CHRONOLOGICAL DATA ON CONTROLS FOR
BOILERS 1 THRU 4, BUILDING 1700
MCB, CAMP LEJEUNE, NORTH CAROLINA

3 Nov 77	Boiler #4 exploded while manually lighting coal fire.
7-11 Nov & 16-18 Nov 77	LANTDIV Utilities Div. Mechanical Engineer, Joe Russo (not a designer), investigated boiler explosion.
26 Jan 78	Ltr 112:jer, 11310 dtd 26 Jan 78 from Cdr, LANTDIV to CG, MCB, CLNC forwarding "Report of Investigation of Furnace Explosion in Boiler No. 4, Central Heating Plant, Building 1700, Marine Corps Base, Camp Lejeune, N.C. of Jan. 1978." Report recommends "Burn only No. 6 fuel oil until flame safeguard controls for coal are installed."
23 Feb 78	Ltr MAIN/BRW/rn, 11300, 23 Feb 78 from BMO to PWO requiring an extensive engineering study and economic analysis on installing the boiler controls. Two parallel paths are being pursued by BMO: (1) a facilities project as most proper, and (2) a supply procurement as presumably more expeditious.
17 Mar 78	Sam English, Inc., Power Plants Contractor's ltr to Utilities Dir., BMD, offering proposal to modify boiler controls.
20 Mar 78	LANTDIV expert again visits.
8 May 78	Ltr MAIN/BRW/rn, 11370 from BMO to PWO requesting that highest possible priority be given to project of installing controls, in effect reporting a command decision to go the facilities project route.
30 May 78	Ltr PWO:280:mkc, 11000, from CG, MCB, CLNC to HQMC forwarding project P-755, Boiler Safety Controls, Bldg, 1700.
18 Jul 78	Msg 181312Z Jul 78 from CG, MCL, CLMC to CGMC requesting funds to develop plans, specs and advertising.
21 Jul 78	Msg 211427Z Jul 78 from CMC to CG, MCB, CLNC -- authorization to develop plans and specs approved.
31 Jul 78	Martin Control & Equipment Co. contracted to provide a block control diagram and a list of equipment required including cost data.
16 Aug 78	ESR, "Project P-755, Boiler Safety Controls, Bldg. 1700," forwarded to LANTDIV, confirming decisions week of 24 July.
21 Aug 78	First report from Martin Control & Equipment Co. Additional information requested.

25 Aug 78 — Martin Control & Equipment Co. report forwarded to LANTDIV.

29 Aug 78 — Updated report received from Martin Control & Equipment Co.

30 Aug 78 — -LANTDIV ltr 09A21E:NLP, N62470-70-C-1402, to R. S. Noonan, Inc. of S. C. requesting proposal of fee for A/E services.

-Mr. Dick Mullis and Mr. Leon Plummer of Babcock & Wilcox, USA, Bailey Meter Co., inspected boiler controls at job site.

11 Sep 78 — Ltr MAIN/BWE/nah, 11300 to AC/S, Fac from BMO. General information.

12 Sep 78 — Ltr FAC:TRB:mkc, 8281, from AC/S, Fac to PWO offering assistance to overcome any administrative obstacles.

13 Sep 78 — Proposal from Babcock & Wilcox, USA, Bailey Meter Co., indicating total cost of Bailey controls to be $10,079 with shipment 15 weeks after receipt of order. PWO reps met with BMO personnel and discussed firing boilers on coal using additional people in interim until controls can be improved.

18 Sep 78 — -Ltr PWO:THH:sh, 4400, from CG, MCB, CLNC to C.O., Base Materiel Bn, requesting purchase of Bailey and Fireye controls.

-Ltr MAIN/BW/nah from BMO to AC/S, Fac recommending that a single source contract be awarded to Sam English, Inc. Letter also rejected using coal without flame safeguard controls.

-Updated report received from Martin Control & Equipment Co.

19 Sep 78 — Msg 191421Z from LANTDIV to CG, MCB, CLNC requesting design funds be withdrawn since project will be accomplished by A&E vice in-house.

20 Sep 78 — Meeting of T. H. Hankins (PWO) and B. R. Wilson (BMO). Mr. Wilson informed Mr. Hankins that his office would not issue the cost documents for purchasing the equipment until the single source control issue could be resolved.

21 Sep 78 — Ltr PWO:RHK:sh, PWD P-755 from CG MCB CLNC to LANTDIV requesting additional clauses in specification.

22 Sep 78 — PWO endorsement of BMO ltr MAIN/BW/nah 11300 of 18 Sep 78.

25 Sep 78 — Ltr PWO:THH:sh, P-755/78-59 from CG MCB CLNC to LANTDIV forwarding updated report from Martin's Control & Equipment Co., list of equipment required, and Proposed Restrictive Bidders List.

2 Oct 78	Memo to File 43-20:JST:agt dtd 2 Oct 78 ref phonecon M. Bryant (LANTDIV)/LCDR Sherron (PWD, CLNC) 2 Oct 78.
3 Oct 78	Ltr PWO:JTS:arc, 11000 dtd 3 Oct 78 from PWO to AC/S, Compt advising A&E negotiations completed, fee of $10,000.
	Ltr from R. S. Noonan to 09A21E, LANTDIV, confirming contract target dates & the fact that scope includes emergency generator.
6 Oct 78	Ltr 09A21E:MLB, N62470-76-1402 dtd 6 Oct 78 from A.G. Bryant, Jr., LANTDIV, to R. S. Noonan advising change to list of Govt. furnished equip and add requirement for specifications.
	Msg 061643Z Oct 78 from CG MCB CLNC to CMC for LFF-2 authorization A&E funds of $9,843.
12 Oct 78	Ltr 09A21E:MLB, N62470-76-C-1402, N62470-78-B-8541 dtd 12 Oct 78 from Cdr, LANTDIV to CG, MCB CLNC advising 90% plans, specs & cost estimate cannot be used for comp. neg.
17 Oct 78	Ltr PWO:THH:sh, PWD 78-57 dtd 17 Oct 78 from PWO to R. S. Noonan outlining scope of work for A&E contract.
19 Oct 78	Ltr PWO:RHK:sh P-755 dtd 19 Oct 78 to AC/S, Fac fwdg revised Project P-755 increasing funding level from $61,000 to $92,000.
20 Oct 78	Ltr PWO:THH:sh P-755/PWD 78-59 dtd 19 Oct 78 from PWO to R.S. Noonan providing instructions for shop dwg paragraph in specs.

DEPARTMENT OF THE NAVY
ATLANTIC DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
NORFOLK, VIRGINIA 23511

TELEPHONE NO.
444-7331
AUTOVON 690-7331

IN REPLY REFER TO:
112:JER
11310

26 JAN 1978

From: Commander, Atlantic Division, Naval Facilities Engineering Command
To: Commanding General, Marine Corps Base, Camp Lejeune, North Carolina

Subj: Investigation of furnace explosion in Boiler No. 4

Ref: (a) MARCORB CAMLEJ msg 032309Z Nov 1977

Encl: (1) Report of Investigation of Furnace Explosion in Boiler No. 4, Central Heating Plant, Building 1700, Marine Corps Base, Camp Lejeune, North Carolina of Jan 1978

1. Reference (a) advised of the occurrence of the subject boiler furnace explosion and requested an investigation to determine the cause, extent of damage, and required repairs.

2. Enclosure (1) provides a report of the investigation. It may also be noted that a meeting was held at this Command on 17 January 1978 with representatives of the Riley Stoker Corporation to negotiate a contract for repair of Boiler No. 4.

E. A. Barco

E. A. BARCO
By direction

Copy to:
OICC/ROICC JACKSONVILLE NC AREA

Investigation of Furnace Explosion in Boiler No. 4

Central Heating Plant, Building 1700

Marine Corps Base

Camp Lejeune, North Carolina

January 1978

Utilities Division

Atlantic Division, Naval Facilities Engineering Command

Norfolk, Virginia

Prepared by:

Joseph E. Russo

JOSEPH E. RUSSO
Mechanical Engineer

CONTENTS

1. Introduction

This Command was advised on 3 November 1977 that a furnace explosion had occurred on 3 November 1977 in Boiler No. 4 at the Central Heating Plant, Building No. 1700, Marine Corps Base, Camp Lejeune, North Carolina.

This Command was requested to conduct an investigation of the furnace explosion. A mechanical engineer from the Utilities Division visited MARCORB CAMLEJ during the periods 7-11 November 1977 and 16-18 November 1977 to conduct the investigation.

2. Boiler Description: (Boiler No. 1,2,3, and 4 are identical boilers built in 1942)

a. Manufacturer: Riley Stoker Corporation, Worcester, Mass.

b. Model No.: P-25-25-WW

c. Serial No.: 1978

d. Built/Date: 1942

e. Type: Field erected, watertube boiler

f. Fuel: Dual fuel, pulverized coal and No. 6 fuel oil

g. Capacity: 100,000 pounds per hour of saturated steam

h. Pressures: 193 psig design; 150 psig operating

3. Operator's Statement of Events: (See next page)

3. OPERATOR'S STATEMENT OF EVENTS

To whom it may concern.

1- Furnace explosion, #4 boiler, Bldg. 1700 0345 the 3rd of November, 1977

We were putting #4 on coal to warm up and put on line. The fans were on, manua gas torch burning, pulverizer running. #4a scales would not run. William Bell and myself, Kenneth Shepard went up to scales leaving Leland Sanderson in front of boiler. The scale belt was jammed + we freed it + came back down, During this time which was about 5 to 7 minutes the phone rang and Sanderson stepped in the office located approxima in front of #4. Bell + myself came down and saw torch was out. Bell secured gas torch and I secured fuel. We let fans run about 4 or 5 minutes to purge furnace. Bell then lit manua gas torch and the explosion ocurred.

Kenneth R. Shepard
William E. Bell

4. Additional Data on Events Preceding Furnace Explosion

a. Operators' Titles:

Mr. Kenneth R. Shepard, Boiler Plant Equipment Operator Foreman, WS-9
Mr. William E. Bell, Boiler Plant Equipment Operator, WG-11
Mr. Leland L. Sanderson, Boiler Plant Equipment Operator, WG-5

b. Mr. Shepard and Mr. Bell are considered very competent operators.

c. Mr. Sanderson was scheduled due to emergency leave for the operator originally scheduled.

d. Mr. Sanderson is a trainee boiler operator, and is considered to have much potential to become a competent operator.

e. This was Mr. Sanderson's second assignment on firing of pulverized coal.

f. There are no automatic flame safeguard controls installed for firing pulverized coal.

g. The coal weigh-scales are located on the next level above the operating level. The access stairway is located near the rear of the boiler.

h. The forced-draft fan and induced-draft fan were adjusted to give "low-low" air flow for boiler startup. This setting gives a neutral draft (neither positive nor negative furnace pressure), to prevent blow-out or flash-back of the ignition torch when it is manually inserted in the boiler for light off.

i. After noting that the propane ignition torch was out, the operators initiated a purge for about 4 or 5 minutes, using fan settings higher than "low-low", but less than maximum capacity. The operators seem to recall using fan settings at about 50% capacity.

j. The manual ignition torch system for firing pulverized coal has existed since the four boilers were built in 1942. In the past 35 years there have been dozens of "puff-backs" and muffled mini-explosions during the manual light-offs.

5. Extent of Boiler Damage

a. The LANTDIV representative recommended that a Riley Stoker Corporation representative evaluate the damage so that a firm cost proposal could be obtained for repairs.

b. Accordingly, arrangements were made, and Mr. Norris R. Bryant visited the central heating plant on 10 and 11 November 1977 and inspected the boiler

c. No damage was done to the boiler tubes or to any of the drums. This was confirmed on 11 November when plant personnel performed a full hydrostatic test of 300 psig, and no leakage was observed.

d. The refractory brickwork was pushed outward about 12" on the right side, and about 9" on the left side, measured at mid-height. The side casing sheets were bulged outward, from the hoppers up to the roof. The front casing sheets were bulged outward, starting just above the burners, up to the roof. The roof casing was bulged upward throughout. The two roof explosion doors did not appear damaged and moved freely without binding. No exterior damage was observed on the rear of the boiler, or below the burners, or on the ash hoppers.

e. Near the rear of the boiler there is a 14-inch wide-flange beam across the top of the boiler, supported by two vertical exterior columns. The 14-inch beam acts as a spreader between the two columns, and it also supports the main steam line from the steam drum. The lower flange of the 14-inch beam had twisted about 4 inches from its normal position. The right column bowed outward about 3/4" and the left column bowed outward about 1/4", measured at mid-height. The deflections of the two columns and of the 14-inch beam are considered repairable, after straightening and reinforcement.

f. The repair work is considered to consist of replacing all deformed casing, together with its associated refractory and insulation. The estimated repair cost by contract is about $155,000, and will require approximately 120 days for accomplishment. The new casing would be welded vice bolted.

6. Cause of Furnace Explosion

a. Apparent Cause of Furnace Explosion

The apparent cause of the furnace explosion was insufficient purging of a fuel-air mixture, which subsequently ignited when the propane-gas ignition torch was applied. The fuel present was a combination of propane gas and of pulverized coal. The propane gas was injected into the boiler after the ignition torch went out, and could have accumulated for most of the 5 to 7 minute period that the two experienced operators were absent from the boiler front. The pulverized coal was injected into the boiler after the jammed weigh scale began to function again. The pulverized coal injection probably occurred for 1 to 2 minutes, while the first two operators returned to the boiler front and finally secured the coal feeder.

b. Deficiencies Contributing to Furnace Explosion

The furnace explosion was basically due to the following factors which involve deficiencies in equipment, procedures, and operator judgement.

(1) Lack of automatic flame safeguard controls for firing pulverized coal. Such controls would have detected flame failure in the ignition torch, and would have shut off propane gas flow, and shut down the coal feeder.

(2) Use of a home-made portable ignition torch. This torch is easily snuffed out by slight changes in furnace draft. There is no support bracket to assure proper alignment angle or depth of insertion, and the torch frequently tilts over in the insertion port. (Note: The operators are subject to serious burn hazards when lighting and inserting the torch.)

(3) Lack of detailed instructions for operators on purging furnace gases after flameout, covering the necessary fan settings and duration of purge.

(4) The operators did not sufficiently evaluate the magnitude of unburned fuel which could have accumulated in the furnace. Extreme caution was indicated, and full fan output should have been selected for an extended period of time.

(5) The insufficient experience of the trainee operator limited his ability to monitor and detect flameout of the ignition torch. In retrospect, an experienced operator could have been posted at the boiler front, and the trainee operator utilized in clearing the jammed weigh-scale.

c. Basic Cause of Furnace Explosion.

(1) Automatic flame safeguard controls were never provided for the pulverized coal system. Such controls would have prevented the furnace explosion.

(2) Automatic flame safeguard controls were installed in November 1972 for the No. 6 fuel oil system, since No. 6 was considered the primary fuel and pulverized coal was considered the secondary fuel.

(3) The steam plant is a dual-fuel plant, and both fuel systems should have received equal attention during a modernization program.

7. Recommendations

a. Install a complete flame safeguard control system for firing pulverized coal. This system should include a permanently mounted ignitor, consisting of a burner gun using No. 2 fuel oil, on a retractable mount, and tied in with the electronic flame scanner.

b. Modernize the combustion control system, so that the fan controls, flame scanners, purge programmers, and all other components are adjusted and compatible for firing either pulverized coal or No. 6 fuel oil.

c. Utilize printed instructions of the combustion control system manufacturer to cover each type of normal procedure, and each type of emergency procedure.

d. Establish a training schedule for trainee-boiler operators which particularly defines the tasks and responsibilities which can be assigned as proficiency increases.

8. Additional Recommendations

a. In the course of this investigation, numerous conditions were revealed which could directly or indirectly lead to additional major casualties in the future. It is, therefore, considered desirable to briefly list each item with its associated problem, and the recommended approach for corrective action.

b. Item: Burning pulverized coal with existing manual controls.

Problem: May result in another furnace explosion.

Action: Burn only No. 6 fuel oil until flame safeguard controls for coal are installed.

c. Item: Burning wet coal.

Problem: Will cause erratic feeding and stoppages in the coal elevator, overhead storage bunker, weigh scale, and feeder, with corresponding pulsations or interruptions in the burner flame.

Action: Provide an open-shed roof covering for 1500 tons of coal (8 to 10 days of use) on the outside coal storage pile.

d. Item: The existing coal contract is furnishing 1¼" X 0" size coal.

Problem: The second digit, 0", indicates no limit on the smallest particles, and this coal, therefore, contains much dust. This coal dust can result in a dust explosion while being handled. In addition, there are higher maintenance costs due to slag buildup on tubes, high pulverizer wear, feeder stoppages, and air and water pollution from escaping dust.

Action: The coal contract should be revised to obtain 1¼" X ¼" size coal.

e. Item: Communication within Plant

Problem: The main control panel is centrally located between the No. 2 and No. 3 boilers. The new No. 5 boiler is installed beyond No. 4 boiler. Operating personnel near No. 1, No. 4, or No. 5 boiler can communicate only by walking back to the main panel. In addition, operating or maintenance personnel on higher levels or lower levels, or out at the coal conveyor are unable to communicate with the main control panel.

Action: Install intercom units specially designed for high-noise areas at all necessary locations to assure rapid communication.

f. Item: Malfunctions in the Pneumatic Combustion Control System.

Problem: The miniature components in the control system have very small openings, which partially or completely plug up, due to the presence of condensed water vapor and lubricating oil. The final effects of these contaminants include sluggish response of draft fans and fuel control valves to rapid boiler load changes, and to full-range changes during start-up, purging, and shut-down.

