52.216-7	DEC 2002	ALLOWABLE COST AND PAYMENT
52.216-8	MAR 1997	FIXED FEE
52.219-8	OCT 2000	UTILIZATION OF SMALL BUSINESS CONCERNS
52.219-9	JAN 2002	SMALL BUSINESS SUBCONTRACTING PLAN (ALTERNATE II) (OCT 2001)
52.219-16	JAN 1999	LIQUIDATED DAMAGES SUBCONTRACTING PLAN
52.222-1	FEB 1997	NOTICE TO THE GOVERNMENT OF LABOR DISPUTES
52.222-2	JUL 1990	PAYMENT FOR OVERTIME PREMIUMS
52.222-3	JUN 2003	Insert "\$0 (Zero)" in paragraph (a) CONVICT LABOR
52.222-21	FEB 1999	PROHIBITION OF SEGREGATED FACILITIES
52.222-26	APR 2002	EQUAL OPPORTUNITY
52.222-35	DEC 2001	EQUAL OPPORTUNITY FOR SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS
52.222-36	JUN 1998	AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES
52.222-37	DEC 2001	EMPLOYMENT REPORTS ON SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS
52.223-6	MAY 2001	DRUG-FREE WORKPLACE
52.223-14	AUG 2003	TOXIC CHEMICAL RELEASE REPORTING
52.225-13	DEC 2003	RESTRICTIONS ON CERTAIN FOREIGN PURCHASES
52225-16	FEB 2000	SANCTIONED EUROPEAN UNION COUNTRY SERVICES
52.227-1	JUL 1995	AUTHORIZATION AND CONSENT (ALTERNATE I) (APR 1984)
52.227-2	AUG 1996	NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT
52.227-14	JUN 1987	RIGHTS IN DATA--GENERAL ALTERNATE II (JUN 1987) ALTERNATE III (JUN 1987) AS MODIFIED BY 1852.227-14 NASA FAR SUPPLEMENT (OCT 1995)
52.228-7	MAR 1996	INSURANCE--LIABILITY TO THIRD PERSONS
52.230-2	APR 1998	COST ACCOUNTING STANDARDS
52.230-3	APR 1998	DISCLOSURE AND CONSISTENCY OF COST ACCOUNTING PRACTICES
52.230-6	NOV 1999	ADMINISTRATION OF COST ACCOUNTING

			STANDARDS
II.	52.232-9	APR 1984	LIMITATION ON WITHHOLDING OF PAYMENTS
	52.232-17	JUN 1996	INTEREST
	52.232-22	APR 1984	LIMITATION OF FUNDS
	52.232-23	JAN 1986	ASSIGNMENT OF CLAIMS
	52.232-25	OCT 2003	PROMPT PAYMENT
	52.232-34	MAY 1999	PAYMENT BY ELECTRONIC FUNDS TRANSFER-- OTHER THAN CENTRAL CONTRACTOR REGISTRATION
	Insert <u>no later than 15 days prior to submission</u> <u>of the first request for payment</u> in Paragraph (b) (1)		
	52.233-1	JUL 2002	DISPUTES (ALTERNATE I) (DEC 1991)
	52.233-3	AUG 1996	PROTEST AFTER AWARD (ALTERNATE I) (JUN 1985)
	52.242-1	APR 1984	NOTICE OF INTENT TO DISALLOW COSTS
	52.242-3	MAY 2001	PENALTIES FOR UNALLOWABLE COSTS
	52.242-4	JAN 1997	CERTIFICATION OF FINAL INDIRECT COSTS
	52.242-13	JUL 1995	BANKRUPTCY
	52.243-2	AUG 1987	CHANGES--COST-REIMBURSEMENT (ALTERNATE V) (APR 1984)
	52.244-5	DEC 1996	COMPETITION IN SUBCONTRACTING
	52.244-6	APR 2003	SUBCONTRACTS FOR COMMERCIAL ITEMS
	52.245-5	JUN 2003	GOVERNMENT PROPERTY (COST REIMBURSEMENT, TIME-AND- MATERIAL, OR LABOR-HOUR CONTRACTS)
	52.246-23	FEB 1997	LIMITATION OF LIABILITY
	52.247-1	APR 1984	COMMERCIAL BILL OF LADING NOTATIONS
	52.249-6	SEP 1996	TERMINATION (COST-REIMBURSEMENT)
	52.249-14	APR 1984	EXCUSABLE DELAYS
	52.253-1	JAN 1991	COMPUTER GENERATED FORMS

NASA FAR SUPPLEMENT (48 CFR CHAPTER 18) CLAUSES

CLAUSE NUMBER	DATE	TITLE
1852.203-70	JUN 2001	DISPLAY OF INSPECTOR GENERAL HOTLINE POSTERS
1852.216-89	JUL 1997	ASSIGNMENT AND RELEASE FORMS
1852.219-74	SEP 1990	USE OF RURAL AREA SMALL BUSINESSES
1852.219-76	JUL 1997	NASA 8 PERCENT GOAL
1852.227-70	MAY 2002	NEW TECHNOLOGY
1852.235-70	FEB 2003	CENTER FOR AEROSPACE INFORMATION
1852.243-71	MAR 1997	SHARED SAVINGS

1.2 CLAUSES IN FULL TEXT

The clauses listed below follow in full text:

CLAUSE NUMBER	DATE	TITLE
52.216-18	OCT 1995	ORDERING
52.216-19	OCT 1995	ORDER LIMITATIONS

52.216-22	OCT 1995	INDEFINITE QUANTITY
52.219-4	JAN 1999	NOTICE OF EVALUATION PREFERENCE FOR HUBZONE SMALL BUSINESS CONCERNS
52.219-23	JUN 2003	NOTICE OF PRICE EVALUATION ADJUSTMENT FOR SMALL DISADVANTAGED BUSINESS CONCERNS
52.219-25	OCT 1999	SMALL DISADVANTAGED BUSINESS PARTICIPATION PROGRAM-DISADVANTAGED STATUS AND REPORTING
52.252-2	FEE 1998	CLAUSES INCORPORATED BY REFERENCE
52.252-6	APR 1984	AUTHORIZED DEVIATIONS IN CLAUSES
1852.219-75	MAY 1999	SMALL BUSINESS SUBCONTRACTING REPORTING

1.3 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 contract award through 60 months from the effective date of the contract.

(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.

1.4 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 \$1,000, 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 \$20,000,000;
- (2) Any order for a combination of items in excess of \$20,000,000; 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) of this section.

(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)** of this section.

(d) Notwithstanding paragraphs (b) and (c) of this section, 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 10 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.

1.5 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 6 months from the end of the contract period of performance.

1.6 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.

o Offer 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 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.

1.7 NOTICE OF PRICE EVALUATION ADJUSTMENT FOR SMALL DISADVANTAGED BUSINESS CONCERNS (FAR 52.219-23) (MAY 2001)

(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 part 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 identified, on the date of its representation, as a certified small disadvantaged business concern in the database maintained by the Small Business Administration (PRO-Net)

(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 part 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. 1067k including, a Hispanic-serving institution of higher education, as defined in Section 316(b) (1) of the Act (20 U.S.C. 1101a)).

'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) The Contracting Officer will evaluate offers by adding a factor of 10 (TEN) percent to the price of all offers, except--

(i) Offers from small disadvantaged business concerns that have not waived the adjustment;

(ii) An otherwise successful offer 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))

(iii) An otherwise successful offer where application of the factor would be inconsistent with a Memorandum of Understanding or other international agreement with a foreign government;

(iv) For DoD, NASA, and Coast Guard acquisitions, an otherwise successful offer from a historically black college or university or minority institution; and

(v) For DoD acquisitions, an otherwise successful offer of qualifying country end products (see sections 225.000-70 and 252.225-7001 of the Defense FAR Supplement)

(2) The Contracting Officer will apply the factor to a line item =.a group of line items on which award may be made. The Contracting Officer will apply other evaluation factors described in the solicitation 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.

0 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.

1.8 SMALL DISADVANTAGED BUSINESS PARTICIPATION PROGRAM – DISADVANTAGED STATUS AND REPORTING (FAR 52.219-25) (OCT 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 identified as a certified small disadvantaged business in the database maintained by the Small Business Administration (PRO-Net) 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.

1.9 RIGHTS TO PROPOSAL DATA (TECHNICAL) (FAR 52.227-23) (JUN 1987)

Except for data contained on pages (entire proposal), 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 March 8, 2004 upon which this contract is based.

1.10 SUBCONTRACTS (FAR 52.244-2) (AUG 1998) (ALTERNATE I) (AUG 1998)

(a) **Definitions. As used in this clause--**

'Approved purchasing system' means a Contractor's purchasing system that has been reviewed and approved in accordance with Part 44 of the Federal Acquisition Regulation (FAR)

"Consent to subcontract" means the Contracting Officer's written consent for the Contractor to enter into a particular subcontract.