Action: The existing inadequate service air compressor and water-cooled aftercooler should be replaced with a packaged instrument air compressor and refrigerant air dryer, to furnish water-free and oil-free air to the Pneumatic Combustion Control System.

g. Item: Maintenance of Pneumatic Combustion Control System

Problem: There are periodic occurrences of malfunctions, errors, and failures of instruments and controls in the Pneumatic Control System. There are inadequate resources for correcting these problems, since there is no instrument repair shop, and only one instrument mechanic with insufficient training for the tasks at hand.

Action:

(1) Establish an instrument repair shop in Building 1700, adequately equipped for testing and repair.

(2) Provide one additional instrument mechanic for proper coverage of the work, and to assure that one man is available at all times.

(3) Schedule both instrument mechanics for a series of basic and advanced training courses available in industry.

(4) Secure an annual maintenance contract with a reliable company for prompt correction of major casualties beyond local repair capability.

h. Item: Emergency operation of Central Heating Plant.

Problem: Loss of commercial electric power will cause the plant to shut down since the draft fans, safety controls, etc. are electrically operated. In addition, unexpected shut-down of one boiler could also shut down the plant, since full steam header pressure is needed for the steam-turbine-driven feedwater pumps.

Action:

(1) Replace all steam-turbine drivers for pumps, with electric drivers.

(2) Install an emergency diesel-generator which will supply all electric power for the plant when required, similar to the new plant [illegible]

i. Item: Variations in No. 6 fuel oil composition.

Problem: Many users of No. 6 fuel oil have noticed variations in the No. 6 fuel oil supplied by contract. The principal changes noted are more paraffin (wax) content, and more vanadium metal content. Variations in wax content cause variations in viscosity, whereas most burner nozzles are designed for a fixed viscosity of 150 Saybolt Seconds Universal (SSU). The higher vanadium content causes complex ash deposits on boiler tubes in the furnace.

Action:

(1) Install a fuel oil viscosity controller to maintain constant viscosity, and therefore more efficient combustion.

(2) Perform evaluation tests on some leading brands of fuel-oil additives, to minimize ash deposits, and thereby reduce maintenance cleaning and improve heat transfer.

j. Item: Inability to observe flue gases leaving the stacks.

Problem: Excessively dark stack gases are a nuisance, and also will violate state air pollution laws. Clear stacks indicate high excess air and corresponding loss of heat to the air. Both extreme conditions indicate that more fuel is being used than is necessary.

Action: Install a closed-circuit television camera (CCTV) to enable boiler operators to observe flue gases leaving the stacks. The CCTV will promote lower fuel consumption, and facilitate conformance with state air pollution laws.

BASE MAINTENANCE DEPARTMENT
Marine Corps Base
Camp Lejeune, North Carolina 28542

MAIN/BRW/rn
11300
23 Feb 1978

From: Base Maintenance Officer
To: Public Works Officer

Subj: Engineering Study of Building 1700 coal firing equipment; request for

Encl: (1) Report of Investigation of Furnance Explosion in Boiler No. 4, Central Heating Plant, Building 1700, Marine Corps Base, Camp Lejeune, North Carolina of Jan 1978

1. Paragraphs 7 and 8 of enclosure (1) contain the following items which cannot be corrected by Base Maintenance personnel:

a. Paragraph 7, items a, b, and c.

b. Paragraph 8, items c, e, f, h, i, and j.

2. The above items require an extensive engineering study and an economic analysis. It is requested that engineering studies and projects be initiated to determine the feasibility of these requirements.

3. Items in paragraph 7 should be given priority since coal cannot be burned safely until these corrections are made.

BOB WILSON
By direction

SAM ENGLISH, INC.

POWER PLANTS CONTRACTORS

POST OFFICE BOX 9110
RICHMOND, VIRGINIA 23227
PHONE 746-5214

March 17, 1978

Mr. Bob Wilson
Utilities Director
Base Maintenance Department
Building 1202
Camp Lejeune, North Carolina 28542

Sub: Safety Controls on Boiler at Building 1700

Dear Sir:

Per our discussion on March 15, 1978 in regards to the above subject, we are pleased to offer the following proposal.

Add an additional Fireye Scanner to monitor the gas pilot and the coal flame. This will be interlocked so that the coal feeder cannot be started unless the scanner sees a pilot flame.

Replace the existing gas pilot with a new pilot of larger B.T.U. capacity to eliminate the hand torch now being used.

Add necessary relays and timers to require the boiler to be purged for coal like they do on oil.

Add necessary Bailey components in the existing panel board to ratio the coal and air so that two burners can operate on one coal mill.

Remove the manual F.M. cocks from the oil and gas pilot lines. Add a three way oil valve to make oil firing smooth and eliminate having to operate the hand valves. Reroute oil lines in front of the right hand burner in order to get better access to the coal valves.

Price: $9,772.00. Total for four (4): $39,088.00.

Additive Alternate No. 1:
Furnish and install a 5,000 watt emergency generator to run on L. [illegible]as. The generator will be hooked up to the instrumentation and control circuit and the 3 H.P. instrument air compressor. In case of a power failure, generator will automatically start within 10 seconds and stop when power is restored.

Price: $4,320.00

This price is based o[illegible]ating the generator in the a[illegible] of the large compressors under the [illegible]ntrol panels.

Additive Alternate No. 2:
It was not discussed the other day, but we noticed that the operator had to turn the atomizing steam on by hand. There may be a reason for this that we do not know of. If you desire, we can add a solenoid valve on the atomizing steam and tie it in to make it automatic.

Price: (Each boiler) $700.00.

Total for four (4): $2,800.00.

We thank you for the opportunity to quote and if you have any questions, please do not hesitate to call on us.

Sincerely,
Sam English, Inc.

James R. Garner, Jr.

James R. Garner, Jr.
Vice President

JRG/cpp

[illegible]
Marine Corps Base
Camp Lejeune, North Carolina 28542

MAIN/ERH/rn
11370
8 May 1978

From: Base Maintenance Officer
To: Public Works Officer

Subj: Flame Safeguard Control Systems, Bldg 1700

1. During the investigation of the explosion in Boiler No. 4, it was determined that subject controls were not a part of the control system while lighting off and burning coal.

2. The Atlantic Division inspector stated in his report that subject controls should be installed, and that firing with coal without these controls could result in futher boiler explosions. As a result of this report, coal firing has been discontinued until adequate safeguard control equipment is installed.

3. It is requested that the project to install flame safeguard controls be given the highest possible priority to ensure that controls are installed before the beginning of the next heating season.

C. D. WOOD

UNITED STATES MARINE CORPS

CAMP LEJEUNE, NORTH CAROLINA 28542

P:O:280:mks
11000
30 May 1978
3

From: Commanding General
To: Commandant of the Marine Corps (Code LFF-2)

Subj: Supplemental Minor Construction Project P-755, Boiler Safety Controls, Bldg. 1700

Ref: (a) CG MCB CLNC ltr P:O:C48:dh 11000 of 15 Feb 1978 w/NAVFAC Form 10956 of 9 Feb 1978

Encl: (1) Project Request Package consisting of DD Form 1391 dtd 24 May 1978, NAVDOCKS Form 2417 dtd 18 May 1978, Single-Line P.W. Dwg. No. 13980, and Site Location (3)

1. It is requested that the subject project be placed at priority number one for the proposed FY 1979 Camp Lejeune Minor Construction Program submitted by reference (a). Previously requested ADE design funds should be increased by that amount shown on NAVDOCKS Form 2417 of the enclosure.

J. KOVACH
By direction

Blind copy to:
BMaintO
AC/S, Fac

1. COMPONENT	MARINE CORPS FACILITIES PROJECTS PROGRAM FY 19 78 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
NAVY		24 MAY 1978

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA 28542	BOILER SAFETY CONTROLS, BLDG. 1700

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
	821-22	P-755	61

9. COST ESTIMATES

ITEM	U/M	QUANTITY	UNIT COST	COST ($000)
SAFETY CONTROLS FOR BOILERS, SENSORS, AUTO GAS PILOT, TIMERS, COMPRESSORS & OTHER COMPONENTS	LS	-	-	55
TOTAL COST	-	-	-	55
CONTINGENCY - 10%	-	-	-	6
ESTIMATED CONTRACT COST	LS	-	-	61
SUPERVISION, INSPECTION & OVERHEAD	-	-	-	-
TOTAL REQUEST	LS	-	-	61
INSTALLED EQUIP OTHER APPROPRIATIONS	-	-	-	-

10. DESCRIPTION OF PROPOSED CONSTRUCTION

Provide necessary Fireye scanners, auto gas pilots, relays and timers, Bailey controls, 250 CFM air compressor, refrigerated air dryer, etc. for a complete and useable safeguard control system for firing pulverized coal.

11. REQUIREMENTS

PROJECT: To provide safe control systems for coal burning equipment in Bldg. 1700.

REQUIREMENT: An automatic flame safeguard control for firing pulverized coal.

CURRENT SITUATION: Presently the boilers in Bldg. 1700 are set up for manual firing only.

IMPACT IF NOT PROVIDED: If automatic controls are not provided, the possibility of another explosion as in Boiler No. 4 could occur.

COST ESTIMATING FORM
NAVDOCKS 2417 (REV. 5-63)

0105 013 3800

SHEET 1 OF 1

IDENTIFICATION NUMBER: P-755

AREA OR ND	ACTIVITY	LOCATION	CATEGORY CODE NUMBER
5th ND	MARINE CORPS BASE	CAMP LEJEUNE, N.C.	821-22

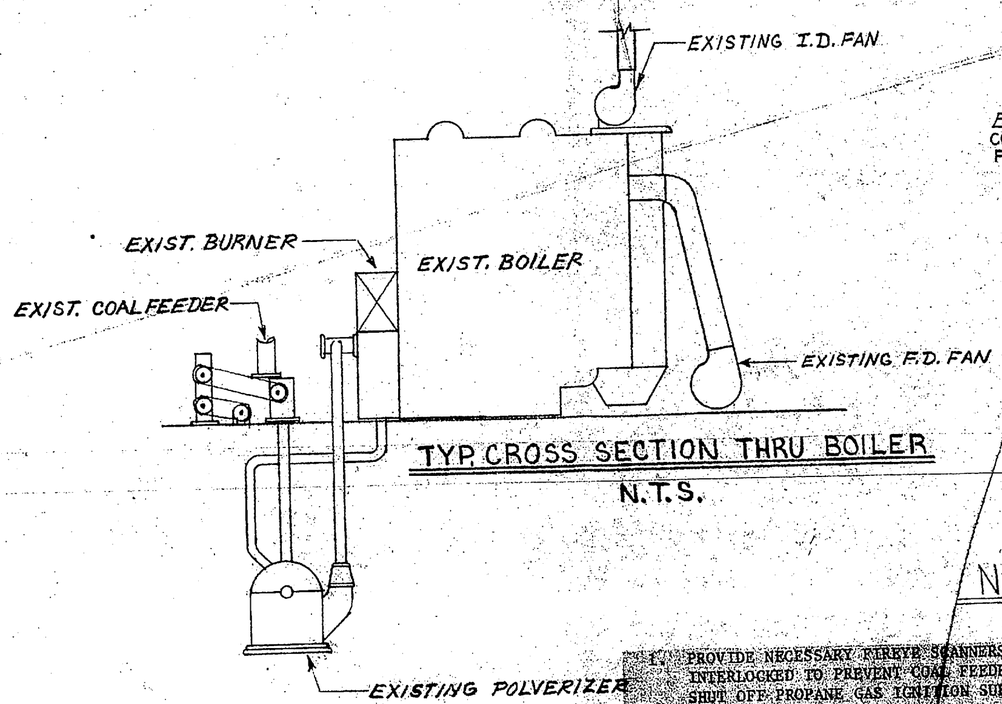
PROJECT (Or line item) TITLE

BOILER SAFETY CONTROLS, BLDG. 1700

ITEM (OR FEATURE) DESCRIPTION (Abbreviate if necessary)	QUANTITIES		MATERIAL COSTS		LABOR COSTS		ENGINEERING ESTIMATE	
	NO. OF UNITS	UNIT	UNIT COST	COST	UNIT COST	COST	UNIT COST	COST
1	2	3	4	5	6	7	8	9
Provide & install:								
(4) Fire sensors, (4) Auto gas pilots, relays & timers, Bailey comp. & hook-up of burners to coal mills		LS		22,000		6,800		28,800
250 CFM Air compressor	1	EA		8,000		1,500		9,500
Ref. air dryer	1	EA		2,800		1,100		3,900
SUBTOTALS				32,800		9,400		42,200
OVERHEAD - 15%								6,330
TAXES, INS., ETC. - 12% LABOR								1,128
SUBTOTAL								49,658
PROFIT - 10%								4,966
SUBTOTAL								54,624
BOND - 1.5%								819
SUBTOTAL								55,443
CONTINGENCIES - 10%								5,544
TOTAL PROJECT ESTIMATE								60,987
							SAY	61,000
10% DESIGN (Unfunded Cost)								6,100
TOTAL PROJECT COST								67,100

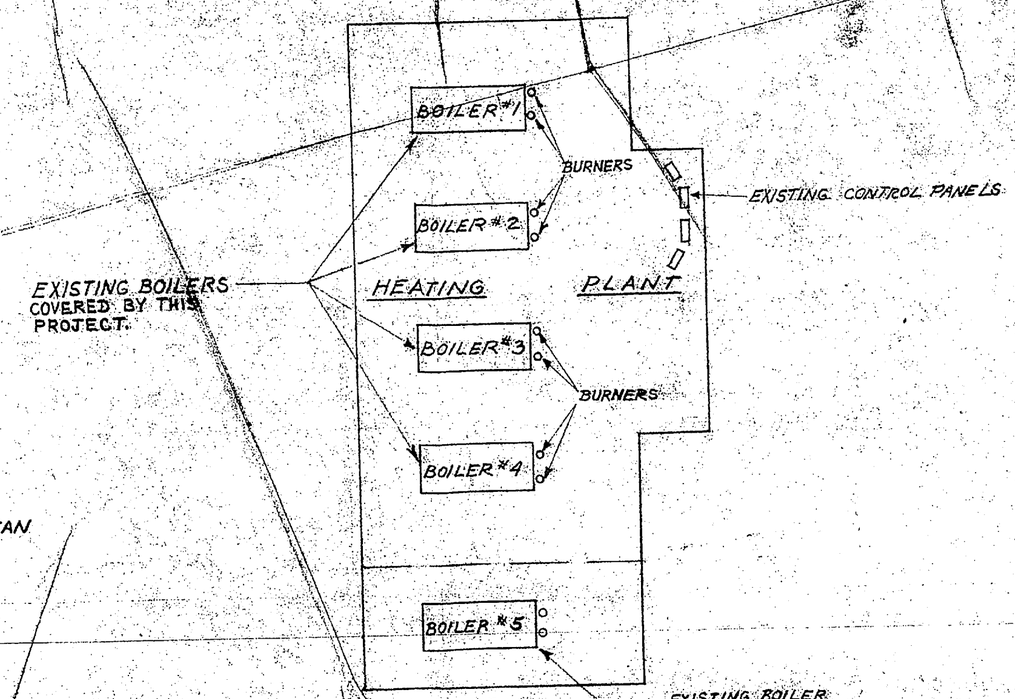
PREPARED BY	CHECKED BY	APPROVED BY	DATE
DELMAR D. WEAVER	R. H. KERLEY, P.E.	PUBLIC WORKS DEPT.	28 MAY 1970

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
A	ADDED NOTES 6, 7, 8 & 9	10-6-78	PHK



TYP. CROSS SECTION THRU BOILER

N.T.S.



BLDG. 1700

1" = 30'

NOTES

1. PROVIDE NECESSARY FIREYE SCANNERS TO MONITOR THE GAS PILOT AND COAL FLAME. SCANNERS SHALL BE INTERLOCKED TO PREVENT COAL FEEDER FROM OPERATING UNTIL A SUITABLE FIRE IS ESTABLISHED AND TO SHUT OFF PROPANE GAS IGNITION SUPPLY, AFTER A SUITABLE DELAY PERIOD, WHEN THE SCANNER SENSES A NO FLAME CONDITION.

2. PROVIDE A NEW AUTOMATIC GAS PILOT TO REPLACE EXISTING MANUAL TORCH. NEW AUTOMATIC GAS PILOT SHALL BE PERMANENTLY MOUNTED AND RETRACTABLE OR DESIGNED TO WITHSTAND CONSTANT EXPOSURE TO THE HEAT OF OPERATION.

3. UPGRADE EXISTING CONTROLS BY ADDING NECESSARY RELAYS AND TIMERS TO PROGRAM THE SYSTEM TO BE FULLY AUTOMATIC AND COMPATIBLE TO USE WITH EITHER COAL OR OIL. PROVIDE A SECOND PURGING SYSTEM FOR COAL SO THAT SYSTEM CAN BE PURGED FOR EITHER OIL OR COAL FIRING.

4. ADD NECESSARY BAILEY COMPONENTS IN THE EXISTING PANEL BOARD TO RATIO THE COAL/AIR MIXTURE AND TO CONTROL THE TWO BURNERS OF EACH BOILER TO OPERATE ON ONE COAL MILL.

5. PROVIDE A NEW CONTROL AIR COMPRESSOR, RECEIVER AND REFRIGERATED AIR DRYER TO SUPPLY DRY, OIL-FREE AIR FOR THE CONTROL SYSTEM OF THE ORIGINAL FOUR EXISTING BOILERS IN BUILDING 1700.

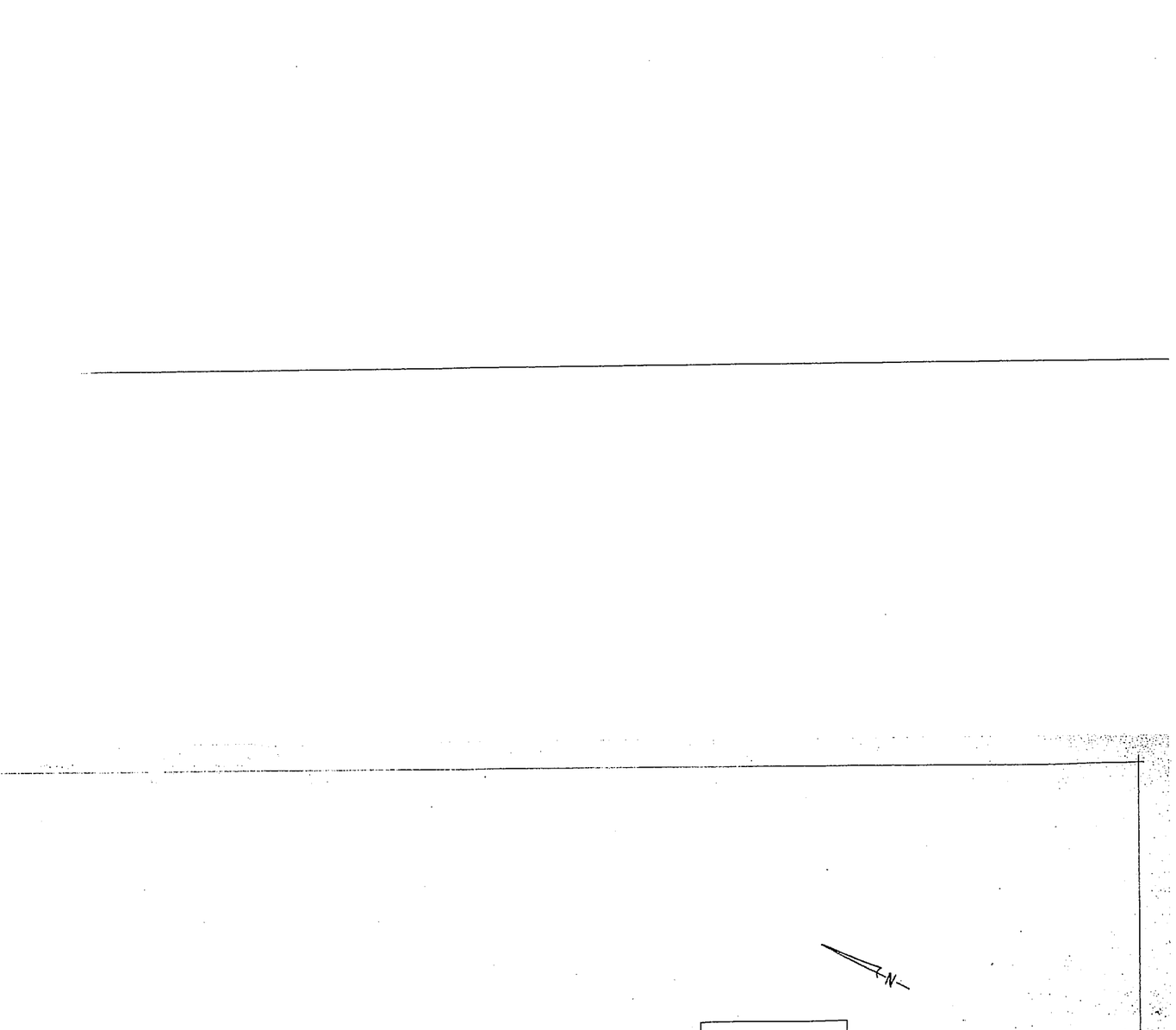
6. PROVIDE A NEW EMERGENCY DIESEL GENERATOR SYSTEM TO PROVIDE EMERGENCY POWER TO OPERATE COMPRESSOR & CONTROL CIRCUITS. IN CASE OF POWER FAILURE BOILERS CAN BE OPERATED ON NATURAL DRAFT.

7. PROVIDE INTERCOM UNITS SPECIALLY DESIGNED FOR HIGH-NOISE AREAS BETWEEN BOILERS 1 THRU 5 AND CONTROL PANEL.

8. PROVIDE A FIREYE & BAILEY MANUFACTURER'S REPRESENTATIVE TO SUPERVISE INSTALLATION OF THEIR RESPECTIVE EQUIPMENT.

9. PROVIDE EXTENSIVE ACCEPTANCE TESTING TO PROVE OPERATION OF CONTROLS.

P. W. DRAWING NO. 13980	MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA
DES T.H.H.	BOILER SAFETY CONTROLS BLDG. 1700 P-755
DRWN G.B.H.	
TR	
CHK A.W.H.	
SUPV.	
DIR DES P.H.K.	
APPROVED PUBLIC WORKS OFFICER	SUBMITTED COMMANDING GENERAL
	SCALE NOTED SHEET 1 OF 1 Y D DWG NO.

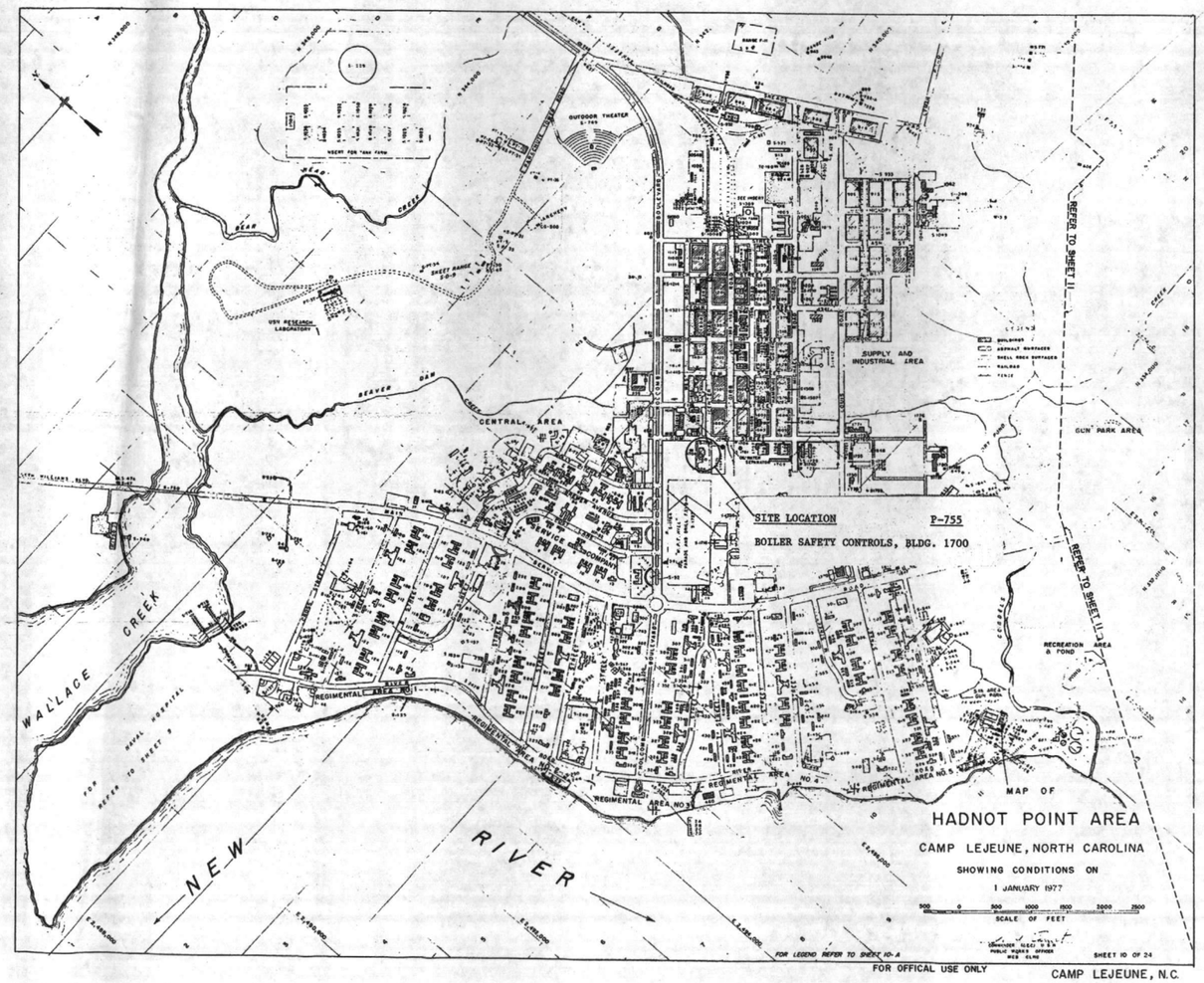


TYP. CROSS SECTION THRU BOILER
N.T.S.

NOTES:

1. PROVIDE NECESSARY FIREYE SCANNERS TO MONITOR THE GAS PILOT AND COAL FLAME. SCANNERS SHALL BE INTERLOCKED TO PREVENT COAL FEEDER FROM RUNNING UNTIL A SUITABLE FIRE IS ESTABLISHED AND TO SHUT OFF PROPANE GAS IGNITION SUPPLY AFTER A SUITABLE DELAY PERIOD, WHEN THE SCANNER SENSES A NO FLAME CONDITION.
2. PROVIDE NEW AUTOMATIC GAS PILOT TO REPLACE EXISTING HAND TORCH. NEW AUTOMATIC GAS PILOT SHALL BE PERMANENTLY MOUNTED AND RETRACTABLE OR DESIGNED TO WITHSTAND CONSTANT EXPOSURE TO THE HEAT OF OPERATION.
3. UPGRADE EXISTING CONTROLS BY ADDING NECESSARY RELAYS AND TIMERS TO PROGRAM THE SYSTEM TO BE FULLY AUTOMATIC AND COMPATIBLE TO USE WITH EITHER COAL OR OIL. PROVIDE A SECOND PURGING SYSTEM FOR COAL SO THAT SYSTEM CAN BE PURGED FOR EITHER OIL OR COAL.
4. ADD NECESSARY BAILEY COMPONENTS IN THE EXISTING PANEL BOARD TO RATIO THE COAL AND AIR AND TO CONTROL THE TWO BURNERS OF EACH BOILER TO OPERATE ON ONE COAL MILL.
5. PROVIDE A NEW CONTROL AIR COMPRESSOR, RECEIVER AND REFRIGERATED AIR DRYER TO SUPPLY DRY, OIL FREE AIR FOR THE CONTROL SYSTEM OF THE ORIGINAL FOUR EXISTING BOILERS IN BUILDING 1700.

P. W. DRAWING NO. 13980	MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA
DES THK	BOILER SAFETY CONTROLS BLDG. 1700 P-755
DRWN G.B.H.	
TR	
CHK AWH	
SUPV	
DIR DES THK	
APPROVED 5 JULY 73 PUBLIC WORKS OFFICER	SUBMITTED COMMANDING GENERAL
	SCALE NOTED SHEET 1 OF 1 Y. D. DWG NO.



FOR OFFICAL USE ONLY

CAMP LEJEUNE, N.C.

VZCZCBRA069
PTTUZYUW RUCLBRA1140 1991312-UUUU--RUEACMC.
ZNR UUUUU
P 181312Z JUL 78
FM CG MCB CAMP LEJEUNE NC
TO CMC WASHINGTON DC
BT
UNCLAS//N11000//
FOR LFF

PRIORITY

SUPPLEMENTAL MINOR CONSTRUCTION PROJECT P-755, BOILER SAFETY CONTROLS, BLDG 1700

A. CG MCB CLNC LTR PWO:280:MKC 11000 OF 20 MAY 1978

1. REFERENCE (A) SUBMITTED SUBJECT PROJECT AS PRIORITY NUMBER 1 FOR FY 79 MINOR CONSTRUCTION PROGRAM IN ORDER TO PROVIDE COAL BURNING CAPABILITY AT THE CENTRAL STEAM PLANT DURING WINTER 78/79. DUE TO BOILER EXPLOSION 3 NOV 1977, SUBJECT BOILER SAFETY CONTROLS ARE REQUIRED BEFORE BURINING COAL. FY 79 FIRING PLAN IS 70 PERCENT COAL 30 PERCENT OIL. REVERTING TO 100 PERCENT OIL FIRING WILL COST AN ADDITIONAL $452,800 DURING FY 79.

2. SUBJECT PROJECT REQUIRES DESIGN AND ADVERTISING (APPROXIMATELY 60 DAYS) AND WILL REQUIRE APPROXIMATELY 60 DAYS FOR INSTALLATION.. IF FUNDS CANNOT BE MADE AVAILABLE THIS FY, REQUEST AUTHORITY TO DEVELOP PLANS/SPECIFICATIONS IMMEDIATELY FOR ADVERTISEMENT AND AWARD ASAP AFTER 1 OCT 78.

BT
#1140 TOD: 18 16 29z JULY 1978
REL: MC LAUGHLIN, MAJ
DIST: BMO, PWO

NNNN

ENCL (2)

Jul 21 22 05z 78

VZCZCRBA566
RTTUZYUW RUEACMC1415 2022115-UUUU--RUCLBRA.
ZNR UUUUU
R 211427Z JUL 78
FM CMC WASHINGTON DC
TO RUCLBRA/CG MCB CAMP LEJEUNE NC
BT
UNCLAS //N11019//
SUPPLEMENTAL MINOR CONSTRUCTION PROJECT - BOILER SAFETY CONTROLS, BLDG 1700 (CMC CODE LFF-2)
A. CG MCB CAMP LEJEUNE 181312ZJUL78
1. REQUEST CONT THE REF FOR AUTH TO DEVELOP PLANS AND SPECS FOR ADVERTISEMENT AND AWARD AFTER 1 OCT 78 SUBJ PROJ APPROVED.
BT
#1415

TOR: JULY 21 22 05z 78
ACT:PAC
INFO:COMP,PWO

ORIGINAL

ACTION

21 14 27 JA

ENGINEERING SERVICE REQUEST

NAVDOCKS 2038 (Rev. 2-61) 0105-011-5000

Submit in Quadruplicate

1. Copy No.

2. FROM
Commanding General, Marine Corps Base, Camp LEJEUNE, NC

3. TO
Commander, Atlantic Division, Naval Facilities Engineering Command, Norfolk, VA 23511

4. REFERENCES
Project P-755, Boiler Safety Controls, Bldg. 1700

5. SSDB OR SPECIAL PROJECT NO.

6. ENCLOSURES (Check)

☐ NAVCOMPT 140 ☐ NAVCOMPT 2038 ☐ NAVCOMPT 372 ☒ OTHER (Explain) (1) Project Submission P-755 dtd 24 May 1978

7. TYPE OF SERVICES REQUESTED
Plans, specifications & estimate for: Installation of Boiler Safety Controls, Bldg. 17

8. DETAIL OF WORK
1. The existing flame safety controls in Bldg. 1700 are presently adequate only for automatic firing on oil. They must be modified to allow safe automatic firing on coal for boilers 1 through 4.
2. Martin's Control & Equipment Co. of Richmond, Va. is preparing a list of Honeywell & Bailey equipment needed for safe automatic firing on coal. Report is due NLT 1 September and will be forwarded on receipt.
3. Equipment will be purchased locally and provided to the contractor as GFE
4. Include an additive bid item to provide and install an emergency generator to operate the controls and boilers on mechanical draft during power outages.
5. Additional information can be obtained from J. Russo, LANTDIV Code 112.

Reading file

9. FOR INFORMATION CONSULT (Name, title and phone)
T. H. HANKINS, JR., P.E. Autovon 484-3233

10. OFFICIAL REPRESENTATIVE (Name and Date)
J. T. SHERRON, LCDR, CEC, USN - 16 Aug 1978
By direction

RESERVED FOR DPWO ENTRIES

11. DATE RECEIVED IN DPWO

12. SERVICES TO BE PERFORMED BY DPWO (Check)
☐ DESIGN ☐ OTHER (Explain)

13.

14. SCOPE OF CONTRACTS

15. OTHER

16a. ESTIMATED STAFF DATE

16b. APPROVED REPRESENTATIVE (Name and date)

MARTIN'S CONTROL & EQUIPMENT CO.

SALES—SERVICE

2536 N. Lombardy Street Richmond, Va. 23220

August 21, 1978

C. A. Tack
Commander,CEC, USN
Department of The Navy
Naval Facilities Engineering Comman Contracts
Jacksonville, North Carolina Area
Marine Corps Base, Camp LeJeune, North Carolina 28542

Re: 43-510:MLE:mle
N62470-78-C-3079

Dear Commander Tack,

This is in reply to the contract number above for our recommendations for equipment needed, and for procedure necessary for safely controlling the boilers when using either oil or coal.

We recommend the following equipment:

8 - (2 per burner) #38-54 Fireye (ECA) volt meters.
8 - (2 per burner) #23-200-L Spottswood Parker Ignitors, see sheet enclosed.
4 - (1 per burner) #45RM1 Fireye Scanners (ECA) see sheet enclosed.
8 - (2 per burner) #Series 114BA-2BD Valves-in-Head Cyclinders, see enclosed sheet.
8 - (2 per burner) #4PDT McGill BP-22 transfer switch
8 - (2 per burner) #ATC 305D-016 Timer
8 - (2 per burner) A&B-700 R110-120-60Hz Relays
8 - (2 per burner) A&B-700 R220-120-60Hz Relays
4 - (1 per boiler) Auxiliary Panel Hoffman #A161606 LP + A16P16
4 - (1 per boiler) Bailey FT310 Hand-auto station
4 - (1 per boiler) Bailey FC 210 Controller
4 - (1 per boiler) Bailey FC 110 Controller
✓4 - (1 per boiler) Bailey Solenoid Valve #5322-137A3
✓8 - (2 per boiler) Bailey select Relay #5322732-H2
✓8 - (2 per boiler) Bailey Bias Relay #5319335-1
4 - (1 per boiler) PRV 0-30 PSI

Continued...