"Subcontract" means any contract, as defined in FAR Subpart 2.1, entered into by a subcontractor to furnish supplies or services for performance of the prime contract or a subcontract. It includes, but is not limited to, purchase orders, and changes and modifications to purchase orders.

(b) This clause does not apply to subcontracts for special test equipment when the contract contains the clause at FAR 52.245-18, Special Test Equipment.

(c) When this clause is included in a fixed-price type contract, consent to subcontract is required only on unpriced contract actions (including unpriced modifications or unpriced delivery orders), and only if required in accordance with paragraph (d) or (e) of this clause.

(d) If the Contractor does not have an approved purchasing system, consent to subcontract is required for any subcontract that--

1) Is of the cost-reimbursement, time-and-materials, or labor-hour type; or,

(2) Is fixed-price and exceeds-

(i) For a contract awarded by the Department of Defense, the Coast Guard, or the National Aeronautics and Space Administration, the greater of the simplified acquisition threshold or 5 percent of the total estimated cost of the contract; or

(ii) For a contract awarded by a civilian agency other than the Coast Guard and the National Aeronautics and Space Administration, either the simplified acquisition threshold or 5 percent of the total estimated cost of the contract.

(e) If the Contractor has an approved purchasing system, the Contractor nevertheless shall obtain the Contracting Officer's written consent before placing the following subcontracts:

(f) (1) The Contractor shall notify the Contracting Officer reasonably in advance of placing any subcontract or modification thereof for which consent is required under paragraph (c), (d), or (e) of this clause, including the following information:

(i) A description of the supplies or services to be subcontracted.

(ii) Identification of the type of subcontract to be used.

(iii) Identification of the proposed subcontractor.

(iv) The proposed subcontract price.

(v) The subcontractor's current, complete, and accurate cost or pricing data and Certificate of Current Cost or Pricing Data, if required by other contract provisions.

(vi) The subcontractor's Disclosure Statement or Certificate relating to Cost Accounting Standards when such data are required by other provisions of this contract.

(vii) A negotiation memorandum reflecting-

(A) The principal elements of the subcontract price negotiations;

(B) The most significant considerations controlling establishment of initial or revised prices;

(C) The reason cost or pricing data were or were not required;

(D) The extent, if any, to which the Contractor did not rely on the subcontractors cost or pricing data in determining the price objective and in negotiating the final price;

(E) The extent to which it was recognized in the negotiation that the subcontractor's cost or pricing data were not accurate, complete, or current; the action taken by the Contractor and the subcontractor; and the effect of any such defective data on the total price negotiated;

(F) The reasons for any significant difference between the Contractors price objective and the price negotiated; and

(G) A complete explanation of the incentive fee or profit plan when incentives are used. The explanation shall identify each critical performance element, management decisions used to quantify each

incentive element, reasons for the incentives, and a summary of all trade-off possibilities considered.

(2) If the Contractor has an approved purchasing system and consent is not required under paragraph (c), (d), or (e) of this clause, the Contractor nevertheless shall notify the Contracting Officer reasonably in advance of entering into any (i) cost-plus-fixed-fee subcontract, or (ii) fixed-price subcontract that exceeds the greater of the simplified acquisition threshold or 5 percent of the total estimated cost of this contract. The notification shall include the information required by paragraphs (f) (1) (i) through (f) (1) (iv) of this clause.

(g) Unless the consent or approval specifically provides otherwise, neither consent by the Contracting Officer to any subcontract nor approval of the Contractor's purchasing system shall constitute a determination---

(1) Of the acceptability of any subcontract terms or conditions;

(2) Of the allowability of any cost under this contract; or

(3) To relieve the Contractor of any responsibility for performing this contract.

(h) No subcontract or modification thereof placed under this contract shall provide for payment on a cost-plus-a-percentage-of-cost basis, and any fee payable under cost-reimbursement type subcontracts shall not exceed the fee limitations in FAR 15.404-4(c) (4) (i)

(i) The Contractor shall give the Contracting officer immediate written notice of any action or suit filed and prompt notice of any claim made against the Contractor by any subcontractor or vendor that, in the opinion of the Contractor, may result in litigation related in any way to this contract, with respect to which the Contractor may be entitled to reimbursement from the Government.

(j) The Government reserves the right to review the Contractor's purchasing system as set forth in FAR Subpart 44.3.

(k) Paragraphs (d) and (f) of this clause do not apply to the following subcontracts, which were evaluated during negotiations:

I.11 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):

ttp: // www.arnet.gov/far/

http: / / [www.hq.nasa.gov/office/procurement/regs/nfstoc](http://www.hq.nasa.gov/office/procurement/regs/nfstoc.htm) .htm_

1.12 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 (48 CFR Chapter clause with an authorized deviation is indicated by the addition of (DEVIATION)" after the name of the regulation.

I.13 OMBUDSMAN (NFS 1852.215-84) (JON 2000) (ALTERNATE I) (JON 2000)

(a) An ombudsman has been appointed to hear and facilitate the resolution of concerns from of ferors, 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.

(b) If resolution cannot be made by the contracting officer, interested parties may contact the installation ombudsman, Christine Darden, direct inquires to Panice H. Clark, NASA Langley Research Center, Nail Stop 134, Hampton, VA 23681-2199; phone (757) 864-2522; facsimile (757) 864-8541; email p.h.clark@larc.nasa.gov.

Concerns, issues, disagreements, and recommendations which cannot be resolved at the installation may be referred to the NASA ombudsman, the Director of the Contract Management Division, at 202-358-0477, facsimile 202-358-3083, e-mail Anne.C.Guenther@hq.nasa.gov. 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

(c) If this is a task or delivery order contract, the ombudsman shall review complaints from contractors and ensure they are afforded a fair opportunity to be considered, consistent with the procedures of the contract.

**1.14 SMALL BUSINESS SUBCONTRACTING REPORTING (NFS 1852.219 -75)
(MAY 1999)**

(a) The Contractor shall submit the Summary Subcontract Report (Standard Form (SF) 295) semiannually for the reporting periods specified in block 4 of the form. All other instructions for SF 295 remain in effect.

(b) The Contractor shall include this clause in all subcontracts that include the clause at FAR 52.219-9.

PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACHMENTS

SECTION J - LIST OF ATTACHMENTS

J.1 CONTRACT DOCUMENTATION REQUIREMENTS

Exhibit A	Contract Documentation Requirements
Exhibit B	Safety and Health Plan
Exhibit C	Subcontracting Plan

EXHIBIT A - CONTRACT DOCUMENTATION REQUIREMENTS**A. Monthly Financial Management Report**

1. The Contractor shall submit a monthly financial management report as provided by the Section G clause entitled "NASA Financial Management Reporting." This report shall be submitted utilizing NASA Form 533M, Monthly Contractor Financial Management Report, in accordance with submission instructions contained on the reverse side of the form.
2. For this task order contract, a 533M shall be provided for the levels indicated below:
 - a. Each Authorized Task
 - b. Contract Total. (Column 9b shall reflect total estimated cost of \$# plus fixed fee of \$#.)
 - c. Due not later than the 10th operating day following the close of the Contractors accounting period being reported.
 - d. Each NF533M shall include a narrative explanation for variances exceeding +/-5 percent between estimated dollars shown in the prior month and actual dollars shown in the current month at the total contract level. (For example, the estimated dollars shown for June in column 8a in the May 533M and the actual June dollars shown in column 2a in the June 533M.)
3. The following minimum reporting categories shall be included in column 6 of this report.

Minimum reporting categories shall include:

- a. Direct Labor Hours
- b. Direct Labor Dollars
- c. Overhead (s)
- d. Subcontract
- e. Material
- f. Other Direct Cost
- g. G&A
- h. Total Estimated Cost
- i. Fee
- j. Total Estimated Cost and Fee

B. Monthly Technical Letter Progress Report -- The Contractor shall submit monthly technical letter reports for each task order describing progress of the task to date, noting all technical areas in which effort is being directed and indicating the status of work within these areas. Tasks may be summarized in one letter report, unless otherwise stipulated in individual task orders. Reports shall be in

narrative form, brief and informal in content. These reports shall include:

1. A narrative statement of work accomplished during the report period.
2. A statement of current and potential problem areas and proposed corrective action.
3. A discussion of work to be performed during the next report period.

The monthly progress report shall be submitted within 10 days after the end of each calendar monthly report period. A monthly report shall not be required for the period in which the final report is due.

C. Final Reports - Each task order may require the Contractor to submit a final report, either formal or informal, which documents and summarizes the results. When a formal final Contractor report is required, it shall be submitted in accordance with the instructions contained in NASA FAR Supplement clause 1852.235-73, Final Scientific and Technical Reports. The specified number of approval copies shall be submitted within the time specified in the task orders.

D. Property in the Custody of Contractors (NASA. FOAM 1018) -- The Contractor shall submit the NASA Form 1018 no later than October 15th of each year in accordance with the Section G clause entitled "Financial Reporting of NASA Property in the Custody of Contractors."