August 21, 1978

In order to operate safely I would recommend to:

Add eight remote flame signal volt meters to operate in central control panel using two per boiler.

Change existing pilots out to new Type Spottswood Parker 500,000 BTU at 4.5 PSI

Make damper between F. D. fan and Wind box on each burner automatic and wire into the system, to be closed when firing only one burner, but to be open during purge cycle using a pneumatic cyclinder.

Add one additional scanner per burner. Model B G C scanner type 45RM1 to monitor the coal flame. This scanner is to be wired into present Fireye system per attached sheet. (There is a need for the air to be purged in order to operate correctly.)

Add 4PDT transfer switch to each burner. This will enable the existing Fireye panel to be utilized. The operator will be required to start the fan, purge boiler, prove all dampers, fuel temperatures, and pressures all at their correct settings and positions using E. Keeler Co. Faber Burner Division Drawing Number 15407-W-2 Dated 7/12/72.

There is a need to by pass the oil temperature and pressure switches, transfer the oil valve circuits to a mill coal relay.

Add new timer for ignition on coal cycle. ATC-305D-016-8 needed. Also use 8 auxiliary relays A-B 700-R220 120V.

Add new Bailey steam flow fuel flow, air flow controls. This will allow coal burner to function automatically the same as the oil burners. Allowing one or both mills to operate automatically. The present Bailey system is a mini 500 series. The new items are the Bailey mini 520 series. A 250 CFM air Compressor is large enough for the system.

RECOMMENDED BOILER OPERATION

The cold boiler should be started on oil and heated up to the point that the make-up air and primary air for the coal mill are up to operating temperatures Leave one oil burner on and start the coal mill on the second burner. After the mill and feeder are warmed up and the coal burner is working correctly, shut the oil burner down and proceed to start the second coal unit.

The piping around the front of the boiler needs to be re-worked so that the operator can have free access to all valves. If the operation of the boilers remains on a manual basis, the gas pilot and oil valves should be relocated near the burner so that the operater can stand in an up right position for operation.

I will never recommend igniting the boilers manually, except in extreme emergencies. I see a great need for an inter-phone system of some type to enable the main operator to talk with assistants at each boiler on the front and lower levels.

If there are any further questions regarding this job, please don't hesitate to call on us.

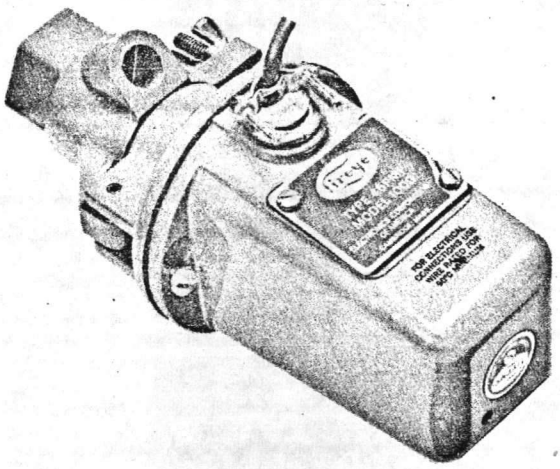
Very truly yours,

Martin L. Johnson

Martin L. Johnson
Martin Control & Equipment Co.
2306 N. Lombardy Street
Richmond, Va. 23220

CU17677
Supersedes June 1976.

Bulletin CU-17
June 1976



fireye

B.G.C. Scanner

Installation Instructions for the Background Gain Control Scanner

APPLICATION

The 45RM1 flame scanner incorporates a number of unique features to provide excellent flame detection and discrimination when firing pulverized coal, oil or other fuels which radiate visible light during the combustion process. Outstanding operation is achieved by combining a background gain control amplifier and threshold detector with other circuits to yield a unit which automatically adapts its sensitivity to the firing conditions and provides a clear indication of flame presence or absence in spite of surrounding radiation sources.

OPERATION

The 45RM1 capitalizes on the relationship of two bands of modulation frequencies of the visible and near infrared radiation occurring within a flame. As shown in Figure 1 (solid lines), low-frequency (below 100 Hz) modulation is at its weakest, and high-frequency (200-600 Hz) modulation is at its greatest in the primary combustion zone.

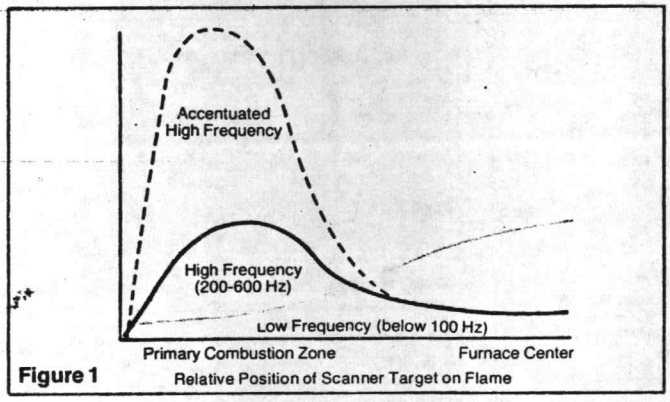


Figure 1

Through a narrow sight angle, radiation from the primary combustion zone is focused on a silicon detector in the 45RM1. Modulation signals from the detector are passed to a Background Gain Control (BGC) amplifier which amplifies the signals disproportionately. The result is to accentuate (dashed line, Figure 1), the high-frequency component, the prime indicator of flame presence and intensity. This accentuation is the key to the effectiveness of the 45RM1.

The gain of the BGC amplifier increases with a decrease in over-all flame intensity. Thus sensitivity is greater if the flame is partially obscured by a coal shroud, recirculated dust, etc.

The signals then pass through a gain-setting potentiometer into a bandpass amplifier (see Figure 2), which discards the low-frequency signal and amplifies the high-frequency component.

The threshold detector controls the output of the signal detector/pulse generator, disabling its output until the average amplitude from the bandpass amplifier reaches a pre-set minimum level. Once the output is enabled, it is allowed to continue until a second, lower limit is reached. The threshold detector thus prevents spurious signals from giving ambiguous flame-status information.

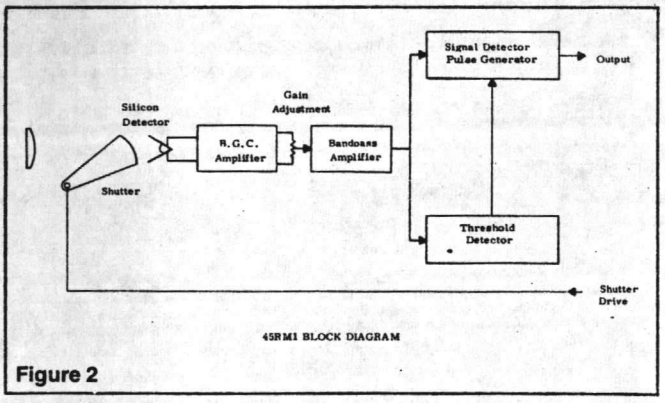


Figure 2

The frequency of pulses from the signal detector/pulse generator is proportional to the signal intensity from the bandpass amplifier. Thus, upon flame failure, the pulses stop immediately. The output circuit is such that the 45RM1 is compatible with the flame safeguard controls listed below.

Also included in the scanner is a shutter that permits a self-checking circuit in the amplifier to verify that the scanner and the signal circuits are producing valid flame-presence information.

FIREYE DIVISION
ELECTRONICS CORPORATION OF AMERICA

SPECIFICATIONS

HOUSING:

Material – cast aluminum

Design – hinged swing-away head for ease of lens cleaning — Models 1000 and 1002; fixed head, models 1001 and 1003.

Dimensions – refer to Figure 3

Weight — 2.6 lb. (1.2 kg.)

MOUNTING:

1 in. NPT tapping. May be sighted through a glass observation port having a line of sight through the windbox to the primary combustion zone or through a sight pipe mounted in the windbox.
(Heat insulating nipple provided.)
Models 1002 and 1003 have Whitworth thread; models 1000 and 1001 have USNPT.

ELECTRICAL:

Power Requirement – 5 VA 50/60 Hz. from associated flame amplifier

Connection – ½ in. NPSM tapping for clamp (supplied)

Terminals – four #8 binder head screws protected by a gasketed coverplate

Adjustment – potentiometer adjust with screwdriver via access hole at rear of housing; plug supplied for sealing hole against dirt

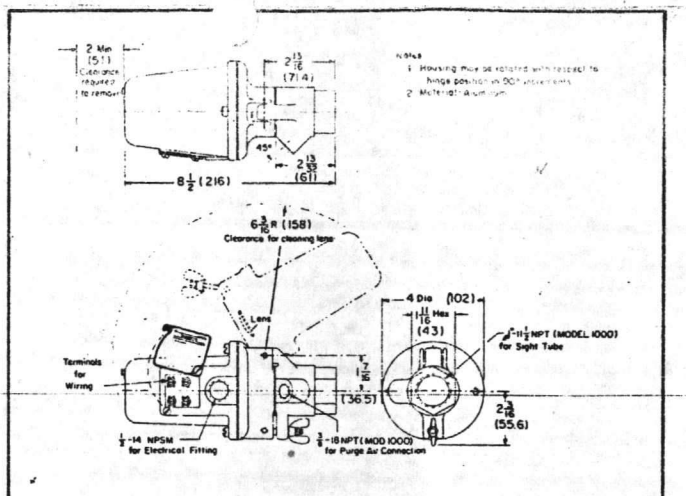
PURGE AIR:

(Required when the scanner lens is exposed to furnace or windbox pressure.)

Source – clean ambient

Volume required – 10 CFM at 4 in. WC differential above windbox.

Connection – WYE or TEE in mounting pipe



Dimensions

Figure 3

OPTICS:

Material – glass

Spectral response – 5,000 to 9,500 Angstrom

Field of view – 4 degrees

INSTALLATION:

Case Temperature – 0 to 65 Deg. C max.

Humidity – 0 to 95% noncondensing

Specifications are subject to change without notice.

COMPATIBLE FLAME AMPLIFIERS

GROUP I

Self-checking units capable of operation with one or two scanners (refer to Figure 5 or 6 for electrical connection).

25SU3 Models: 4163 4164 4167 4168

GROUP II

Self-checking units capable of operation with one scanner (refer to Figure 6 for electrical connection).

25SU3 Models: 4157 4158 4162 4165 4166

25SU5 Models: 4011 4112 4117

GROUP III

Non-self-checking units capable of operation with one or more scanners (refer to Figure 7 for electrical connection).

25SU3 Models: 1157 1158 1160 1161 1162 1166

25SU5 Models: 1011 1111 1112 1117

Refer to the appropriate bulletin for information and specifications on the above.

INSTALLATION

Location and Mounting

The BGC scanner determines the presence of a flame by taking into account the amount of radiation received from the primary combustion zone relative to that received from other parts of the flame and other flames. For this reason the scanner must be positioned so that the primary combustion zone of the flame being monitored is directly in front of the scanner for all firing rates which will be experienced. The only restriction on this is that the primary combustion zone to be monitored by the scanner must be the only one within the field of view of the scanner. Since the flame in the furnace interior masks the primary combustion zones of opposing burners, these need not be taken into account when the mounting location is selected.

The scanner can be mounted either external to the furnace and sighted through a glass observation port or on a sight pipe which is open to the furnace interior. When the scanner is mounted, a continuous flow of air is required to prevent the convection of heat to the unit and to prevent the buildup of ash in the pipe. A flow of 10 CFM introduced via a fitting in the mounting pipe will perform this function. The scanner should be mounted on the heat insulating nipple supplied in order to restrict the conduction of heat to the unit.

Once the mounting location and method has been determined, a 2 in. diameter hole should be cut in the front plate or an adapter attached to the observation port and a swivel mount, ECA part no. 60-1178-2 or 60-1178-4, installed. Any vanes, etc. which would block the proposed line of sight should be removed. Refer to Figure 4 and install the scanner. The use of the reducers and the small diameter nipple to improve discrimination is explained later.

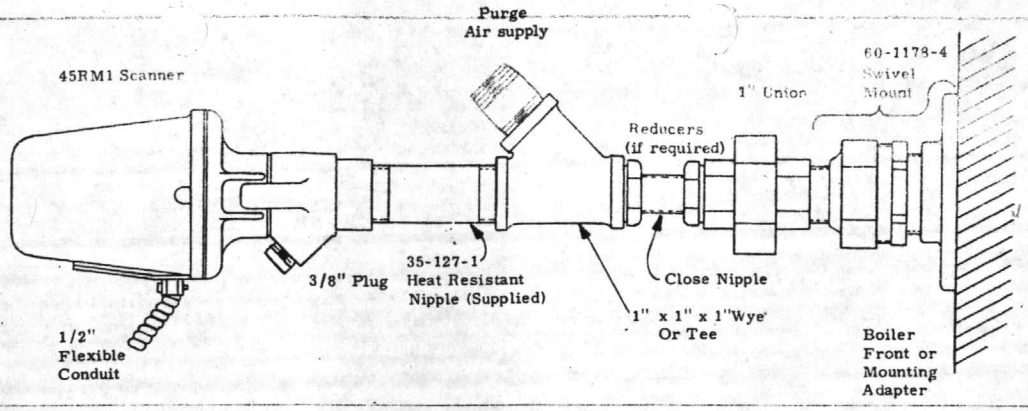


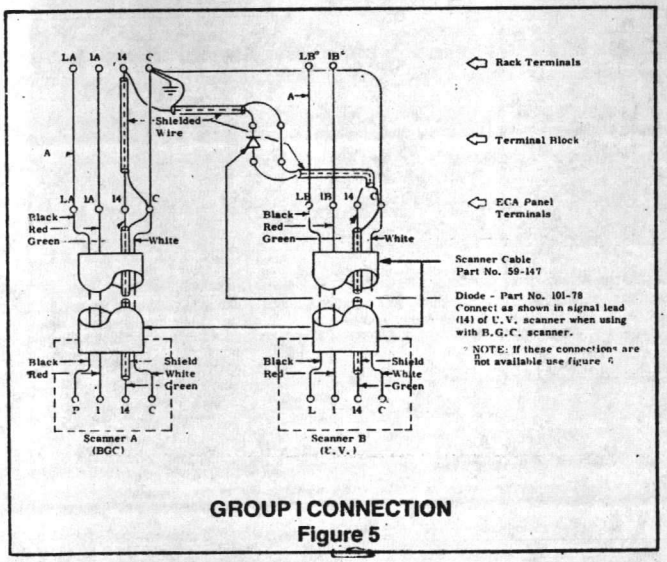
Figure 4

Control and Scanner Wiring

All wiring to the scanner should be rated at 600 volts and 90 deg. C. For runs less than 1000 feet the use of ECA Scanner Cable (1 shielded; 3 unshielded 16 AWG wires), part no. 59-147, is recommended. For runs in excess of 1000 feet consult the factory.

For ease of installation and occasional lens cleaning, the wires should be routed to the screw terminals in the scanner via a flexible conduit.

For Group I amplifiers the wiring connections are as shown in Figure 5. Since the output transformer of a UV-type scanner is a low impedance load on the signal lead (14) and would overload the output circuit of the BGC scanner, if they were connected in parallel, when the two scanners are used together, it is necessary to connect a blocking diode, ECA part no. 101-78, as shown. If the application requires that only one scanner be in use at any time, the other unit can be removed from operation by breaking the power lead (LA or LB) at "A".



GROUP I CONNECTION
Figure 5

For Group II amplifiers the wiring connections are shown in Figure 6. If the intended use requires that the amplifier input signal come from one of two or more scanners, the power and shutter drive signals should be switched between scanners using a single relay "S" or selector switch. As with Group I amplifiers, the blocking diode is necessary when using the BGC scanner with a UV unit.

Group III amplifiers (non-self-checking type) should be connected as shown in Figure 7. Note that with these amplifiers, terminal 1 on the scanner, the self-checking shutter

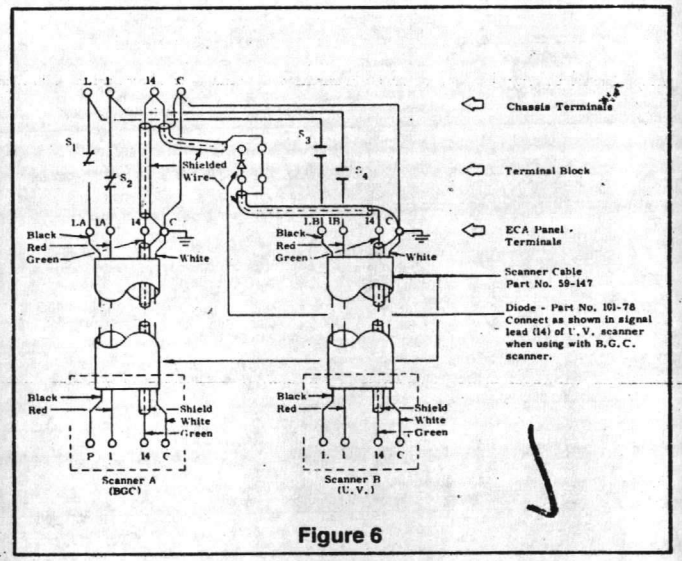


Figure 6

connection, is not used. If more than one scanner is used, power for additional units can be obtained from terminal 1 of the amplifier through a .33 MFD capacitor, ECA part no. 7-464, or the power available at terminal L can be switched to the operating scanner. With the connections as shown the unwanted scanner can be turned off by breaking the power lead at "A". As with Group I and II amplifiers, the diode should be used when the BGC scanner is used with a UV unit.