E. Subcontracting Reports [Applicable to Large Businesses only]

a. 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 forms.

In addition to the instructions on the reverse of the SF 295, the Contractor is required to comply with NFS Clause 1852.219-75, Small Business Subcontracting Reporting.

b. The Contractor shall submit an SDB Participation Report in accordance with the Section I FAR Clause 52.219-25, Small Disadvantaged Business Program - Disadvantaged Status and Reporting. This report shall be submitted within 30 days after the end of each contract year.

F. Quality Plan - Within 30 calendar days after the effective date of the contract, the Contractor shall submit a quality plan that addresses how the contract quality requirements will be met. The plan and subsequent revisions will be reviewed and approved by the Contracting Officer or the designated representative.

G. Quality System Documents (ISO 9001) - The Contractor shall submit the following ISO-compliant documents in accordance with H.9 no later than nine months from the effective date of contract:

1. Quality System Manual
2. Quality System Procedures - These procedures shall address:
 - (1) contract and subcontract 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, preventive, and continuing improvement action system, (7) training of employees, and (8) customer satisfaction/performance measurement.

H. 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.

[Paragraphs J, K, and L are applicable to large businesses]

J. Interim New Technology report - After the first anniversary date of the contract, the Contractor shall submit an annual list of subject inventions, certify that all subject inventions have been disclosed (or that there are no such inventions), and certify that the procedures required by paragraph (e)(1) of the New Technology clause have been followed as set forth in NFS 1852.227-70. This report is due by March 31 of each year.

K. Final New Technology report - The Contractor shall submit a list of subject inventions or certify that there were no such subject inventions, and list all subcontracts at any tier containing a patent rights clause or certify that there were no such subcontracts as set forth in NFS 1852.227-70. This report is due within 3 months after completion of the contracted work.

L. Invention disclosure reporting - The Contractor shall disclose each subject invention under the contract as set forth in NFS 1852.227-70. The electronic or paper version of NASA Form 1679, Disclosure of Invention and New Technology (Including Software) may be used for this reporting. Both the electronic and paper versions of this form may be accessed at <http://invention.nasa.gov>. Disclosures are required within two months after the inventor discloses it in writing to Contractor personnel who are responsible for the administration of the New Technology clause.

[Paragraphs M, N, and O are applicable to small businesses and nonprofit organizations]

M. Interim patent rights report - After the first anniversary date of the contract, the Contractor shall submit an annual list of all subject inventions to be disclosed as set forth in FAR 52.227-ii (as modified by 1852.227-11). This report is due by March 31 of each year.

N. Final patent rights report - The Contractor shall submit a listing of all subject inventions or certify that there were none as set forth in FAR 52.227-ii (as modified by 1852.227-11). This report is due prior to contract closeout.

O. Invention disclosure reporting - The Contractor shall disclose each subject invention under the contract as set forth in FAR 52.227-11 (as modified by 1852.227-11). The electronic or paper version of NASA Form 1679, Disclosure of Invention and New Technology (Including Software) may be used for this reporting. Both the electronic and paper versions of this form may be accessed at <http://invention.nasagov>. Disclosures are required within two months after the inventor discloses it in writing to Contractor personnel who are responsible for patent matters.

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: Tianda M. Sherrell, Mail Stop 126
Contract - TBD
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:

1. A--Contract Specialist, Mail Stop 126
2. B--Contracting Officer Technical Representative, Mail Stop 188E
3. C--New Technology Representative, Mail Stop 212
4. D--Cost Accounting, NF533@nasa.gov
5. G--Office of Chief Financial Officer. Mail Stop 104
6. H--Patent Counsel, Mail Stop 212
7. I---Industrial Property Office, Nail Stop 377
8. J--Small Business Specialist, Mail Stop 134
9. L--According to instructions on form
10. M--As required by Task Order
11. N--Task Monitor
12. O--Langley Management System Project Office, Mail Stop 438
13. P-- Center STI Publication Manager, Nail Stop 196
14. Q-- Industry Assistance Representative, Mail Stop 144

C. The following are the distribution requirements for reports and other documentation required to be delivered f.o.b. destination. The numeral following the letter code specifying the number of copies to be provided:

LETTER CODE AND DOCUMENT: DISTRIBUTION

1. Financial Management Report (NASA Forms 533M) : A-i, B-2, D-2, O-1
2. Monthly Technical Letter Progress Report: A-I, B-2, M-I, N-1
3. New Technology/ Patent Report: A-i, B-i, C-i, H-I
4. Invention Disclosure Report: A-i, B-i, C-i, H-I
5. Report of Property in the Custody of Contractors (NASA Form 1018): I

6. Subcontracting Report for Individual Contracts (Standard Form 294) and SDB Participation Report (Optional Form 312) : A-i, 5-1, Q-i, L
7. Summary Subcontractor Report (Standard Form 295) L
8. Federal Contractor Veterans Employment Report (**VETS-100**): L
9. Quality Plan: A-i, B-i, O-i
10. Quality System Documents: A-i, B-i, O-i
- ii. Informal Final Report: A-i, 13-2, C-i, H-i,
12. Formal Final Report: As specified by the Contracting Officer
13. Copy of formal final report cover letter: P-1
13. When the Contract Specialist (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 Specialist. If delegated, the Contractor shall also furnish a copy of the transmittal letter and a copy of each Financial Management Report to the delegated Administrative Contracting Officer of the cognizant DoD (or other agency) contract administrative services component.

**Structures & Materials and Aerodynamic,
Aerothermodynamic & Acoustics Technology for
Aerospace Vehicles (SMAAAT)**

EXHIBIT B

**Safety and Health Plan
NASA Solicitation 1-LDF-4200024660**

**Submitted To:
NASA Langley Research Center
9A Langley Boulevard, Building 1195B, Room 105
NASA Langley Research Center
Hampton, VA 23681-2199**

March 8, 2004

**Prime Contractor:
LOCKHEED MARTIN CORPORATION
LOCKHEED MARTIN AERONAUTICS COMPANY**

NT04-003

SAFETY AND HEALTH PLAN

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Lockheed Martin Aeronautics Company Safety and Health Plan

Lockheed Martin Aeronautics Company's Palmdale (LM AERO-Palmdale) safety and health plan shows how we will protect the life, health, and well-being of NASA and contractor employees as well as property and equipment. This plan discusses the policies, procedures, and techniques used to ensure the safety and health of LM AFRO-Palmdale employees and to ensure safe all working conditions throughout the performance of the contract. The plan also addresses safety and health for subcontractor employees.

Also, when applicable, the plan addresses the policies, procedures, and techniques used to ensure the safety and health of NASA employees and the public.

(NOTE: Lockheed Martin Aeronautics Company meets OSHA Voluntary Protection Program (VP?) requirements, and the Palmdale site is certified by the State of California's Division of Occupational Safety and Health as a VP? STAR Site.)

1.0 MANAGEMENT LEADERSHIP AND EMPLOYEE PARTICIPATION.

1.1 Policy.

Lockheed Martin's Corporate safety policy statement (**CPS-0 15**) states "Lockheed Martin Corporation is committed to conducting its operations in a manner that provides safe and healthful working conditions for employees, contractors and visitors, protects the environment and conserves natural resources. Accordingly, Lockheed Martin will:

- Institute environment, safety & health (ESH) management systems that minimize risk, ensure ongoing compliance with applicable; laws and regulations, and promote continual improvement of ESH performance and management systems;
- Integrate ESH considerations into business operations, including but not limited to: product design, services, procurement, manufacturing, joint ventures, property renovation/rearrangement, and business and property acquisitions, consolidations and divestitures;
- Share ESH best practices and lessons learned among Lockheed Martin business units and entities;
- Ensure that employees are aware of ESH responsibilities in their jobs and encourage every employee to take responsibility for ESH performance;
- Respond to employee, community, customer and regulatory agency concerns regarding potential ESH impact from Lockheed Martin operations, as appropriate; and
- Participate in public policy processes to promote the development of ESH laws and regulations that are protective of human health and the environment and consistent with sound science and risk assessment principles."

Safety & Health develops annual objectives to improve workplace safety programs. Progress on those objectives is tracked in Safety & Health staff meetings and in regular ESH Manager's meetings. The objectives are reflected in the ESH Branch Director's objectives, which are submitted to LM AERO's President. Often, ESH develops joint objectives with other organizations (Human

Resources, Procurement, etc.). Where appropriate, Safety & Health meets with the management of other organizations to develop implementation plans. In turn, these organizations will assign actions to the appropriate management in their own organizations.

1.2 Goals and Objectives.

LM AERO and Lockheed Martin Corporate have jointly established company -specific injury goals that, in turn, generate LM Aeronautics Company's goals. These goals flow down through site general managers and functional/program heads. Each site tracks progress on these goals monthly. Safety & Health site managers meet regularly to report on progress, and discuss innovative ways to accomplish these goals

1.3 Management Leadership

The senior management of the Lockheed Martin Aeronautics Company remains committed to reducing injuries. In addition to Lockheed Martin Corporate injury reduction goals, Lockheed Martin Aeronautics Company has established an injury reduction objective, which flows down to all programs and functional management. We publish injury rates and regularly track performance. In 2001, we met all company injury goals.

LM AERO Palmdale's Vice President and Site General Manager, Rick Baker, fully supports VPP and safety & health programs:

Lockheed Martin Aeronautics Company, Palmdale is committed to providing outstanding safety and health protection for our employees through employee involvement and effective management systems. We are also committed to continuously improve our management systems, reducing workplace-related injuries and illnesses, and achieving and maintaining the Cal/Star Program requirements.

Our company also agrees to correct, in a timely manner, hazards identified through self inspection, employee reports or accident investigations. We will provide the results of self inspections to our employees upon request. Any employees with safety-related duties will be protected from discriminatory actions (including unofficial harassment) arising from their performance of those duties.

We agree to provide the information listed in the attachment to this statement during CalJOSHA's on-site reviews and during the period of our participation in the program. Each year, on request, we will provide CalJOSHA our annual injury incidence and lost workday case rates, hours worked, estimated average employment for the past calendar year, and the results of our safety and health program evaluation.

1.4 Employee Involvement.

Employee participation plays an important role in the success of LM AERO's Safety & Health Program. Employees are involved in many ways, including conducting safety inspections, participating in safety committees, making safety suggestions, reporting and correcting hazards, attending monthly safety meetings, and participating in the SAFTE program.

The company stresses that safety is part of every employee's job. Employees are responsible for being alert to potential hazards from chemicals, equipment, and machinery, for immediately reporting hazards to supervision, for ensuring that guards and other safety devices are in use, for using required personal protective equipment, and for performing work safely.

Besides notifying the supervisor or manager of the need to correct a safety problem, an employee may submit a trouble call to the Facilities Trouble Desk. Items submitted as "safety trouble calls" (i.e., posing an immediate hazard) receive immediate attention. Employees can also report hazards anonymously by calling or submitting a written notice to Safety & Health. They may also report the concern to the General Safety Committee member, or to the Building Manager

Supervisors are required to hold monthly safety meetings with their employees. Safety & Health annually publishes a safety meeting topic schedule and provides training materials for each topic. These meetings provide, among other things, a forum for employees to report and discuss safety concerns.

SAFTE Team Program

The Safety Awards for Team Excellence (SAFTE) program is open to employees working in either factory or factory support jobs. The program is not a "traditional give-away" incentive program, and does not focus just on preventing injuries. Rather, it incorporates behavioral safety principle and encourages suggestions and other activities that positively impact workplace safety. It is based on a team concept, with employees from similar jobs working together to improve safety in their areas. Each team has a team leader and a coach from management. Points are awarded to teams for activities that improve workplace safety, such as submitting safety suggestions and developing lists of safe practices specific to their jobs. Points are subtracted for occupational injuries and illnesses. At the end of each 6-month period, the most effective teams receive significant awards. A team faces disqualification if there is evidence establishing the non-reporting of recordable injuries.

The SAFTE Program includes an active safety suggestion process. Team members submit suggestions on improving workplace safety to Safety & Health. Suggestions that meet the award criteria (clearly state the issue, suggest a fix, and provide significant improvement in safety) are awarded points. Since the program began in January 1997, team members have submitted over 4,000 suggestions.

The goal of the program is to get employees involved, working together to find and fix problems and to take an interest in the safety of their fellow employees. Employee involvement, as demonstrated in the SAFTE Program, has been a key factor in the overall success of LM AERO's Injury and Illness Prevention Program.

In 2001, the Safety Awards for Team Excellence (SAFTE) Program completed its 5th successful year with 466 members on 25 teams. The program differs from traditional "incentive" programs, in that it focuses on teamwork and taking proactive measures (not just on low injury rates, which could encourage non-reporting of injuries). We encourage teams to develop safe work practices, pass audits, and submit suggestions that improve workplace safety. In the past 5 years, SAFTE teams have submitted over 4,100 suggestions. Teams present their best suggestions to groups such as the General Safety Committee and Building Managers, for possible implementation in other areas.

General Safety Committee

The original Lockheed General Safety Committee was established in 1947, and has been continuously active since. The Committee continues to be a major tool for two-way communication with our workforce. It encourages its members to actively seek out actual or potential unsafe conditions, and take immediate action to correct them. If a condition remains, the aware member must bring it to the Safety Committee for appropriate action. Members are also encouraged to participate in accident/incident investigations, and to perform monthly inspections of their work areas to identify potential hazards. Also, the Committee asks members to participate on subcommittees - Training, Inspections, Communications, and Recognition. A union member now co-chairs the Committee.

Senior management appoints the General Safety Committee (GSC) chairperson. The GSC meets monthly. The Committee is made up of bargaining unit and management representatives. There are currently approximately 30 active members. The Union selects Collective bargaining unit members, either by direct appointment or election. The appointees represent a cross-section of LM AERO areas/buildings. Senior management appoints management members to the GSC. In addition, independent safety committees exist across the facility to support LM AERO's General Safety Committee. The site committees meet monthly; they publish the meeting's minutes.

The General Safety Committee's (GSC) role is to:

- Provide a forum for labor and management to communicate on matters concerning workplace safety or health and to proactively identify and resolve actual or potential hazards in the workplace.
- Enhance injury and illness prevention programs by providing training to GSC members on effectively identifying potential safety or health concerns.
- Promote safety and health in the workplace, including recognition of individuals for positive contributions to injury and illness prevention.

The committee members perform the following functions:

- Serve as safety representatives for their assigned areas;
- Encourage safe work practices among fellow employees;
- Conduct building inspections
- Review significant injuries/illnesses
- Submit recommendations to the committee for recognition of individuals or groups demonstrating outstanding achievement in safety
- Attend monthly committee meetings
- Discuss environmental, safety, and health issues requiring corrective action
- Suggest ways to improve workplace safety and health, such as through engineering controls, modified work tools, and use of personal protective equipment.

General Safety Committee members must conduct periodic inspections of their assigned areas to monitor safety and health performance. Safety & Health has developed an inspection checklist for the members to use. After inspections, GSC members inform area management of their findings so corrective action can be taken. GSC members are encouraged to contact Safety & Health if they feel

unsure whether a hazard has been corrected or addressed satisfactorily. At the monthly meetings, GSC members can raise safety or health concerns if they are still unsure of the status. GSC members are often asked to focus on a specific type of items during their inspections, and to report on their inspection findings during the meetings.

Training

GSC members receive training on hazard recognition and other relevant safety and health subjects during GSC meetings, or at semi-annual sessions conducted by Safety & Health staff. During monthly GSC meetings, safety training topics are covered, including: Hazard Communication, Lifting Techniques, Machine Safeguarding, Respirator Usage, Noise Hazards, Electrical Safety, Lockout/Tagout, Fire Safety, Ventilation Systems, Back Safety, Hand Protection, Hazardous Spills, and Emergency Action Plans.

Meetings

The GSC meets monthly. The Chairperson chairs the meetings. During a meeting, there is discussion regarding company injury and illness statistics and trends. The GSC reviews recent accidents and inspection/audit results. Safety & Health generally presents short topics on relevant subjects for discussion. GSC subcommittees report on their activities. Guest speakers sometimes speak on appropriate topics. The meetings usually finish with a review of open action items. Then, each member has a chance to bring up new concerns for discussion and resolution.

After each meeting, the GSC publishes the meeting's minutes. The minutes describe the agenda items, past action items with closure status, and new action items with corrective action assignments. Each member and meeting attendees receive a copy of the minutes. Members of senior management also receive the GSC meeting minutes.

1.5 Assignment of Responsibility.

LM AERO has committed resources to support the Safety & Health needs of the company. The Safety & Health Department staff, the Building Managers, contractors and Corporate resources all fulfill significant roles.

a

The Safety & Health Manager (Jeffrey Ho, 661-572) adherence to safety, **health, and fire protection concerns and** goals, and who will ensure appropriate participation in meetings and other activities related to its Safety & Health program. He will also be the Designated Safety Official responsible for implementation of this plan and all formal contacts with regulatory agencies and with NASA.

Safety & Health has a staff of 12 full-time professionals, plus one part-time contractor. The staff includes one manager, one chemist/hazardous materials specialist, four safety engineers (including one Certified Safety Professional), two industrial hygienists (one a Certified Industrial Hygienist), one part-time contract industrial hygienist (also a CH-1), one fire chief and two fire prevention specialists

In addition, there are approximately 60 Building Managers (not directly reporting to or funded by ESH) who provide a critical role in the company's safety program. They function as the Building Fire Wardens, maintain building emergency action plans (to facilitate evacuations during fires and other emergencies), conduct regular inspections to identify and correct workplace hazards, and

disseminate ESH-related information. They serve as points of contact for emergency planning and response officials and their representatives.