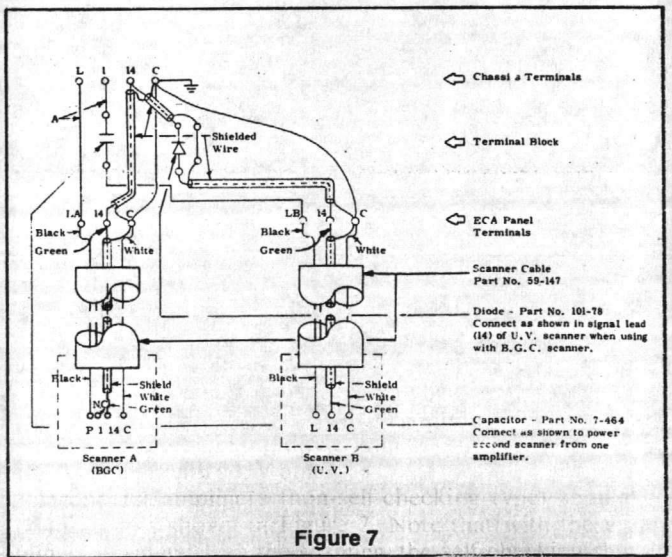


Figure 7

SIGHTING AND ADJUSTMENT

For the final adjustment and sighting of the unit, it is recommended that a pair of wires be connected to the auxiliary flame meter terminals on the flame amplifier, brought out to the scanner location and a flame meter, ECA part no. 38-54, 38-55 or 38-81 connected. A multimeter having an input impedance of 20,000 ohms/volt and set on a 3 volt range can be used in place of the flame meter. The initial setting of the adjustment at the rear of the scanner should be fully clockwise (maximum gain) and the flame amplifier should be set for maximum sensitivity. For ease of reading the flame meter, the self-checking shutter should be disconnected. With the shutter disconnected the flame relay on self-checking amplifiers will be deenergized.

After the scanner wiring has been completed and the unit installed on the swivel mount, a preliminary sight angle can be determined. Loosen the wing nut at the side of the scanner head and swing the unit open. Next loosen the nut on the swivel mount and, looking down the sight pipe, position the assembly so that it is aimed directly at the primary combustion zone. Tighten the nut on the swivel mount sufficiently to hold the position. Reclose the scanner and tighten the wing nut.

Shortly after applying power to the flame amplifier, the flame meter should begin to indicate that the scanner sees the primary combustion zone. If the meter registers zero, power should be removed, the wiring checked over and all errors corrected. With power reapplied, the voltages at the terminals in the scanner should be:

C to P 150-170 VAC

C to 1 pulses to 15 VDC every 6 sec.

Polarity; Terminal 1 plus for Group I, minus for Groups II and III.

(Shutter connected)

The correct operation of the scanner and the amplifier can be proven by holding the scanner very close to a high intensity reading light or fluorescent tube. With the shutter connected, the flame meter reading will drop every 6 seconds as the self-checking shutter closes.

To determine the best sight angle, the sensitivity adjustment on the flame amplifier should be turned down to 32 and the gain adjustment in the scanner turned down, counterclockwise, until the flame meter reads approximately 4 (1.6 volts). Loosen the nut on the swivel mount and reposition the scanner until the point is found which gives the maximum reading on the flame meter. Readjust the gain to obtain a reading of 4 and verify the sight angle. Retighten the nut.

When the scanner mounting has been adjusted for the highest reading on the flame meter, the sensitivity of the flame amplifier should be set at 32 and the gain of the scanner adjusted to maximum clockwise rotation. The firing rate of the burner should then be swung through its full range and the behavior of the flame meter noted. The meter reading should be zero when the burner is not firing, rise to a low reading at minimum firing rate, increase to a reading above 6 at the maximum firing rate, decrease to the low reading again at minimum rate and drop to zero when the fuel is shut off. If the flame meter continues to read zero at minimum firing rate, increase the gain of the scanner. Conversely, if the flame meter shows a non-zero reading after the fuel has been shut off and all residual fuel has cleared the burner, reduce the scanner gain, and repeat above tests.

Due to the way in which the BGC amplifier works, an improvement in signal can often be achieved by limiting the field of view of the scanner. This is especially true when the flame being scanned is very bright. Installing a smaller diameter section in the mounting pipe as shown in Figure 4 accomplishes this. To determine the best diameter for the application compare the signal using sizes of ½, ⅜ and ¼ inches and select the size having the best result. The adjustment of the scanner and flame amplifier are as outlined above.

The active field of view of the flame surface should be from 50 to 150 cm^2 (8 to 25 in^2). For application where the flame front is 4.5 meters (14.8 ft.) or more from the scanner mounting surface, replace 45 RMI front flange assembly and lens assembly with long-range adapter, part no. 60-1622.

ELECTRONICS CORPORATION OF AMERICA

FIREYE DIVISION, SYSTEMS DEPT.

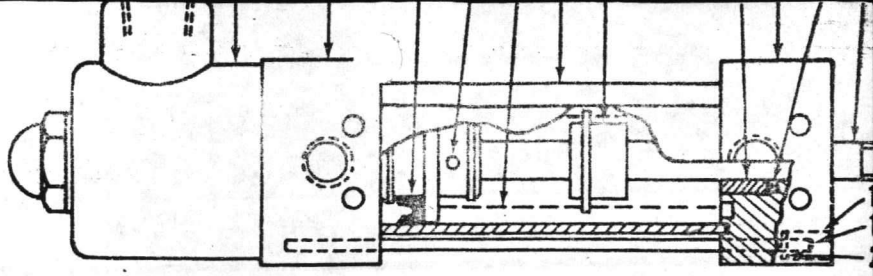
One Memorial Drive—Cambridge, Massachusetts 02142

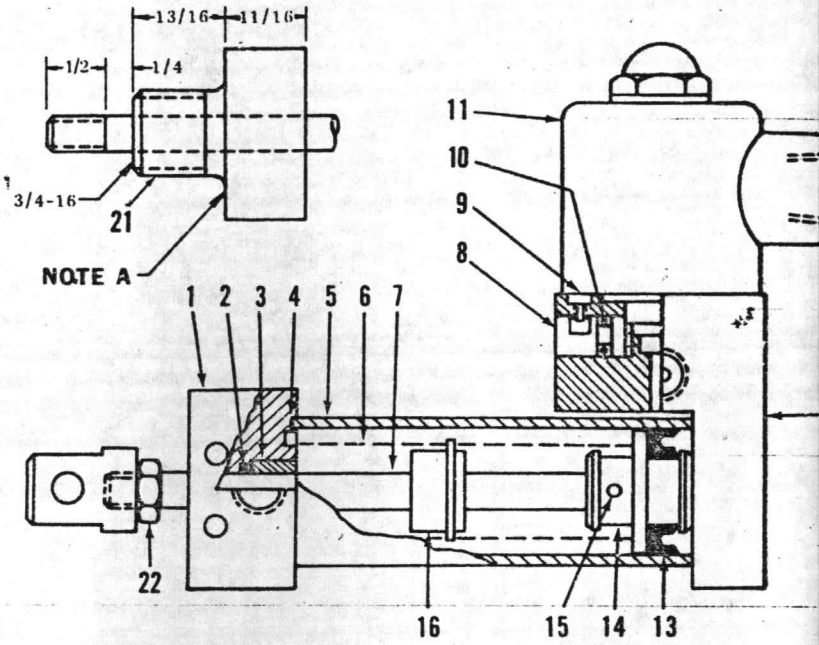
Factory Area Offices: BOSTON · NEW YORK · PHILADELPHIA · ATLANTA · CLEVELAND · DETROIT · CHICAGO · HOUSTON · LOS ANGELES · SAN FRANCISCO

Subsidiaries: ECA (CANADA) LTD., TORONTO · ECA (GREAT BRITAIN) LTD., LONDON · ECA (EUROPE) N.V., BRUSSELS · ECA (FRANCE) S.A., PARIS · ECA (ITALIA) S.p.A., MILAN · ECA (DEUTSCHLAND) G.m.b.H., DUSSELDORF · ECA (NEDERLAND) N.V., AMSTERDAM

1	3322	ROD END CAP
2	902-6	O-RING
3	2172	ROD BEARING
4	1874	GASKET
5	1762	TUBE
6	[illegible]	SPRING
7	[illegible]	PISTON ROD
8	2976	MANUAL OPERATOR (see "OPTIONS" below)
9	915-2	SCREW
10	902-5	O-RING
11	3745	SOLENOID ASSY (standard solenoid illustrated (see "OPTIONS" below)
12	3418	END CAP (for "D" OPTION, see below)
	3392	END CAP (with manual operator) (see "OPTIONS" below)
13	1873	U-CUP PACKING
14	1774*	PISTON
15	1967	PIN
16	2227	SPACER
17	3321	END CAP (for "D" OPTION, see below)
	3340	END CAP (with manual operator) (see "OPTIONS" below)
18	2586	NUT, tie rod
19	2228	TIE ROD
20	907-10	LOCKWASHER, tie rod
21	2860	STUD MOUNT
22	2157	LOCKNUT
23	3544	CLEVIS (untapped mounting holes)
	4392	CLEVIS (tapped mounting holes)
24	3541	PIVOT (untapped mounting holes)
	4393	PIVOT (tapped mounting holes)
25	3227	ROD CLEVIS
26	3538	FLANGE
27	4393	SCREW, No. 10-32 x 7/8

* PISTON, part #1774 and ROD, part #1775, available only as an assembly, part #2174.





PRICE LIST - - CYLINDERS - - with 2BD SOLENOID VALVE PILOT

BASIC VALVE IN HEAD CYLINDER	114BA-2BD*	34.30	114CA-2BD*	42.65
With clevis mount	-	-	114CA-2BD*	48.30
With pivot mount	-	-	114CC-2BD*	48.30
With front flange mount	114BD-2BD*	39.40	114CD-2BD*	47.75
With rear flange mount	-	-	114CE-2BD*	47;75
With stud mount	114BH-2BD*	40.55	114CH-2BD*	48.90
Add per inch of stroke to 4"		1.40		1.40
** Above 4", non-stock and long stroke charges apply.				

* 2BD Solenoid listed is standard, less manual operator. See options below.

PRICE LIST -- ACCESSORIES

Clevis mount (3544)	5.65
Pivot mount (3541)	5.65
Front flange mount (3538)	5.10
Rear flange mount (3538)	5.10
Stud mount (2860)	6.25
Rod clevis (3227)	3.65
Pin and snap rings	.95

OPTIONS

SOLENOID:
For J.I.C. SOLENOID (2C) add. 7.80
For EXPLOSION PROOF SOLENOID (2K) add 14.05

* MANUAL OPERATORS:
Suffix "D" indicates no manual operator in solenoid.
IMPORTANT: Replace letter "D" with one of the following letters to indicate Manual Operator desired:
"A" -- Flush (turn) locking type.add $2.50
"B" -- Extended (turn) locking type add $2.50
"C" -- Flush non-locking type add $2.50

STROKE

** Cylinders are stocked in 1/2" stroke increments up to 4". All others are non stock.

** Add for long stroke:
4" thru 6" 3.65
6" thru 12" 9.90
12" & Over 19.65
Plus 3.40 non-stock ϕ
Non-stock charge will be eliminated on one order of 20 or more identical cylinders.

NOTE A STUD MOUNT . . . When used replaces End Cap, part No. 3322.

NOTE B MOUNTING HOLES . . Two through mounting holes, 13/64" diameter.

NOTE C TRUNNION MOUNT . . . Rod End Cap only. Add $11.20 to base cylinder cost. Trunnion pins assembled at 90° to ports.

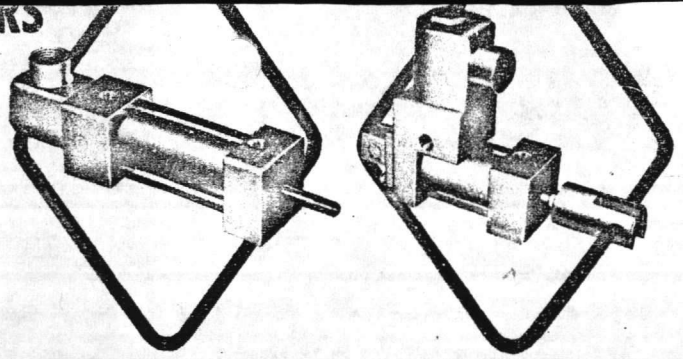
MOUNTINGS

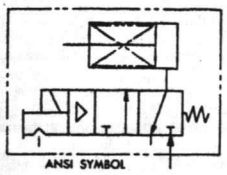
Basic Cylinder provides:
Horizontal (foot) mount at front end cap on 114BA and 114CA.
Vertical (flush) mount on front end cap only on 114BA.
Vertical (flush) mount on front and rear end caps on 114CA.
These mounting options are standard at no extra cost.

OPERATING PRESSURES:
Standard . . . . . 125 psi
Option "H" 2.85 . . . . . 200 psi

Series 114 VALVE-IN-HEAD CYLINDERS

SINGLE ACTING — 1-1/8" BORE

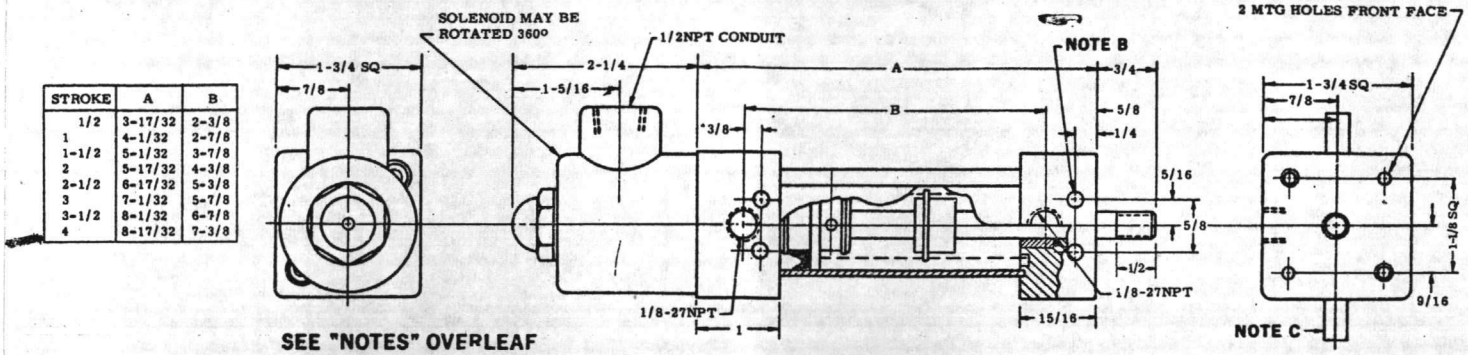




MODELS 114BA: 114BA-2BA

See overleaf for ordering information

STROKE	A	B
1/2	3-17/32	2-3/8
1	4-1/32	2-7/8
1-1/2	5-1/32	3-7/8
2	5-17/32	4-3/8
2-1/2	6-17/32	5-3/8
3	7-1/32	5-7/8
3-1/2	8-1/32	6-7/8
4	8-17/32	7-3/8