Where there is a special need, Safety & Health contracts with outside contractors to provide services. Contractors monitor asbestos and manage asbestos removal projects, monitor lead abatement, etc.

In addition, Lockheed Martin's Corporate fiSH organization has a wide range of safety and health expertise to draw from. It has developed a list of subject matter experts throughout the corporation to facilitate information exchange. It is also available to perform on-site consultation and training on ninny subjects.

The Safety & Health Dept. performs a wide range of functions. It provides traditional safety engineering and industrial hygiene services, including conducting inspections to identify hazards, evaluating those hazards, and recommending controls. Industrial hygienists perform I.H. monitoring using company owned and calibrated direct reading instruments (noise meters, oxygen/gas meters, etc.) or collect samples and send them to an off-site AIHA-certified contract laboratory for analysis.

b. Medical

LM AERO's on-Site Medical department has one occupational physician (Dr. Jaime Santos, 661 -5722191), one medical coordinator, three occupational nurses (including two registered nurses and one licensed nurse) and one part-time contract nurse. The company physician will facilitate communication of medical data to NASA as needed. His name, address, and telephone number will be provided to NASA

The Medical Department performs employee physicals, as well as health evaluations and medical monitoring and evaluations required by OSHA regulations. Employee audiograms, spirometry, and chest x-rays are done on-site. Communication between Medical and Safety & Health departments is excellent. Medical immediately notifies Safety & Health whenever there has been a serious injury or illness, or whenever there is any chemically related incident. Safety & Health, Medical, and Workers' Compensation meet at least monthly to discuss ongoing cases and ensure that good coordination exists.

1.6 Provision of Authority.

LM AERO's Safety & Health Plan is consistent with applicable NASA requirements and contractual direction as well as applicable Federal, State, and local regulations. Safety & Health will monitor changes to applicable requirements and meet them as needed, throughout the life of the contract.

1.7 Accountability.

Company policy holds LM AERO managers and supervisors responsible for employee safety and health. The Safety & Health organization assists and supports LM AERO organizations in complying with company safety and health policies and procedures, which in turn ensure compliance with laws and regulations. Management is responsible for identifying and correcting discrepancies, for providing safety information (such as MSDSs and other hazardous material handling information) to workers, for enforcing compliance with rules, and for taking disciplinary action, as needed.

Although the company's primary emphasis is on determining the root cause of injuries and correcting unsafe behavior through proactive means, sometimes employee discipline is appropriate. The intent of any disciplinary action is to correct unacceptable behavior and violations of LM AFRO policies and rules.

Disciplinary action for infractions of safety rules is handled the same as for infractions of any other company rule. Discipline is covered in both Human Resources Directives and in the collective bargaining agreements. Discipline can include:

- Informal Discussion (not posted to employee's record)
- Verbal Warning/Formal Discussion (posted to employee's record)
- Written Criticism or Employee Performance Notice (posted to employee's record)
- Final Written Criticism (this step may be combined with suspension, when deemed appropriate)
- Downgrade (when appropriate)
- Discharge

During accident investigations, Safety & Health will recommend disciplinary action for employees found to have a pattern of misconduct or where there is evidence of intentional infractions of safety rules.

The performances of managers and supervisors are evaluated annually by their own management. Safety & Health compliance is included on annual performance reviews under Ethics. Annual merit increases are based, in part, on these performance appraisals.

Company policy requires every organization to conduct a monthly safety meeting. Every year, Safety & Health publishes a package of safety meeting topics, which contains a schedule. The package includes a short outline for each topic, including review questions to be covered. The questions are to solicit discussion and input from workers. In conducting the meetings, management is also to review accidents that have occurred, recognize employees for contributions to workplace safety, and encourage discussion. In addition to monthly safety meetings, many organizations, especially in Manufacturing and Maintenance, have more frequent crew meetings in which safety issues are discussed.

Every area has a Building Manager, who is responsible for overseeing safety and health. Building managers conduct monthly inspections to identify and correct hazards, and also maintain the building's emergency action plan. Each area also has a General Safety Committee representative, who conducts inspections, often in conjunction with the Building Manager. Employees are encouraged to raise safety concerns to their supervisors or managers, to the Building Manager or GSC representative, or to **Call** Safety & Health directly.

1.8 Program Evaluation.

As part of VPP certification, Safety & Health conducts an annual review of safety management systems. In addition, OSHA conducts a thorough on-site review every 3 years. Safety & Health also annually assesses safety programs to ensure conformance *With* ESH management system (from the ISO 14001 EMS model) requirements. The purpose for this assessment is to determine the effectiveness of the ESH management system program, to identify areas requiring improvement, report the results to senior management, and track corrective action.

Process Integrity, an LM AERO internal auditing organization, conducts stringent reviews of elements of the ESH management system and determines the effectiveness and adequacy of the ESII program. All elements of the system are reviewed within a 3-year cycle. The ESH management system elements include conformance *With*: legal and other requirements; objectives and targets; program implementation and operation; structure and responsibility; training, awareness and

competence; documentation and document control; operational control; emergency preparedness and response; checking and corrective action; monitoring and measurement; nonconformance, corrective and preventive action; records; audit; and, management review. The results of this assessment are presented to LM AERO's senior management to achieve continual improvement and effectiveness.

Lockheed Martin Corporate Environmental Safety & Health also conducts regular audits of operating companies. The audits include many of the ISO/VPP elements (Training, Contractor Safety, Management Systems, Hazard Assessments, Industrial Hygiene Programs, Safety Programs, etc.) If deficiencies are found, the audit team issues findings, and the company submits a corrective action plan, which is closely tracked.

1.9 Documentation.

LM AERO's safety & health procedures are thoroughly documented in its Environmental Safety & Health Manual. The Environmental Safety & Health Manual is the primary source of company safety and health policies, procedures and rules. The Manual is readily accessible through the company's NT computer network. LM AFRO maintains thorough documentation of injury and illness statistics, including injury rates by program/function, types of injuries, and root causes.

Material Safety Data. LM AERO maintains an electronic image database of every Material Safety Data Sheet (MSDS) used on-site. LM AERO provides MSDSs to employees, customers and other parties via an automated phone-fax system (a web-based system is also currently under development), which can be accessed by telephone anywhere in the U.S.

Hazardous Materials Inventory. LM AFRO maintains an inventory of all hazardous materials used or stored on-site, and submits quarterly/annual inventory reports to regulatory agencies as required by state and federal regulations. The inventory includes: the identity of the material, its location by building/area, and the quantity normally kept at each location.

- a. Roster of Terminated Employees: Will be supplied on request.

1.10 Government Access to Safety & Health Program Documentation.

LM AFRO will make all safety and health documentation (including relevant personnel records) available for inspection or audit at the Government's request.

1.11 Safety Requirements Review

LM AERO will, on request, participate in the review and modification of safety requirements implemented by the Government including any referenced documents therein.

1.12 Procurement.

Safety & Health reviews and must approve hazardous materials before they can be purchased for use at the Palmdale facility. Requesters must submit a current MSDS with a Hazardous Materials review form (containing information on how and where the materials will be used). Safety & Health also reviews contracts for proposed work to ensure safety considerations are addressed and that specifications contain appropriate safety criteria and instructions.

2.0 WORKPLACE ANALYSIS.

2i Hazard Identification.

- a. Comprehensive Survey. A "wall to wall" engineering assessment of the work site including facilities, equipment, processes, and materials (including waste) is covered by the company's hazard assessment program is made up of several components. The central component is the Job Hazard Analysis (JHA) Program; however, the Facilities Checklist Program, the Workplace Surveillance Program (WSP) and the Accompanied Inspection Program (CAP) all related to the Job Hazard Analysis Program.
 - Under the JHA Program, Safety & Health ranks company operations by safety risk. Based on the operation's risk, it establishes an annual schedule and conducts routine job hazard analyses (IHAs). During the JHA, each operation is systematically broken down, step by step, into individual processes, and the hazards and required control measures for each process are identified. Worker and management input is incorporated into the JHA.

After the analysis, Safety & Health prepares a "Summary of ESH Requirements"(SER). The SER summarizes the major safety-related requirements (such as worker training, personal protective equipment, work practice, and administrative controls) for the operation. A copy of the SER and the JHA is sent to the operation's management, along with directions to post the documents in the area, review them with affected employees, and use them in worker training and orientations. Management is also requested to contact Safety & Health if the operations change significantly, so the JHA can be revised.

After Safety & Health performs the initial JHA, it is reviewed and updated whenever Safety & Health is notified of a significant change in the operation. This occurs through the Facilities Checklist Program, by management notification, by WSP results, or during CAP audits Even if not notified of a change, Safety & Health periodically reviews existing JHAs and updates them as needed.
- b. Change Analysis. Under the Facilities Checklist program, Safety & Health addresses modifications in facilities, equipment, processes, and materials (including waste); and related procedures for operations and maintenance. ESH reviews proposed new (or modified) processes and equipment, identifying safety issues and concerns, and ensuring they are addressed before the new or modified process begins operation.
- c. Hazard Analysis. In addition to the above, Safety & Health addresses facilities, systems/subsystems, operations, processes, materials (including waste), and specific tasks or jobs by
 - Under the Accompanied Inspection Program, Safety & Health inspects individual buildings, accompanied by the Building Manager, identifying safety compliance issues. Correction notices are issued for discrepancies and are tracked to closure.
 - Under the Workplace Surveillance Program, Safety & Health conducts industrial hygiene reviews of operations posing a significant risk of overexposure to chemicals or physical agents. Results are sent to management and conveyed to affected workers.

2.2 Inspections.

LM AERO's Safety & Health department conducts routine self-inspections under the Accompanied Inspection Program to identify worker safety compliance concerns, initiate corrective action, educate Building Managers, and evaluate company performance related to ESH compliance. Building Managers **and GSC members also conduct** monthly self-inspections of their areas.

Safety engineers conduct the inspections, accompanied by Building Managers and USC members, if available. Inspections cover compliance with many aspects of industrial safety. They include confined spaces, cranes and hoists, electrical safety, emergency response, explosives safety, fall protection, life safety, lockout/tagout, machine guarding/hand tools. They also include general industrial hygiene issues (such as hazard communication, toxics, blood borne pathogens, personal protective equipment (PPE), and radiation safety) but safety engineers refer more complex health issues to industrial hygienists. Safety engineers review safety meeting records and Building Manager inspection records, and confirm that operations have received IHA results and have briefed workers.

Safety & Health issues correction notices to management to document discrepancies and ensure they are corrected. Closure of correction notices requires written responses describing the corrective action that was taken. Safety & Health tracks correction notices to closure by entering relevant information into a computerized tracking database. Safety & Health reviews open correction notices monthly. Appropriate action, such as notifying upper management, is taken on delinquent correction notices.

In addition, Building Managers conduct regular (monthly for shop areas, quarterly for office areas) inspections using a checklist provided by Safety & Health. The Building Manager is responsible for initiating corrective action for discrepancies found. Safety & Health conducts hazard recognition training for Building Managers to assist them in performing effective inspections..

General Safety Committee members also conduct regular inspections of their assigned areas. Where possible, they coordinate with Building Manager inspections to promote a team inspection approach. GSC members use an inspection checklist provided by Safety & Health, and they receive training on hazard recognition and on using each section of the checklist in monthly GSC meetings.

2.3 Employee Reports of Hazards.

LM AFRO encourages employees to report hazardous conditions (e.g., close calls)

- Employees should correct hazards themselves, if appropriate and possible (i.e., unplugging an extension cord which is a tripping hazard).
- If employees cannot correct the hazard themselves, they may place a trouble call to the Maintenance Trouble Desk, if the corrective action is relatively simple (i.e., replacing a guard on a machine). When placing the trouble call, if a serious hazard exists, they should note it is "Safety-Related", which are given the highest response priority.
- Employees can report hazards or safety concerns to their immediate supervisor or manager. If this does not correct the condition or, give the employee satisfaction, they can notify the General Safety Committee (see General Safety Committee section) or the Building Manager (see Building Manager Program section) either in monthly meetings or in -person. The Building Manager's name and telephone number is posted at each building, and posters identify the local GSC representative.
- Employees may phone or otherwise contact any ESH Branch employee or submit a note through the company's internal mail or electronic mail systems. Reported concerns are followed up and resolved by ESH personnel. If the caller's name was given, they are contacted to ensure the concern has been addressed. Responses to Hotline calls are documented and filed.

- Employees are also encouraged to voice safety concerns during monthly safety meetings, where the manager or supervisor can address them, or contact Safety & Health for resolution. Safety & Health periodically publishes ESH organization charts and phone numbers, so employees are familiar with the safety personnel assigned to their areas and can notify them either in-person or by phone of safety concerns.
- LM AERO encourages employees to correct hazards through the SAFTE Program. Team members identify hazards and submit workplace safety suggestions. Employees are also encouraged to report hazards to their building managers, general safety *committee members*, or to call Safety & Health directly. Safety hazard reporting and information telephone numbers are posted throughout the plant on ESH information boards.

3.0 MISHAP INVESTIGATION AND RECORD ANALYSIS.

3.1 Mishap Investigation.

LM AERO requires an accident report and the investigation of all Cal/OSHA recordable occupational injuries and illnesses, as well as "near misses." The supervisor or manager of the injured or ill employee conducts the initial investigation on an "Injury/Illness/Incident Investigation - Supervision Report" form. Safety & Health provides accident investigation training, available on the company's NT network, for supervisors and managers.

Supervisors send accident reports to Safety & Health, who provides copies to the Medical and Workers' Compensation Departments. Safety & Health reviews Supervisor reports to ensure they are complete, with special attention paid to corrective action.

In addition to the supervisor/manager investigations, the Safety & Health investigates significant occupational injuries or illnesses, primarily those with lost time. Safety & Health also investigates whenever there is a possible serious discrepancy involving safety rules (such as machine guarding, lockout/tagout, etc.). The Safety & Health staff has been trained on accident investigation and root cause analysis. Safety & Health also involves the appropriate GSC member on any accident investigation it conducts.

When notified, the Medical Department enters all occupational injuries and illnesses (whether recordable or not) into a computer database. This database prints out Cal/OSHA 200 Logs. Safety & Health also uses the database to identify injury/illness trends and potential problem areas. This is also done at the request of management. The database contains 88 fields, allowing the requester to perform many different queries. As a result of such research, the Safety & Health Division conducts surveys, corrects hazards, and initiates new training programs to respond to identified injury/illness trends.

The Safety & Health Division reports on accidents and injury/illness trends to the General Safety Committee. During the monthly General Safety Committee meeting, Safety & Health solicits input and suggestions from Committee members on injury prevention, *corrective action*, training needs, etc.,

32 Trend Analysis.

LM AERO performs trend analysis of accident investigations and other injury/illness data. Root causes are analyzed and reported to the General Safety Committee and Building Managers. LM AERO also uses trend analysis results to develop annual objectives and continuous improvement

projects. LM AERO also maintains a Log of Occupational Injuries and Illnesses (OSHA 300) and posts the required summary every year.

4.0 HAZARD PREVENTION AND CONTROL.

4.1 Appropriate Controls

4.1.1 Hazardous Operations.

- Under the job hazard analysis (JHA) program, Safety & Health staff systematically reviews existing LM AERO operations posing the highest risk to worker safety, identifying hazards and required controls for each step in the process. The degree of safety risk posed and the nature of the operations (i.e., whether changes occur frequently or infrequently). IHA results are conveyed to management, and are passed on to affected workers.
- Under the Facilities Checklist program, Safety & Health reviews proposed new (or modified processes and equipment) identifying safety issues and concerns, and ensuring they are addressed before the new or modified process begins operation.

Baseline and initial safety and health surveys of new or modified processes or equipment is conducted under the Facilities Checklist program. Through this program, LM AERO ensures safety and health concerns associated with new equipment or processes are analyzed for potential hazards prior to use and ensures they are addressed before the operation begins.

A Facilities Project Assessment Checklist is generated for every Facilities project other than office relocations. The checklist is triggered by a Facilities Request Form (Form 3166), which the Facilities Project Engineer and an ESH Branch Coordinator complete. This checklist covers ESH issues and concerns (lockout/tagout, confined spaces, fall protection, etc.) that relate to any new or modified equipment or process. ESH has trained Facilities Project Coordinators on basic ESH requirements and hazards related to construction activities, and so they may adequately identify ESH issues/concerns and refer them to appropriate ESH staff.

Very few, if any, jobs with significant safety and health concerns occur without Facilities involvement and a Facilities Request Form 3166. Rarely, manufacturing engineers (MEs) may install a piece of equipment without Facilities involvement. MEs have been briefed on the need to involve ESH if any project involving potential safety and health issues does arise.

Based on the checklist, Safety & Health ensures that applicable safety requirements are met, including installation of exhaust ventilation systems, use of fall protection systems, use of personal protective equipment, and implementation of PSM requirements. Where operations pose significant safety and health concerns, the Safety & Health Manager routes the checklist to the JHA Coordinator for an initial job hazard analysis and inclusion in the JHA program.

The Facilities Branch uses qualified and knowledgeable Architectural and Engineering (A&E) firms to ensure equipment and facilities are designed to meet environmental, safety & health requirements. Safety & Health staff is consulted at the beginning and at other stages of construction to ensure these requirements are addressed.

During the construction phase of the project, the Facilities Branch interfaces with ESH to resolve any potential problems or concerns. Once the project is completed, ESH usually performs a final inspection (a "safety check") before the equipment or process begins operation. On machinery

requiring guarding, Safety staff inspects the equipment after installation and places an inspection sticker on approved equipment.