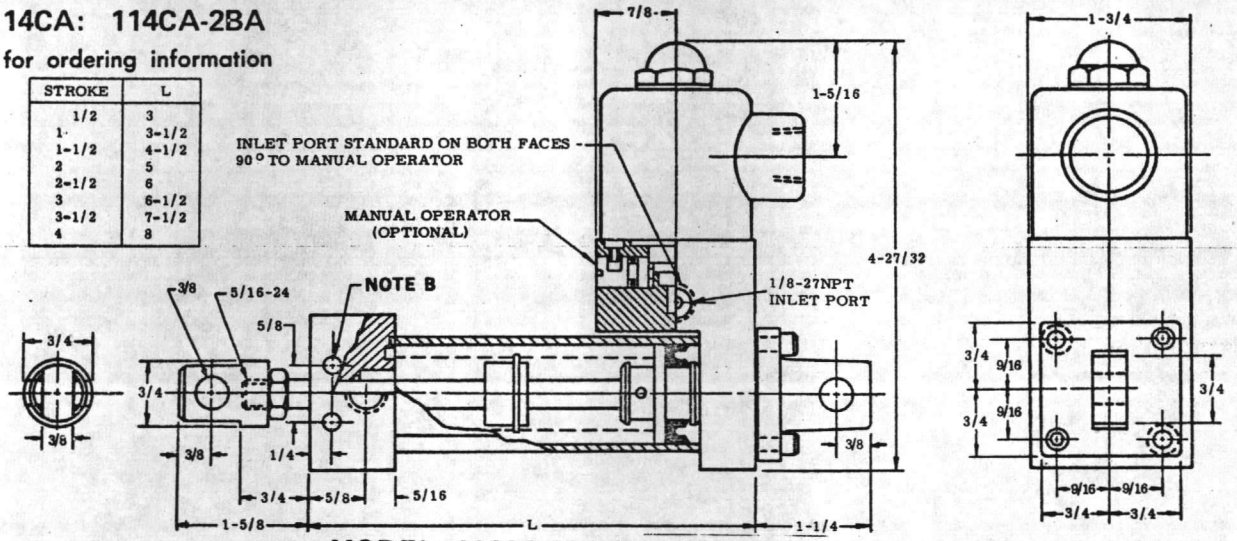
SEE "NOTES" OVERLEAF

MODEL 114BA-2BD ILLUSTRATED

MODELS 114CA: 114CA-2BA

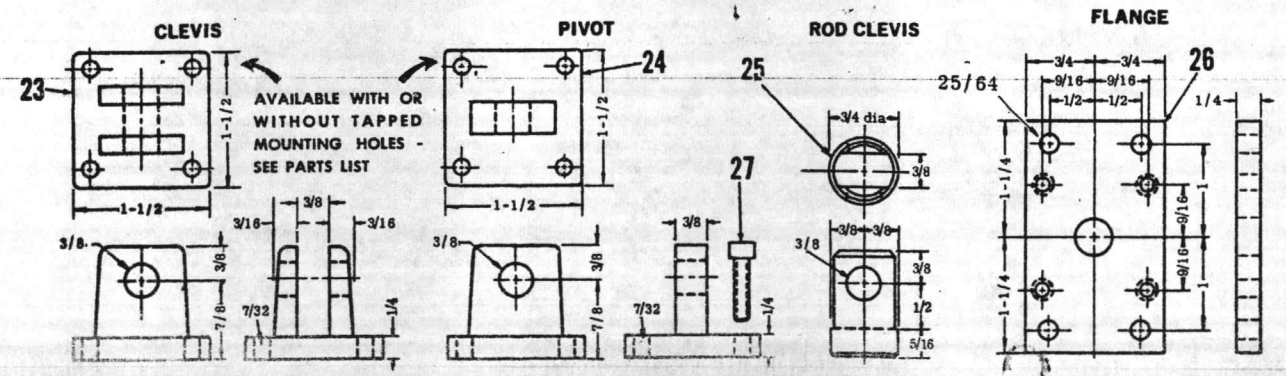
See overleaf for ordering information

STROKE	L
1/2	3
1	3-1/2
1-1/2	4-1/2
2	5
2-1/2	6
3	6-1/2
3-1/2	7-1/2
4	8

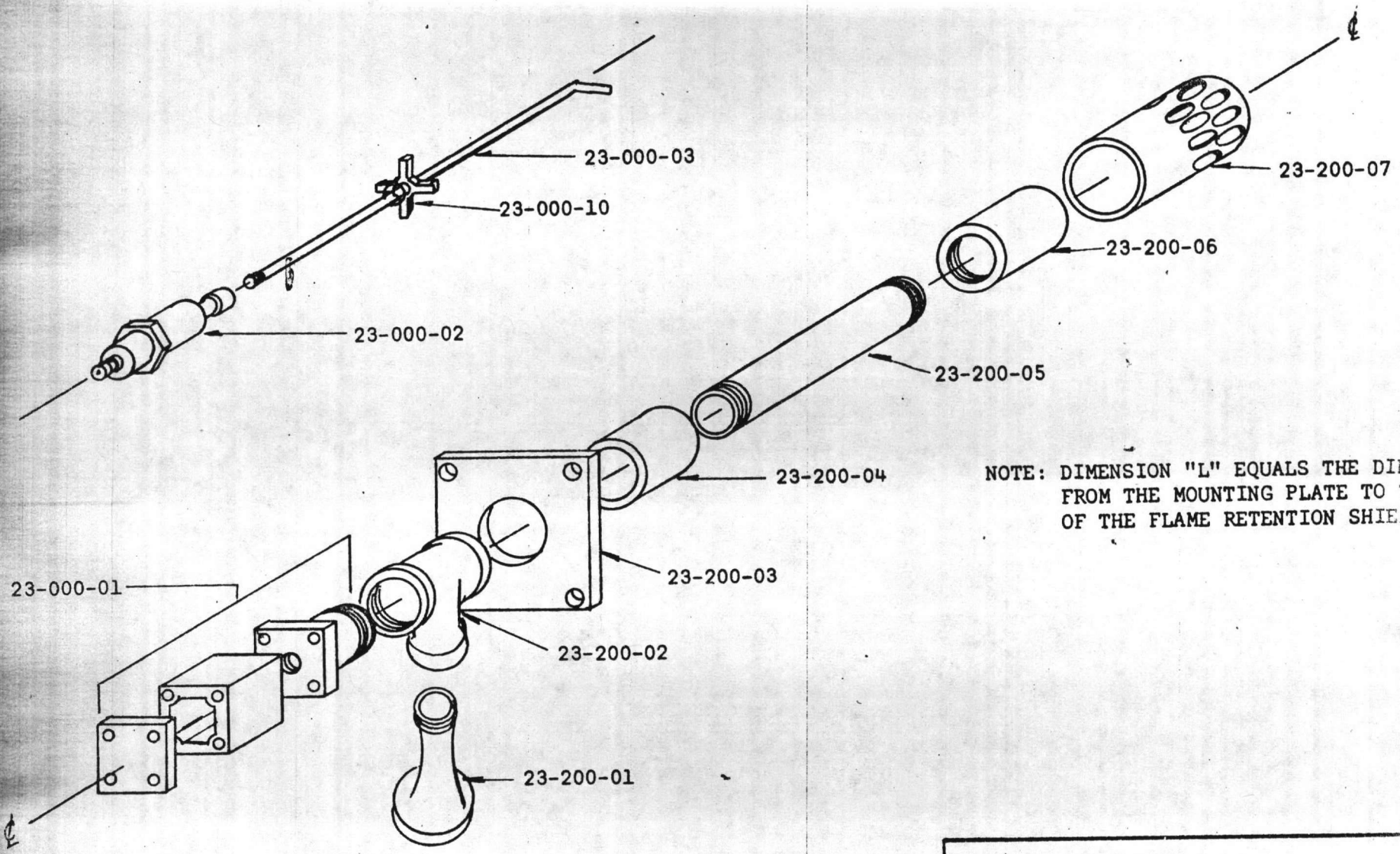


MODEL 114CC-2BA ILLUSTRATED

ACCESSORIES



AUTOMATIC VALVE CORP.
37415 Grand River, Farmington, Michigan 48024



NOTE: DIMENSION "L" EQUALS THE DIMENSION FROM THE MOUNTING PLATE TO THE END OF THE FLAME RETENTION SHIELD.

500,000 BTU/HR. AT 4.5 PSIG GAS SUPPLY PRESSURE

FOR USE IN NEGATIVE PRESSURE FURNACES.

TYPE 23-200-L ELECTRIC SPARK IGNITED PILOT
AUTOMATIC CONTROLS COMPANY 721 MIAMI CIR. N.E. ATLANTA, GEORGIA 3032
DWG 23-200-01 | | 5-28-76

UNITED STATES MARINE CORPS
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

IN REPLY REFER TO
THH:jj
78-59
25 August 1978

From: Commanding General, Marine Corps Base, Camp Lejeune, North Carolina
To: Commander, Atlantic Division, Naval Facilities Engineering Command, Norfolk, Virginia 23511

Subj: Project P-755, Boiler Safety Controls, Building 1700

Ref: (a) Engineering Service Report Project P-755 dtd 16 Aug 78

Encl: (1) Martin's Control and Equipment Co., letter dtd 21 Aug 78

1. As stated in reference (a), enclosure (1) is transmitted.

2. Marine Corps Base, Camp Lejeune, North Carolina, intends to purchase items 1, 2, 3, 7, 8 and 10 through 15 to be installed by the contractor as Government furnished equipment.

3. Martin Control and Equipment Co., in addition to enclosure (1) is to furnish this office with prices of the listed equipment and a control block diagram. This information will be forwarded upon receipt.

C. A. TACK

MARTIN'S CONTROL & EQUIPMENT CO.

SALES—SERVICE

2536 N. Lombardy Street Richmond, Va. 23220

August 29, 1978

ROUTING ORDER	INT
1 10	CS
2 20	MCM
3 200	RHK
4 230	
5	
6	
7	
8	
RETURN TO 510	

5 SEP

C. A. Tack
Commander, CEC, USN
Department of the Navy
Naval Facilities Engineering Command Contracts
Jacksonville, North Carolina Area
Marine Corps Base, Camp LeJeune, North Carolina 28542

Re: 43-510:MLE:mle
N62470-78-C-3079

Dear Commander Tack,

Mr. Tommy Hankins has requested some additional information, which I have included in this letter. The following is in reply to the contract number listed above, and is our recommendations for equipment needed and for procedure necessary for safely controling the boilers hen using either oi or coal.

I recommend the following equipment:

		EACH
8 -(1 per burner)	#38-54 Fireye (ECA) volt meters	$ 97.80
8 -(2 per burner)	#27-218-XL Spottwood Parker ignitors	$ 422.00
8 -(1 per burner)	#45RM1 Fireye Scanners (ECA)	$ 698.00
8 -(2 per burner)	#4PDT McGill BP-22 transfer switch	$ 8.50
8 -(2 per burner)	#Series 114BA-2BD Valves-in-head Cyclinders	$ 48.40
8 -(2 per burner)	#ATC 305D-016 Timers	$ 85.00
8 -(2 per burner)	#A&B-700 R110-120-60Hz Relays	$ 32.00
8 -(2 per burner)	#A&B-700 R220-120-60Hz Relays	$ 32.00
4 -(1 per ~~burner~~ BOILER)	#Auxiliary Panel Hoffman # A161606 LP & A16P16	$ 35.00
4 -(1 per ~~burner~~)	Bailey FT310 Hand-auto station	$ 382.00
4 -(1 per ~~burner~~)	Bailey FC 210 Controller	$ 300.00
8 -(2 per ~~burner~~)	Bailey FC 110 Controller	$ 275.00
4 -(1 per ~~burner~~)	Bailey Solenoid Valve #5322-137A3	$ 149.00
8 -(2 per boiler)	Bailey Select Relay # 5322732-H2	$ 130.00
8 -(2 per ~~burner~~)	Bailey Bias Relay # 5319335-1	$ 250.00
4 -(1 per ~~burner~~)	Bailey #1951-029A3 PRV 0-30 PSI	$ 48.50

Fifteen week delivery on Bailey equipment, two week delivery on Fireye and pilots.

Continued....

MARTIN'S CONTROL & EQUIPMENT CO.
SALES— SERVICE
2536 N. Lombardy Street Richmond, Va. 23220

August 21, 1978

In order to operate safely I would recommend to:

Add eight remote flame signal volt meters to operate in central control panel using two per boiler.

Change existing pilots out to new Type Spottswood Parker 500,000 BTU at 4.5 PSI

Make damper between F. D. fan and Wind box on each burner automatic and wire into the system, to be closed when firing only one burner, but to be open during purge cycle using a pneumatic cyclinder.

Add one additional scanner per burner. Model B G C scanner type 45RM1 to monitor the coal flame. This scanner is to be wired into present Fireye system per attached sheet. (There is a need for the air to be purged in order to operate correctly.)

Add 4PDT transfer switch to each burner. This will enable the existing Fireye panel to be utilized. The operator will be required to start the fan, purge boiler, prove all dampers, fuel temperatures, and pressures all at their correct settings and positions using E. Keeler Co. Faber Burner Division Drawing Number 15407-W-2 Dated 7/12/72.

There is a need to by pass the oil temperature and pressure switches, transfer the oil valve circuits to a mill coal relay.

Add new timer for ignition on coal cycle. ATC-305D-016-8 needed. Also use 8 auxiliary relays A-B 700-R220 120V.

Add new Bailey steam flow fuel flow, air flow controls. This will allow coal burner to function automatically the same as the oil burners. Allowing one or both mills to operate automatically. The present Bailey system is a mini 500 series. The new items are the Bailey mini 520 series. A 250 CFM air Compressor is large enough for the system.

MARTIN'S CONTROL & EQUIPMENT CO.
SALES—SERVICE
2536 N. Lombardy Street Richmond, Va. 23220

RECOMMENDATION BOILER OPERATION

The cold boiler should be started on oil and heated up to the point that the make-up air and primary air for the coal mill are up to operating temperature. Leave one oil burner on and start the coal mill on the second burner. After the mill and feeder are warmed up and the coal burner is working correctly, shut the oil burner down and proceed to start the second coal unit.

The piping around the front of the boiler needs to be re-worked so that the operator can free access to all valves. If the operation of the boilers remains on a manual basis, the gas pilot and oil valves should be relocated near the burner so that the operator can stand in an up right position for operation.

I will never recommend igniting the boilers manually, except in extreme emergencies. I see a great deal need for an inter-phone system of some type to enable the main operator to talk with assistants at each boiler on the front and lower levels.

If there is any further questions regarding this job, please do not hesitate to call on us.

Very truly yours,

MARTIN CONTROL & EQUIPMENT COMPANY

Martin L. Johnson

P-755

DEPARTMENT OF THE NAVY
ATLANTIC DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
NORFOLK, VIRGINIA 23511

TELEPHONE NO.
444-7521

IN REPLY REFER TO:
09A21E:MLB
N62470-76-C-1462

30 AUG 1978

R. S. Noonan, Inc. of South Carolina
P. O. Box 1388
Greenville, South Carolina 29602

Re: Pollution Abatement Precipitators, Building 1700, Marine Corps Base, Camp Lejeune, North Carolina

Gentlemen:

It is proposed that the referenced contract be changed to include [redacted] Enclosures (1) and (2) define the scope of work and are forwarded to assist you in the preparation of a fee proposal. Enclosure (3), Guide for Architect-Engineer Firms, outlines the procedures, instructions, and responsibilities for firms providing services under contract. All facets of project administration, payment of fees, design, estimating and shop drawing review are discussed within the text of the Guide for Architect-Engineer Firms; e.g., your responsibilities as designer of record and liabilities associated therewith are discussed at length in paragraph 1.3; your responsibility to develop a schedule of construction sequence in coordination with Activity personnel is outlined in paragraph 5.1; estimate format and preparation are outlined in sections 2.1.g. and 6, etc. It is essential that you become acquainted with all procedures and responsibilities prior to your fee preparation. At your request, a preproposal conference will be arranged by the Project Manager to discuss the project's scope and any questions you may have with regard to the Guide for Architect-Engineer Firms.

Bench mark datum for this project shall be obtained directly from the Activity.

Technical data is available, at your request, as outlined in Appendix V of the Guide for Architect-Engineer Firms.

In submitting your proposal, milestones must be established for the 30%, 90% and 100% complete submittals. These milestones should include 30 days each for Government review of both the 30% and 90% submittals. You will be expected to meet or better the established schedules.

After the 30% review, you should confer with the Activity regarding operational requirements and scheduling aspects. You will also be expected to participate in a 90% review conference to be held at this Command after

2-K-6

09A21E:MLB
N62470-76-C-1402

which the final submittal should be made. Should the final design be incomplete, you will be expected to make necessary corrections so that advertisement will not be delayed.

The budget cost for this project has been set at $61,000. It is imperative that costs be monitored throughout the design development and estimates are required at the 30%, 90% and 100% submittals.

If you are interested in performing this design, it is requested that a fee proposal be submitted broken down as indicated on enclosure (4). It is intended to complete fee negotiations on or before 22 September 1978.

It is requested that you complete enclosure (5) and return it with your fee proposal. Completion of this checklist will provide accurate information for contract award and payment.

For further information, please contact Mr. M. L. Bryant, P. E., Atlantic Division, Naval Facilities Engineering Command, Norfolk, Virginia, telephone 444-7521, area code 804.

This letter is not intended as a commitment by the Government, and any expense incurred in preparation of the fee proposal is your responsibility. A contract award will await successful completion of fee negotiations.

Sincerely yours,

A. G. BRYANT, JR., P.E.
Head, CONUS Branch
Acquisition Project Management Office
By direction of the Commander

Encl:
(1) ESR dtd 16 Aug 1978 w/enclosed DD Form 1391
(2) CG MCB Camp Lejeune ltr PWO:THH:jj 78-59 of 25 Aug 1978
(3) 5ND LANTDIV 4-4330/89A (New 3/78)
(4) A&E Fee Proposal Submittal
(5) A&E Fee Checklist

Blind copy to: (w/o encls)
MARCORB CAMLEJ

BASE MAINTENANCE DEPARTMENT
Marine Corps Base
Camp Lejeune, North Carolina 28542

MAIN/BWE/nah
11300
11 Sep 1978

From: Base Maintenance Officer
To: Assistant Chief of Staff, Facilities

Subj: Boiler Safety Controls, Bldg 1700

Ref: (a) LantDiv ltr 112:JER 11310 of 26 Jan 78
(b) BMO ltr MAIN/BRW/rn 11370 of 8 May 78
(c) CG MCB CLNC ltr PWO:280:mkc 11000 of 30 May 78
(d) CG MCB CLNC msg 181312Z Jul 78
(e) CMC msg 211427Z Jul 78
(f) LantDiv ltr 09A21E:MLB N62470-76-C-1402 of 30 Aug 78

1. As a result of the explosion in Boiler No. 4, Bldg. 1700 on 3 November 1977 and subsequent investigation and recommendations by LANTDIVNAVFACENGCOM, the central steam plant cannot be fired safely with coal until the subject controls are installed. The inability to burn coal during the forthcoming heating season poses a financial problem in that the budgeted FY 79 firing plan is 70 percent coal 30 percent oil. Reverting to 100 percent oil firing will cost an additional $450,000 during FY 79 at current prices of coal and oil.

2. Reference (a), LantDiv investigation/recommendations, included operational procedure changes and control equipment modification/modernization. Following receipt of those recommendations, the Public Works Officer was requested, by reference (b), to give the project for installation of the additional controls the highest possible priority to ensure installation before the next heating season.

3. On 30 May, project P-755, Boiler Safety Controls, was forwarded to HQMC by reference (c) requesting the project be placed at priority number one for the proposed FY 79 Camp Lejeune Minor Construction Program. Recognizing that time was of the essence, a message was forwarded to HQMC, reference (d), requesting authority to develop plans and specifications for contract advertisement and award as soon as possible after 1 October 1978. Reference (e) granted the authority.

4. Following receipt of approval from HQMC to proceed, the project was forwarded to LantDiv for preparation of plans and specifications. Reference (f) proposes to develop the plans and specifications by A&E and subsequently be included as part of the Pollution Abatement Precipitators project presently under construction at Bldg. 1700.