Workplace Surveillance Program

The company addresses IH concerns through the Workplace Surveillance Program (WSP). LM AFRO industrial hygienists administer the Workplace Surveillance Program (WSP). IHs identify LM AFRO operations posing potential health risks to employees, establish an annual review schedule, perform reviews (and conduct monitoring, where needed) of air contaminants and other hazards (e.g., noise, radiation), and perform re-evaluations.

Based upon this review, Safety & Health identifies the need for engineering controls, personal protective equipment and other workplace controls. Safety & Health periodically updates the workplace surveillance schedule to ensure that high-risk operations and changes to existing processes are evaluated. Quarterly, Safety & Health reviews WSP results to identify changes in

Industrial hygiene sample analysis is performed at an American Industrial Hygiene Association (AIHA) accredited laboratory. After evaluating monitoring results, Safety & Health provides the results to department management, and ensures the results are passed on to affected employees and, if appropriate, to others performing similar operations. Safety & Health enters monitoring data

4.1.2 Written Procedures: Lockheed Martin Aeronautics Company - Palmdale written procedures governing hazard prevention and control are available on request.

4.1.3 Protective Equipment.

Respiratory Protection Program

Based on monitoring results or knowledge of the process, LM AFRO industrial hygienists determine when respiratory protection is needed and identify the appropriate respirators to be worn. In general, LM AERO's policy is that respirators must be worn if employee exposure is greater than 50% of the OSHA PEL or ACGIH TLV, whichever is lower, and engineering controls are not feasible. Respirators can also be worn in the interim, while engineering controls are being implemented. Disposable respirators may be worn at exposure levels below the 50% exposure level. LM AFRO has a special policy on disposable respirators. Employees are allowed to wear disposable respirators for nuisance situations only (i.e., exposure less than 50% of the PEL/TLV). Employees requesting to use disposable respirators receive a one-time written information sheet, which is documented. No medical evaluations are required.

Employees required to wear respirators are medically evaluated annually by the Medical Dept. Employees currently receive fit-tests during the biennial (every 2 years) training, which is specific for the respirator worn (Note: this will be changed to annual training per the new respirator standard.). The Technical Training Department provides training and maintains the training records in a computerized tracking system. Safety & Health audits respirator training classes annually to ensure the accuracy of the information covered. The company's Respiratory Protection Program is described in ESH-S6-C "Respiratory Protection Program."

Other Personal Protective Equipment

Other than respirators and hearing protection, LM AERO also provides appropriate personal protective equipment (PPE) such as safety shoes, gloves, eye protection, and protective clothing.

Safety engineers and industrial hygienists conduct job hazard analyses to identify hazards and appropriate control measures, including the use of appropriate PPE. Safety & Health also publishes general guidelines on PPE use, and area supervision determines which jobs or employees require the use of PPE. Supervisors instruct workers on how to properly use PPE. PPE use is also covered periodically in safety meetings.

PPE is obtained through tool cribs. Only PPE approved by Safety & Health may be purchased. Safety & Health approves every request and funds PPE purchases. The company's PPE program is described in ESH S6-A "Personal Protective Equipment."

4.1.4 Hazardous Operations Permits. LM AERO issues permits for hot work and confined space operations. In many ways, the department's Job Hazard Analysis document serves as a permit, specifying the hazardous operations and control required to perform each hazardous task.

4.2 Maintaining Facilities Documentation

Palmdale facilities baseline documentation will be provided and tasks implemented as required by NASA.

4.3 Preventive Maintenance.

LM AFRO assures the routine maintenance of critical workplace equipment through its "STAR" system, a computerized preventive maintenance management system. This system is controlled and operated by the Planned Maintenance Organization in the Facilities Engineering Branch, which oversees all preventive maintenance (PM) functions.

The STAR program generates PM orders, tracks the PM activities, and provides management with status reports on various aspects of PM operations (manpower forecasts, PM history, performance criteria, etc.). This system contains interactive relational databases used to perform a variety of functions.

Equipment selected for PM inspection must meet established compliance criteria. These criteria are based on requirements from state, federal, or local agencies, the Environmental, Safety & Health Branch, Air Force contracts, LM AERO's insurance underwriters, operating departments, or the Facilities Branch.

The system issues PM worksheets every Monday to the responsible Maintenance employee for the week's PM activities. When the Maintenance worker completes the work, he returns the completed worksheet to the PM Administration for closure. PM work that cannot be completed must be justified (i.e., security access denial, inability to locate, etc.). A letter is then sent the manager of the affected area, requesting that the condition be corrected and to notify the Planned Maintenance Organization so the PM can be completed. Records are maintained by the Planned Maintenance Organization per retention schedule requirements.

4.4 Medical Program

LM AERO 's Medical and Safety & Health Departments are part of the Environmental Safety & Health organization, greatly facilitating communication between the two departments and helps to ensure close cooperation between the medical, industrial hygiene, toxicology and safety engineering functions.

The Medical Department consists of one full-time occupational physician, a medical coordinator/administrator, three full-time nurses and one part-time contract nurse. All the nurses are either registered (R.N.) or licensed (L.N.) and CPR/First Aid certified. All medical staff receives annual bloodborne pathogen training.

Only Medical personnel and specific trades (i.e., electricians working on high voltage equipment) are required to receive CPR/First Aid training. On a voluntary basis, First Aid and CPR training is offered to Building Managers and GSC members. Also, Human Resources offers the same training to all employees on company time and free of charge. All Building Managers and Plant Protection gates are issued basic first-aid kits, with bandages and antiseptic. Building Managers at buildings that are further removed from the Medical Clinic at Plant 10 (i.e., Site 2, Site 7, B/704, etc.) are issued more extensive first aid kits.

Medical hours are from 7:00 - 4:00, Monday through Friday. During the day shift, workers with minor cuts and abrasions may access basic first aid kits (kept by Building Managers and Plant Protection) or they may go to Medical for attention. For more extensive injuries, requiring medical attention but not life-threatening, injured workers are instructed to go to Medical. For life-threatening situations, employees are directed to call Central Dispatch and request paramedics.

During off-shifts, Building Managers and Plant Protection have basic first aid kits for minor injuries. For more extensive injuries requiring medical attention, management is instructed to call LM AERO's Central Dispatcher, who will either call an ambulance or the paramedics, as appropriate. The response time of either is less than 10 minutes.

The Medical Department performs new employee physical exam. They also perform medical certification exams (spirometry for respirator use, audiograms for the hearing conservation program, etc). While the emphasis is on occupational injuries and illnesses, it also treats, on a limited basis, non-occupational injuries and illnesses. The Medical Department also prescribes and coordinates on-site physical therapy services for occupationally injured workers.

The Medical Department maintains the injury/injury database for OSHA recordkeeping requirements. Monthly, members of the Medical Department and the Safety & Health Manager meet with Workers' Compensation in a Case Review meeting. The meeting's purpose is to review the facts of potential occupational cases, make decisions about the occupational nature of cases, and ensure rationale and documentation exists for both workers compensation and OSHA recordkeeping determinations.

5.0 EMERGENCY RESPONSE.

Building Emergency Action Plans

Each building manager prepares a Building Emergency Action Plans (BEAPs) for the buildings for which he is responsible. Building managers review their BEAPs every six months and update

them as necessary. The Building Manager Program Coordinator (an ESH staff person) also reviews BEAPS annually.

BEAPs cover emergency communication within buildings, authority for specific evacuation tasks, and measures to protect personnel and equipment. The BEAP specifies a Building Emergency Monitor or his alternates for each building, who are responsible for accounting for building occupants. BEAP procedures are covered annually in monthly safety meetings.

Based on the complexity of the building and other factors, Building Managers also specify in BEAPs whether and how often building evacuation drills are required. Building managers document the effectiveness of these drills on evaluation forms. The company's Building Manager Program is described in ESH G1 -R "Building Manager Program."

Contingency Plan

LM AERO's Environmental Safety & Health (ESH) staff maintains the company's Contingency Plan, which describes the actions required for responding to chemical spills and other emergencies. The Contingency Plan is required under RCRA (the Resource Conservation & Recovery Act).

Employees working with chemicals are trained on how to safely use such chemicals, including how to clean up incidental (small) spills in the workplace. Employees are not expected to handle unfamiliar chemicals, or to perform spill clean-up or response functions for which they have not been trained. For larger spills, they summon help by calling the Emergency Dispatcher. Depending on the situation, the Dispatcher can contact the Hazardous Materials & Waste (HM&W) group, or they may summon L.A. County Fire Department assistance.

Employees receive instruction on handling chemical spills and other emergencies through safety meeting topics. Also, in the annual Security Re-briefing, employees receive yearly refresher information on this topic, and the Security Branch tracks completion of this training.

Emergency Response Plan

The majority of chemical spills encountered at LM AERO facilities are incidental in nature and do not require additional outside intervention. However, there may be certain conditions that pose a significant enough threat to employee health and safety or to the environment where additional resources, such as from local fire agencies or hazardous waste contractors, may be required.