5. In view of the time frames established by reference (f), it appears doubtful the subject controls will be installed prior to the upcoming

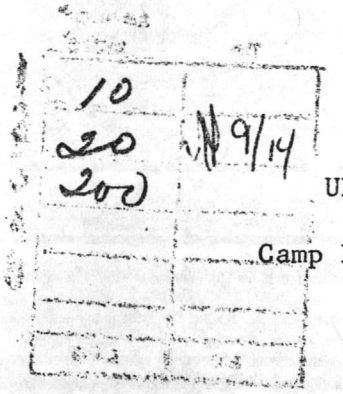
MAIN/BWE/nah
11300

Subj: Boiler Safety Controls, Bldg 1700

heating season unless more expeditious means are available and pursued to accomplish the work. Considering the deficit of $450,000 if not accomplished versus the $60,000 to install the controls, it is requested that action be taken to ensure completion of the project prior to the heating season.

B. W. ELSTON
Acting

Copy to:
AC/S Comptroller
PWO



UNITED STATES MARINE CORPS
Marine Corps Base
Camp Lejeune, North Carolina 28542

FAC:TRB:mkc
8281
12 Sep 1978

FIRST ENDORSEMENT on BMaintO ltr MAIN/BWE/nah 11300 of 11 Sep 1978

From: Assistant Chief of Staff, Facilities
To: Public Works Officer

Subj: Boiler Safety Controls, Bldg. 1700

1. Readdressed and forwarded for continuing action.

2. The requirement for the expeditious installation of the subject controls cannot be over emphasized. It is considered that this project requires the full cooperation and support of all concerned to ensure immediate installation by the most rapid means available. Anything less is considered unacceptable.

3. This office is prepared to assist in overcoming any administrative obstacles which may preclude you from obtaining this objective.

T. R. BAISLEY

Copy to: (end only)
AC/S, Compt
BMaintO

Bailey Meter Company, U.S.A.

PROPOSAL

NO. FOR NUCLEAR RELATED USE UNLESS SPECIFICALLY SO STATED IN THIS PROPOSAL.

posal No. CRZ5096-00
Rev. No.
Date September 13, 1978
Page 1 of 2

To: MARINE CORPS BASE
PUBLIC WORKS DEPARTMENT
CAMP LEJEUNE, N. C. 28542

Attention: MR. TOM HANKINS, MECHNICAL DESIGN ENGINEER
Refer to:

Subject: BAILEY CONTROLS FOR BUILDING 1700

Reference:

We propose to furnish the equipment and services described below at the prices shown, subject to the terms and conditions included herein., and attached Forms SM12, SM109, SM128-2.

Item No.	Quan.	Type and Description	Price
		Bailey Controls and Instrumentation per attached Equipment List is suggested as renovation of present coal firing controls to provide fully automatic coal firing capability ----------	$10,079.00
		Shipment: 15 Weeks following receipt of acceptable approved design information and order.	
		Shipping Weight: 600 Pounds	
		CC: Mr. Martin Johnson Martin's Control & Equipment Co. 2536 N. Lombardy Street Richmond, Virginia 23220	

Respectfully submitted, BAILEY METER COMPANY

By: R. A. Mullis

R. A. Mullis
Charlotte District

Item No.	Quan.	Type and Description	Service	Reference
1	4	FT310 F.D. H/A for Coal Firing	Air H/A	P91-9
2	4	FC210 Two Model Control SF/AF Correction Relay	Airflow Correction	P92-11
3	8	FC110 Proportional Control	Compensating Relays	P92-11
4	4	Part #5313073AK#3 Solenoid Valve 120 VAC	Mill Compensation	
5	4	Part #5322732B1 Part #5322732B2	Signal Selector " "	B/L #A3031257
6	8	Part #5319335E1 Manual Bias Relay	Signal Balancing	B/L #B3016432
7	4	Part #1951029A3 Filter Regulator	Signal Loader	
8	4	Sets Product Instruction Manuals		
9	4 1	Prints, Control Schematic Reproducible, Control Schematic 5328379 A 1	TRIM PACKAGE	

10 CO
20 JWH
200 RHK
220

BASE MAINTENANCE DEPARTMENT
Marine Corps Base
Camp Lejeune, North Carolina 28542

MAIN/BW/nah
11300
18 Sep 1978

From: Base Maintenance Officer
To: Assistant Chief of Staff, Facilities

Subj: Boiler Safety Controls, Bldg 1700

Ref: (a) BMO ltr MAIN/BWE/nah 11300 of 11 Sep 1978

Encl: (1) Sam English, Inc. quotation to install boiler safety controls

1. Reference (a) outlined the requirements for subject controls and pointed out the procedures which have been followed in an attempt to ensure coal firing capability this heating season.

2. On 13 September 1978 a meeting was held with the Assistant Public Works Officer, Public Works Design Division Director, the Base Maintenance Officer, and Utilities Division personnel. The Assistant Public Works Officer pointed out that Bldg 1700 had been fired with coal for 35 years with only one serious problem. The question was asked if coal firing could be continued by substituting, during this heating season, additional operating personnel for subject controls. The same approach was discussed with LANTDIV personnel several months earlier and determined that the risks were too great. Though the possibility of another explosion is very remote, it would appear negligent on the part of management if another mishap occurred while burning coal without the recommended safety controls. For this reason, BMO does not recommend the alternate solution.

3. During previous discussions with LANTDIV personnel, they stated that a sole source contract should be negotiated to install subject controls. Enclosure (1) established an initial contract price of $39,088. Recent modifications of some materials, due to obsolescence, will increase this price to approximately $50,000. In a conversation with Mr. English, on 18 September 1978, it was pointed out that if a contract could be awarded to him by 1 October 1978 the controls should be operational by 31 January 1979. He stated there was a possibility that the completion date could be late December 1978 or mid January 1979. 17 wks

4. In view of the above it is recommended that a single source contract be awarded to Sam English, Inc.

B. W. ELSTON
Acting

Copy to:
→ PWO (w/o encl)

MARTIN'S CONTROL & EQUIPMENT CO.

SALES—SERVICE

2536 N. Lombardy Street Richmond, Va. 23220

September 18, 1978

	ROUTING ORDER	INT
1	10	
2	20	9/20
3	200	
4		
5		
6		
7		
8		

RETURN TO 510

C. A. Tack
Commander, CEC, USN
Department of the Navy
Naval Facilities Engineering Command Contracts
Jacksonville, North Carolina Area
Marine Corps Base, Camp LeJeune, North Carolina 28542

Re: 43-510:MLE:mle
N62470-78-C-3079

Dear Commander Tack,

Mr. Tommy Hankins has requested some additional information which I have included in this letter. The following is in reply to the contract number listed above, and is our recommendation for equipment necessary for safely controlling the boilers when using either oil or coal.

The following are recommended:

	EACH
8 - (1 per burner) #38-54 Fireye (ECA) volt meters.....$	97.80
8 - (1 per burner) #27-218-XL Spottswood Parker ignitors.....$	422.00
8 - (1 per burner) #45RM1 Fireye Scanners (ECA) .....$	698.00
8 - (1 per burner) #4PDT McGill BP-22 transfer switches.....$	8.50
8 - (1 per burner) #Series 114BA-2BD Valves-in-head Cyclinders....$	48.40
8 - (1 per burner) #ATC 305D-016 Timers.....$	85.00
8 - (1 per burner) #A&B-700 R110-120-60Hz relays .....$	32.00
8 - (1 per burner) #A&B-700-R2201120-60Hz relays.....$	32.00
4 - (1 per boiler) A161606 Auxiliary panel (Hoffman) .....$	35.00
4 - (1 per boiler) Bailey FT310 Hand-Auto station .....$	382.00
4 - (1 per boiler) Bailey FC 210 Controller .....$	300.00
8 - (2 per boiler) Bailey FC 110 Controller .....$	275.00
4 - (1 per boiler) Bailey Solenoid Valve # 5322-137A3.5313A7AK3$	149.00
8 - (2 per boiler) Bailey Select relay # ~~5322732-H2~~ .....$	130.00
8 - (2 per boiler) Bailey Bias relay # 5319335-1.....$	250.00
4 - (1 per boiler) Bailey #1951-029A3 PRV 0-30 PSI .....$	48.50

Fifteen week delivery on Bailey equipment, two week delivery on Fireye and pilots.

9-21-78
Call Martin Johnson's Office and told them that I had made the changes (marked in Red) in their letter. Martin not in asked Mrs Johnston to have him call me if he did not agree with the changes.
T.N.H.

{4ea— 5322732 B1
{4ea— 5322732 B2

Continued.....

Suggestions for safe operation of boilers:

Install eight remote flame signal volt meters to be mounted in the central control panel using two per boiler.

Change existing pilots to new type Spottswood Parker 500,000 BTU at 4.5 PSI.

Make existing dampers between F. D. fans and Wind boxes on each burner automatic and wire into system. Thus the damper will be closed when firing only one burner, but will be open during the purge cycle by using a pneumatic cyclinder.

Add one additional scanner per burner. Model B G C scanner type 45RMI to monitor the coal flame. This scanner is to be wired into the present Fireye system as per attached sheet. It is necessary for the scanner to be purged with air to keep them clean.

Add one #4PDT transfer switches to each burner. This will enable the existing Fireye panel to be utilized. The operator will be required to start the fan, purge the boiler, prove all of the dampers, fuel temperatures, and that the pressurers are at their correct settings and positions. Drawing # 15407-W-2 dated 7/12/72 by E. Keeler Co, Faber Burner Division to be used for this.

There is a need to by-pass the oil temperature and pressure switches, and transfer the oil valve circuits to a mill coal relay.

Add new timer #ATC-305-016 for ignition on the coal cycle. This will will require eight. Also, eight auxiliary relays #A&B-700-R220 120 V are needed.

Add new Bailey steam flow, fuel flow, and air flow controls. This will allow coal burner to function automatically the same as the oil burners. Allowing one or both mills to operate automatically. The present Bailey system is a mini-500 series. The new items are Bailey mini-520 Series. A 250 CFM air compressor is large enough for the system.

RECOMMENDED BOILER OPERATION

The cold boiler should be started on oil and heated up to the point that the make-up air and primary air for the coal mill are up to operating temperature. Leave one oil burner on and start the coal mill on the second burner. After the mill and feeder are warmed up and coal burner is working correctly, shut the oil burner down and proceed to start the second coal unit

The piping around the front of the boiler needs to be re-worked so that the operator can have free access to all valves. If the operation of the boilers remains on a manual basis, the gas pilot and oil valves should be relocated near the burner so that the operator can stand in an up right position for operation.

I would never recommend igniting the boilers manually, except in extreme emergencies. I see a great need for an inter-phone system of some type to enable the main operator to talk with assistants at each boiler on the front and lower levels.

If there are any further questions regarding this job, please do not hesitate to call us.

Yours very truly,

MARTIN CONTROL & EQUIPMENT COMPANY

Martin L. Johnson

Martin L. Johnson

MLJ/jj

-10 Seen
20 9/22
200 Rec 9/14
ORIGINAL
ACTION
PWO
650
FAC

V2GZCRBA697
RTTUZYUW RULYSG62655 2622109-UUUU--RUQLBRA.
ZNR UUUUU
R 192122Z SEP 78
FM LANTNAVFACENGCOM NORFOLK VA
TO CG MCB CAMP LEJEUNE NC
BT
UNCLAS //N11100//
PROJ P-755, BOILER SAFETY CONTROLS, BLDG 1708, MCB CAMLEJ
A. NAVCOMPT FORM 2853 DTD 31 AUG 78 EST $6,100
B. FONECOM LANTNAVFACENGCOM (M. BRYANT)/MCB CAMLEJ (MRS LITTLETON)
OF 18 SEP 78
1. REQ FUNDS PROVIDED BY REF A BE WITHDRAWN SINCE PROJ WILL BE ACCOMPLISHED BY USE VICE LEASE. AS SOON AS FOR NEGOTIATIONS ARE CONCLUDED WITH ASE (R. S. GOONAN, INC. OF GREENVILLE, SC), EXACT FUND AMT WILL BE REQD TO BE FUNDED ON NAVCOMPT FORM 2939. THIS CONFIRMS REF B.
BT
#2605

AGT: FAC
TOR: 19 2100Z SEP 78

NNNN

Action Compt copy to BMO PWO

FAC ROUTING

	ACTION	INFO	
FAC			
4A			
4B			
4C			
4D			
4E			
4F			

19 1420Z Sep 78

UNITED STATES MARINE CORPS
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

IN REPLY REFER TO
PWO:THH:sh
4400

From: Commanding General
To: Commanding Officer, Base Materiel Battalion (Attn: Purchasing and Contracting Officer)

Subj: Procurement of Boiler Controls, Building 1700

Encl: (1) Justification for Purchase of Boiler Controls as Manufactured by Babcock & Wilcox, Bailey Meter Company, USA, & Fireye Division, Electronics Corp. of America
(2) CG MCB Camp Lejeune msg 181312Z JUL 78
(3) Babcock & Wilcox, Bailey Meter Co. USA Proposal No. CRZ5096-00 dtd 13 Sep 1978

1. Enclosures (1) through (3) are forwarded for information.

2. Justification for the purchase of the equipment from the sole sources indicated is certified in enclosure (1).

3. Funds will be provided by separate correspondence.

4. It is requested that the items listed in enclosure (1) be procured as expeditiously as possible. It is expected that a contract for installation will be ready for award within 12 to 14 weeks.

Blind copy to: (W/encl)
AC/S, Fac
[illegible]
AC/S, Compt

JUSTIFICATION FOR PURCHASE OF BOILER CONTROLS FOR
BOILERS 1 THROUGH 4, BUILDING 1700
AS MANUFACTURED BY
BABCOCK & WILCOX, BAILEY METER COMPANY, USA
AND
FIREYE DIVISION, ELECTRONICS CORPORATION OF AMERICA

1. Boilers 1 through 4 are presently arranged to fire oil automatically and to fire coal manually. The present arrangement is unsafe to fire coal according to a report by the Utilities Division, LANTDIV, dated January 1978. At present cost of fuels it will cost Camp Lejeune an additional $452,800 to fire 100 percent oil during FY 1979.

2. In order to fire coal and oil automatically it will be necessary to revamp the present controls. The present control system consists of equipment manufactured by Bailey & Fireye. It is neither good engineering practice nor safe to mix-match equipment of this type. Therefore, these items must be purchased from these two manufacturers.

3. The estimated time for delivery on the Bailey equipment is fifteen weeks and two weeks for the Fireye equipment.

4. The equipment required to be purchased is as follows:

No. of Items	Equipment Model No.
4	Bailey FT310 Hand-Auto Station
4	Bailey FC210 Controller
8	Bailey FC110 Controller
4	Bailey Solenoid Valve #5322137A3
4	Bailey Select Relay #5322732B1
4	Bailey Select Relay #5322732B2
8	Bailey Bias Relay #5319335E1
4	Bailey Pry 0-30 PSI #1951029A3
8	Fireye (ECA) Volt Meters #38-54
8	Fireye Scanners (ECA) #45RM1
4	Instruction Manuals (Bailey)
4	Copies of Control Schematic as Modified (Bailey)
1	Reproducible Copy of Control Schematic as Modified (Bailey)

9-21-78 called Capt Tweed and gave him the changes marked in red. J.A.H.

5B130 73AK3

The estimated cost of the equipment is $10,079 for Bailey and $6,367 for Fireye.

5. LANTDIV is in the process of designing the new control system and will include in the design the above-mentioned equipment as government furnished, contractor installed. Installation will be by separate contract.

6. It is certified that these items are required for the safe operation [illegible] and that they must be purchased only from the two manu-

PWO:RHK:sh
PWD P-755

SEP 21 1978

From: Commanding General
To: Commander, Atlantic Division, Naval Facilities Engineering Command, Norfolk, Virginia 23511

Subj: Flame Safeguard Controls, Building 1700, Marine Corps Base, Camp Lejeune, N. C.

1. We are highly concerned about the installation quality of the subject controls. There are few mechanical contractors sufficiently competent to install these controls correctly.

2. To limit installation problems we ask that the specification include (1) experience clauses, (2) a requirement for a manufacturer's representative to supervise installation, and (3) a requirement for extensive acceptance testing. In addition, the specification should call attention to the existing flame safeguard system, which controls oil firing, and require that its operation remain unimpaired. We would also like a restricted bidder's list.

3. Safety of operations is our uppermost concern. A poorly installed control is worse than no control at all because operators will rely on the control to function properly. If you have any questions concerning our position please call Mr. T. Hankins at AUTOVON 484-3238.

C. A. TACK
By direction

Blind copy to:
AC/S, Fac
BMO

Return to Public Works Dept.

P-755

PWO:CAT:sh
PWD P-755
22 SEP 1978

SECOND ENDORSEMENT on BMaintO ltr MAIN/BW/nah 11300 of 18 Sep 1978

From: Public Works Officer
To: Assistant Chief of Staff, Facilities

Subj: Boiler Safety Controls, Building 1700

Ref: (b) CG, MCB, CLNC ltr PWO:RHK:sh, PWD P-755, dtd 21 Sep 78

1. The comments referred to in paragraph 3 of the basic represent the sincere opinion of an individual who is not in the acquisition business. The authority to make single source negotiated procurements is carefully controlled and has not been delegated to me. The LANTDIV acquisition people would have to get the authority from NAVFAC, who must go all the way to SECNAV in cases as small as $100,000. Approvals can be based on (1) only one firm is qualified (not the present case -- some firms are more qualified than others, but more than one is in fact qualified), or (2) urgency. Such urgency comprehends avoidance of serious financial injury which would be unavoidable by advertising. One usually thinks of emergency repair after a natural disaster. In our present case, we believe (and the LANTDIV acquisition people believe) we can do it just as fast by advertising; therefore no financial injury is avoided (as by burning more coal and less oil).

2. The LANTDIV technical expert mentioned above was on the Base on 21 September and met with the BMO and the PWO. Several helpful suggestions surfaced which we have passed on by reference (b) (copy attached).