In addition, LM AERO's HM&W group responds to reported chemical spills or releases on plant property. Under HAZWOPER, they perform only "First Responder - Operations Level" duties. They evaluate whether such incidents can be readily managed with available equipment, personnel, and resources and take only defensive action, outside the actual zone of the emergency. Only after the emergency is over and the situation stabilized, are they involved in spill clean-up. These actions are outlined in the LM AFRO Emergency Response Plan (ERP).

Self-Contained Breathing Apparatus (SCBAs) used by the HM&W are for non-emergency use only. They are used during spill clean-up, or in other non-emergency situations requiring the respiratory protection factor appropriate to SCBAs.

Disaster/Crisis Management:

The LM AERO Security Department administers and coordinates the LM AERO Crisis Management Manual. This document provides LM AERO management with procedures for preparing for, responding to, and recovering from a catastrophic emergency or disaster involving LM AERO personnel or facilities. Pertinent emergency actions are included in the LM AERO telephone directory, including emergency preparedness and evacuation instructions for fires, chemical accidents, power failure, or other incidents. The company's disaster management program is described in MD-S-2, "Disaster Control".

Other Plans:

In addition to the above, LM AERO maintains other regulatory -related documents related to emergencies, such as the LM AERO Business Plan, and the LM AERO Spill Prevention Control and Countermeasures (SPCC) Plan.

LM AERO submits prepares and submits its Business Plan to the local fire department for use in their emergency response and planning. The Plan includes inventories of hazardous chemicals, maps showing LM AERO hazardous materials locations, and describes chemical management procedures. It also includes diagrams of plant electrical, domestic water, chilled water, fire protection, natural gas and compressed air, and high pressure steam systems.

The SPCC Plan establishes procedures and responsibilities for preventing and, if they occur, effectively dealing with spills of oil and petroleum products that could pollute the soil, groundwater, and surface water.

6.0 SAFETY AND HEALTH TRAINING.

New Employee Orientations

Formalized safety and health training for new employees starts on the first day of employment. As part of the hiring process, new or recalled hourly employees, as well as appropriate salaried employees, receive an orientation from Human Resources covering safety and health programs. The orientation covers the company's Injury & Illness Prevention Program, Hazard Communication Program, Back Safety information, etc.

Once new-hires are assigned to their departments, or when existing employees are transferred and report to their new departments, supervisors or managers provides them with a department specific safety orientations. The orientation must include specific topics, including departmental safe work practices, emergency information, which are documented on an "Employee Orientation Checklist." Supervision is responsible for ensuring that crewmembers follow safety and health rules for each job that the employee performs. The requirement for employee orientations is described in ESH S1-B, "S&H Orientation - New and Transferred Employees".

Monthly Safety Meetings

Every supervisor and manager is required to conduct monthly safety meetings for their employees. Safety & Health provides supervisors assistance and guidance on conducting

monthly safety meetings. At the beginning of the year, Safety & Health publishes an annual package of safety meeting schedules and lesson plans for each supervisor/manager.

In the package, there is a 12-month schedule that is divided into tracks (i.e., Production/Maintenance, Engineering/Office, and Laboratory). The topics in each track are geared to the type of operations and hazards that might be found by workers in the track. See Attachment J for a list of the 1998 schedule.

Several mandatory Hazard Communication topics are included every year, as well as a topics on Building Emergency Action Plans, personal protective equipment, safe lifting/back safety, etc.

Skills Training (CERTS)

The Skills Training Committee, made up of Technical Training, Safety & Health, Production, and QA representatives meets monthly and oversees course content, training, requirements, and conditions of training courses performed by the Technical Training Organization ("CERTS" classes).

The Technical Training Department, with support from Safety & Health, provides CERTS safety training. Based on their employees' tasks and responsibilities, management specifies the training and certification requirements of each employee for which they are responsible. Safety & Health also conducts surveys and job hazard analyses, which assists the management in determining training requirements. Training maintains safety training records pertaining to certification, notifies affected management when employees are due for re-training, and schedules training classes. With certain high hazard skills, Supervisors must be certified on the same safety classes as their crews.

- Safety & Health assists Technical Training in developing and updating training classes. It establishes an annual audit schedule and periodically audits safety-related CERTS classes conducted by Technical Training. After the audit, Safety & Health provides constructive input to the instructor on course content, delivery, and overall effectiveness. Also, whenever Safety & Health is aware of a change in regulations affecting training, changes are made through the Skills Committee, to ensure training course information is kept up to date and accurate. The company's technical training program is described in HTRD-200 and ESH-S 1 -D: "Safety Certification (CERTS) Program"

Other Training

Training is also an integral part of LM AERO's Back Injury Prevention Program and Ergonomics programs. Newly hired employees receive back injury training during new employee orientations. Employees who wear back support belts must attend a training class on belt use and back injury prevention. Back Injury Prevention and Ergonomics are routinely included in LM AERO's monthly supervisor safety meeting topics. As part of LM AERO's in-house physical therapy program, a contract physical therapist provides information to employees with back injuries on proper lifting techniques and back care. Likewise, employees with repetitive motion injuries receive information on ergonomics and injury prevention. Back injury prevention and ergonomics classes are accessible through the company's NT network (on the R -drive, under "Safety"), and are required for employees in selected job classifications.

INDIVIDUAL SUBCONTRACTING PLAN

EXHIBIT C

LOCKHEED MARTIN

LOCKHEED MARTIN AERONAUTICS COMPANY - PALMDALE
1011 LOCKHEED WAY
PALMDALE, CA 93599

PROPOSAL / CONTRACT NO.	I-LDI-4200024660	ORDER # J
TITLE	Structures & Materials & Aerodynamic, Aerothermodynamic & Acoustics Technology For Aerospace Vehicles	
ECP/PROPOSAL/LETTER NO.	Revision I	
DATE OF LETTER		
STATEMENT OF WORK REV NO.		
BUSINESS OPPORTUNITY NO.		

NOTE:

This plan is to be used in conjunction with approved Master Subcontracting Plan effective 09/16/03

1. DOLLAR AND PERCENTAGE GOALS	DOLLARS	PERCENT
Total Planned to be Subcontracted	TBD	TBD
Total Planned to be Subcontracted to LB	TBD	TBD
Total Planned to All Small Businesses	\$9,750,000	25%
Total Planned to HUBs Only	TBD	TBD
Total Planned to SDB Only	\$3,900,000	10%
Total Planned to WOB Only	\$1,950,000	5%
Total Planned to Veteran Only	TBD	TBD
Total Planned to Service Disabled Veteran Only		

2. DESCRIPTION OF SUPPLY/SERVICE TO BE SUBCONTRACTED

Check block(s) as appropriate to identify the types planned for subcontracting, and subcontracting to SB, SDB, WOB, DWOB, HBCU/MI, and HUBs.

	SMALL	SDB	WOB	DWOB	HBCU/MI	HUBs
Avionics Equipment						
Castings/Forgings						
Communications Equipment						
Construction/Maint. Services						
Electronic Countermeasures						
Engineering/Mfg Services						
Fabricated Parts						
Military Airborne Radar						
Outside Processing						
Purchased Parts/Equipment	X	X	X			X
R&D/New Technology						
Raw Material						
Regulated Assemblies						
Technical Services						
Test Equipment						
Other:	X	X	X			X

SB Plan NASA Proposal 1-LDI-423t..4660.

3. **FACTORS CONTRIBUTING TO LESS THAN 5%**
Period of performance for this contract is 60 months from the effective date of the contract
This Small Business Plan is in support of NASA Proposal 1 -LD(-4200024660, Structure & Materials & Aerodynamic, Aerothermodynamic & Acoustics Technology for Aerospace Vehicles. This is a task order effort issued by the Langley Research Center.

The Small Business goals have been established based on an analysis of all estimated subcontracting and material requirements for this proposal effort and evaluation of small business potentials. The goals have been validated by comparison with historically achieved ratios for same or like subcontracting efforts. The goals established are target percentages of small business awards to total estimated subcontracting dollars. The material to be purchased is unknown at this time as well as potential small business suppliers to be utilized for the task efforts. Actual suppliers to be used for specific products will be identified and selected after competitive bidding has taken place and the most qualified/competitive supplier has been selected. Every effort will be made to utilize SB's, SDB's, & WOB's wherever and whenever practical.

All small business categories include indirect dollars. (See page 2 of this small business plan.) The small business goal percentages have been calculated against a total contracted **value of \$39,000,000,**

4. **IDENTIFICATION OF POTENTIAL SDBs TO BE UTILIZED**

SUPPLIER	PRODUCT/SERVICE	ESTIMATED AMT
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5. **HISTORICALLY BLACK COLLEGES & UNIVERSITIES AND MINORITY INSTITUTIONS**

Check block(s) as appropriate:

- The technological requirements of this program will not warrant the participation of Historically Black Colleges and Universities and Minority Institutions.
- The constraints for this program (customer -directed, compatibility with existing systems, (et all) will not warrant the participation of Historically Black Colleges and Universities and Minority Institutions.