C. A. TACK

Copy to:
BMO

UNITED STATES MARINE CORPS
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

IN REPLY REFER TO
PWO:THH:sh
P-755/78-59

SEP 25 1978

From: Commanding General
To: Commander, Atlantic Division, Naval Facilities Engineering Command, Norfolk, Virginia 23511

Subj: Project P-755, Boiler Safety Controls, Building 1700

Ref: (a) CG MCB CLNC ltr THH:jj, 78-59 dtd 25 Aug 78
(b) ESR, Proj. P-755, dtd 16 Aug 78
(c) CG MCB CLNC ltr PWO:RHK:sh, PWD P-755 dtd 21 Sep 78

Encl: (1) Martin's Control & Equipment Co. ltr dtd 18 Sep 78
(2) CG MCB CLNC ltr PWO:THH:sh, 4400 dtd 20 Sep 78 w/encl
(3) Bailey Meter Co., U.S.A. Proposal No. CRZ5096-01 dtd 22 Sep 78
(4) Proposed Restricted Bidders List

1. Enclosure (1) is an update of the report transmitted with reference (a).

2. Enclosures (2) and (3) include a list of equipment to be purchased as Government furnished, contractor installed.

3. The above is a supplement to reference (b).

4. Enclosure (4) is a proposed restrictive bidders list which might be useful in furtherance of reference (c).

C. A. TACK
By direction

Bailey Meter Company, U.S.A.

PROPOSAL

NOT FOR NUCLEAR RELATED USE UNLE SPECIFICALLY SO STATED IN THIS PROPOSAL.

Proposal No. CRZ5096-01
Re[illegible] No.
Da[illegible] September 22, 1978
Page [illegible] of 7

To: MARINE CORPS BASE
PUBLIC WORKS DEPARTMENT
CAMP LEJEUNE, N. C. 28542

Attention: MR. TOM HANKINS, MECHANICAL DESIGN ENGINEER

Refer to:

Subject: BAILEY CONTROLS FOR BUILDING 1700

Reference:

We propose to furnish the equipment and services described below at the prices shown, subject to the terms and conditions included herein.

Item No.	Quan.	Type and Description	Price
		Bailey Controls and Instrumentation per attached Equipment List is suggested as renovation of present coal firing controls to provide fully automatic coal firing capability ----------	$9,905.56
		Shipping Weight: 600 Pounds	
		CC: Mr. J. A. Harris Purchasing & Contracting Division P. O. Box 8368 MCB Camp Lejeune, N. C. 28542	
		CC: Mr. Martin Johnson Martin's Control & Equipment Co. 2536 N. Lombardy Street Richmond, Virginia 23220	

Shipment: 15 Weeks following receipt of complete approved design information and order.

Respectfully submitted, BAILEY METER COMPANY

By: R. A. Mullis

R. A. Mullis
Charlotte District

EQUIPMENT LIST

Item No.	Quan.	Type and Description	Service	Reference
1	4	FT310 F.D. H/A for Coal Firing	Air H/A	P91-9
2	4	FC210 Two Mode Control SF/AF Correction Relay	Airflow Correction	P92-11
3	8	FC110 Proportional Control	Compensating Relays	P92-11
4	4	Part #5313073AK3 Solenoid Valve 120 VAC	Mill Compensation	
5	4 4	Part #5322732B1 Part #5322732B2	Signal Selector " :	B/L #A3031257
6	8	Part #5319335E1 Manual Bias Relay	Signal Balancing	B/L #B3016432
7	4	Part #1951029A3 Filter Regulator	Signal Loader	
8	4	Sets Product Instruction Manuals		
9	4 1	Prints, Control Schematic Reproducible, Control Schematic		

PROPOSED RESTRICTIVE BIDDERS LIST

Boiler Equipment Company
P. O. Box 27806
Raleigh, N. C. 27611
Mr. Earl Puryear

Boiler Controls Company
1512 Ivey Drive
Charlotte, N. C. 28205
Mr. Jim Lowe

T & B Scottdale Builders
P. O. Box 866
Scottdale, Ga. 30079
Mr. Harold Clark

Sam English Company
P. O. Box 9110
Richmond, Va. 23227

Bolton Corporation
P. O. Box 10186
Raleigh, N. C. 27605

OPNAV 5216/144 (REV. 6-70)
S/N 0107-LF-778-6099

DEPARTMENT OF THE NAVY

Memorandum

43-20:JST:agt

DATE: 2 October 1978

10 S
200 RHK
230

FROM

TO MEMORANDUM FOR FILE

SUBJ Project P-755 Boiler Safety Controls

Ref: (a) ESR, Same Subject, to LANTDIV Dated 16 Aug 78
(b) Phonecon Bob Wilson Utilities Division, Director/ LCDR Sherron 2 Oct 78

1. I had two conversations with Maxy Bryant, LANTDIV, today. He called to ask about the Stated requirement in reference (a) to have an emergency generator to provide power for the "boiler controls and boiler on mechanical draft." He wanted confirmation of the requirement to provide full electric power for the steam plant.

2. I called him back (after checking our records) to tell him that emergency power was required for the controls only - not the forced draft fans. That was later confirmed by reference (b).

3. The design is to be handled by R. S. Noonan Company by change order to an existing A/E contract. This portion of that contract will be administered by ROICC Jax NC Area. The A/E will do the boiler safety controls part first and the emergency generator and intercom second. The design fee for the whole job will be approximately $10,000. That figure was relayed to Bob Wilson during reference (a).

4. The milestones were reported by M. Bryant as follows:

a.	Complete Design	15 Nov 78
b.	Advertise	22 Nov 78
c.	Award	20 Dec 78
d.	Contractor started work	22 Jan 79

dim planning on ROICC Jax being ROICC

5. A request for design funds will be made from the PWO to the AC/S Comptroller.

J. T. SHERRON

LCDR Moeller told me 10/3 that the P/S would not be ready Fi'll the end of Feb v.

10/3/78

By A/E to be submitted & also negotiated cost of design is $7857.

700 PWO
230

PWO:JTS:arc
11000
3 Oct 1978

From: Public Works Officer
To: Assistant Chief of Staff, Comptroller
Via: Assistant Chief of Staff, Facilities

Subj: Boiler Safety Control, Bldg. 1700, Project P-755,
HQMC Program Number 9710

Ref: (a) ESR, Boiler Safety Controls dtd 16 Aug 1978
(b) Phonecon M. Bryant LANTDIV/LCDR Sherron APWO CLNC

1. Reference (a) requested the Atlantic Division, NAVFACENGCOM (LANTDIV) to provide Engineering Design Services for the subject project.

2. By reference (b), we were advised that negotiations are completed and that a design fee of $10,000 has been agreed to for this project. Accordingly, you are requested to forward funds in that amount to LANTDIV.

C. A. TACK

Copy to:
BMO

R S NOONAN INC
OF SOUTH CAROLINA
engineers & architects

P.O. BOX 1388 • GREENVILLE, S.C. 29602 • AREA CODE 803-277-7950

October 3, 1978

10
20
200
230

Department of the Navy
Atlantic Division
Naval Facilities Engineering Command
Naval Station
Norfolk, Virginia 23511

!*?#;!!

Attention: 09A21E:MLB
N62470-76-C-1402

Subject: A/E Fee Proposal for Boiler Safety Controls
Marine Corps Base, Camp Lejeune, North Carolina

Keep pushing!

Gentlemen:

Based on telephone discussions with your office on 2 and 3 October, 1978, we would like to revise our proposed design schedule contained in our fee proposal of 25 September, 1978. The revised design schedule is as follows:

Notice to Proceed	9 October, 1978
90% Submittal	30 November, 1978
100% Complete Submittal	15 December, 1978

We understand a 30% submittal will not be required and the 90% on-board review will be conducted at Camp Lejeune. Every attempt will be made to improve on the above dates, however, with our present in-house workload this appears to be a realistic schedule.

We also understand that a small (5 or 10 KW) emergency generator to operate the boiler controls in the event of power failure is to be included in the design. An intercom system is also to be included.

Very truly yours,

R. S. NOONAN, INC. OF SOUTH CAROLINA

Brian H. Dulaney

Brian H. Dulaney, P.E.
Project Manager

BHD:aw

cc: Commander C. A. Tack
Commander, CEC

DEPARTMENT OF THE NAVY
ATLANTIC DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
NORFOLK, VIRGINIA 23511

TELEPHONE NO.
444-7521
IN REPLY REFER TO:

09A21E:MLB
N62470-76-C-1402

6 OCT 1978

R. S. Noonan Inc. of South Carolina
P. O. Box 1388
Greenville, South Carolina 29602

Re: Contract N62470-76-C-1402, Boiler Safety Controls, Building 1700, Marine Corps Base, Camp Lejeune, North Carolina

Gentlemen:

By letter of 30 August 1978, a list of equipment that would be purchased by the Government was furnished which included items 1, 2, 3, 7, 8 and 10-15 of Martin's Control and Equipment Company's letter of 21 August 1978.

This list has been revised by enclosure (1) and design should reflect this new list for Government furnished and contractor furnished material. Further, to limit installation problems, the specifications should include a requirement for a manufacturer's representative to supervise installations and a requirement for extensive acceptance testing.

If you have any questions, please contact Mr. M. L. Bryant, P. E., of this Command, telephone 444-7521, area code 804.

Sincerely yours,

A. G. BRYANT, JR., P.E.
Head, CONUS Branch
Acquisition Project Management Office
By direction of the Commander

Encl;
(1) MARCORB CAMLEJ ltr PWO:THH:sh
P-755/78-59 of 25 Sep 1978

Blind copy to: (w/o encls)
MARCORB CAMLEJ

PWKSO
P-755

VZCZCBRA469
RTTUZFDY RUCLBRA0127 2791643-UUUU--RULSSUU.
ZNR UUUUU
R 06 1643Z OCT 78
FM CG MCB CAMP LEJEUNE NC
TO CMC WASHINGTON DC
BT
UNCLAS //N11019//
CMC FOR LFF-2
FY 79 FAC PROJ PROGRAM
A. CMC 211427Z JUL 78
1. AUTH TO DEVELOP PLANS & SPECS FOR HQMC PROJ NO. 9710 INSTALL BOILER SAFETY CONTROLS APPROVED BY REF.
2. REQUEST FUNDS IN AMT OF $9,843 FOR DEVELOPMENT OF PLANS & SPECS BY CONTRACT.
BT
#0127

RELO: F. L. TOLIESON, COL

DIST: COMPT, FAC, PWKSO, BMAIN

TOD: 06 1857Z OCT 78

NNNN

correct

$9857?

pls verify amount

2-R-6

DEPARTMENT OF THE NAVY
ATLANTIC DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
NORFOLK, VIRGINIA 23511

TELEPHONE NO.
444-7521
IN REPLY REFER TO:

09A21E:MLB
N62470-76-C-1402
N62470-78-B-8541

12 OCT 1978

From: Commander, Atlantic Division, Naval Facilities Engineering Command
To: Commanding General, Marine Corps Base, Camp Lejeune, North Carolina 28542

Subj: A&E Contract N62470-76-C-1402, Flame Safeguard Controls, Building 1700, Marine Corps Base, Camp Lejeune, North Carolina (Construction Contract N62470-78-B-8541)

Ref: (a) MARCORB CAMLEJ ltr PWO:RHK:sh PWD P-755 of 21 Sep 1978
(b) MARCORB CAMLEJ ltr PWO:THH:sh P-755/78-59 of 25 Sep 1978
(c) FONECON LANTNAVFACENGCOM (M. Bryant and W. Mathews)/ROICC JAXNCA MARCORB CAMLEJ (CDR Tack) on 5 Oct 1978

1. In response to reference (a), this Command has advised the A&E to incorporate in the subject contract specification a requirement for a manufacturer's representative to supervise installation and extensive acceptance testing. The requirement for an experience clause, however, is not necessary in view of reference (b) instructions to investigate a restricted bidders list for construction.

2. As discussed during reference (c), authority has been obtained from NAVFACENGCOM to administer the subject construction contract using competitive negotiation procedures. This will require the A&E to forward the 100% plans, specifications and cost estimate as soon as available to LANTNAVFACENGCOM. It is noted that 90% plans, specifications and cost estimate cannot be used to expedite the competitive negotiation procedures.

A. G. BRYANT, JR.
BY DIRECTION

to:
S. Noonan, Inc. of South Carolina

Change 22 -

PWO:TJB:sh
PWD 78-57

17 OCT 1978

R. S. Noonan, Inc.
P. O. Box 1388
Greenville, S. C. 29602

Re: A/E Contract N62470-78-C-1402, Boiler Safety Controls, Building 1700, Marine Corps Base, Camp Lejeune, N. C.

Gentlemen:

The desired scope of work for the referenced contract was outlined during the October 10-12, 1978 visit of Larry S. Ryder and Stephen D. Hendrick (from your office) to Camp Lejeune. This scope of work is as follows:

(1) Provide necessary Fireye scanners to monitor the gas pilot and coal flame. Scanners shall be interlocked to prevent coal feeder from operating until a suitable fire is established, and to shut off propane gas ignition supply, after a suitable delay period, when the scanner senses a no flame condition. System shall include a self checking feature for coal firing. A self checking feature is existing for oil firing.

(2) Provide new automatic gas pilot to replace existing manual torch. New automatic gas pilot shall be permanently mounted and retractable, or designed to withstand constant exposure to the heat of operation.

(3) Upgrade existing controls by adding necessary relays and timers to program boiler firing for fully automatic switching between coal and oil. Provide a second purging system for coal so that purging can be done on oil or coal firing.

(4) Provide new 3-way manual oil valves in the burner supply and return oil lines, replacing the existing manual valves. Repipe existing oil and steam mains in front of boiler to accommodate new equipment, and for safe operator access.

(5) Add necessary Bailey components to the existing panel board for ratioing the coal/air mixture, and for controlling the two burners of each boiler for operation on one coal mill.

(6) Provide a new duplex air compressor, receiver and refrigerated air dryer to supply dry, oil-free air for the control system of the original four existing boilers in Building 1700.

Returned to Public Works Dept.

17 OCT 1978

(7) Provide a new L.P. gas emergency generator connected to existing L.P. gas storage tank. Generator will supply power for operating control compressor, control circuit and control panel lights in case of building power failure. This will allow boilers to be operated safely on natural draft using oil firing.

(8) Provide intercom units specially designed for high noise areas with stations located at each of Boilers 1 through 5, and at control panel. System shall be of the type that each station can communicate with any other station. The system shall have the capacity to add a minimum of 10 future stations.

(9) Provide section in specifications that will require a manufacturer's representative to supervise the installation of the Government furnished Fireye and Bailey equipment.

(10) Provide section in specifications for contractor to perform extensive acceptance testing of the controls.

(11) Specifications should require the contractor to be completely mobilized, all possible preparatory work done, and all contractor supplied items required for completion of control system delivered by a date to be determined at the 90% review. This date to be furnished will coincide with the delivery date of the Government furnished materials.

R. S. Noonan has agreed to have a 90% review at Camp Lejeune. Target date for this review is 15 November 1978.

If you have any questions, please contact Mr. T. N. Hankins, Jr., P. E. of this Command, telephone (919) 451-3238.

Sincerely yours,

C. A. TACK
CDR, CEC, USN
Public Works Officer
By direction of the Commanding General

Blind copy to:
AC/S, Fac
LANTDIV (09A21E)

PWO:RHK:sh
P-755

10 OCT 1978

MEMORANDUM

From: Public Works Officer
To: Assistant Chief of Staff, Facilities

Subj: HQMC Project 9710, Install Boiler Safety Controls

Ref: (a) CMC ltr LFF-2-SAB:ed dtd 12 Sep 78

Encl: (1) Project Request Package for 9710 (P-755) consisting of DD Form 1391 dtd 10 Oct 78, NAVDOCKS Form 2417, PW Dwg. No. 13980, and Site Location Map (3 sets)

1. Reference (a) approved the subject project at a funding level of $61,000. Subsequent developments indicate a required funding level of $92,200 (see enclosure (1)).

2. We believe that CMC should be officially notified of this change.

C. A. TACK

Return to Public Works Dept.

1. COMPONENT	FY 79 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
NAVY		10 OCT 78

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA 28542	BOILER SAFETY CONTROLS, BLDG. 1700

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
	821-22	P-755	92.2

9. COST ESTIMATES

ITEM	U/M	QUANTITY	UNIT COST	COST ($000)
TOTAL COST	-	-	-	83.8
CONTINGENCY - 10%	-	-	-	8.4
ESTIMATED CONTRACT COST	LS	-	-	92.2
SUPERVISION, INSPECTION & OVERHEAD	-	-	-	-
TOTAL REQUEST	LS	-	-	92.2
INSTALLED EQUIP OTHER APPROPRIATIONS	-	-	-	-

10. DESCRIPTION OF PROPOSED CONSTRUCTION

Provide necessary Fireye scanners, auto gas pilot, relays and timers, Bailey controls, 250 CFM air compressor, refrigerated air dryer, emergency diesel generator and intercom system, etc. for a complete and usable safeguard control system for firing pulverized coal.

11. REQUIREMENTS

PROJECT: To provide safe control systems for coal burning equipment in Bldg. 1700.

REQUIREMENT: An automatic flame safeguard control for firing pulverized coal.

CURRENT SITUATION: Presently the boilers in Bldg. 1700 are set up for manual firing only.

IMPACT IF NOT PROVIDED: If automatic controls are not provided, the possibility of another explosion as in Boiler No. 4 could occur.

COST ESTIMATING FORM
NAVDOCKS 2417 (REV. 5-63)

SHEET 1 OF 1

0105 013 3800

IDENTIFICATION NUMBER
P-755

AREA OR ND	ACTIVITY	LOCATION	CATEGORY CODE NUMBER
5TH ND	MARINE CORPS BASE	CAMP LEJEUNE, N. C.	821-22

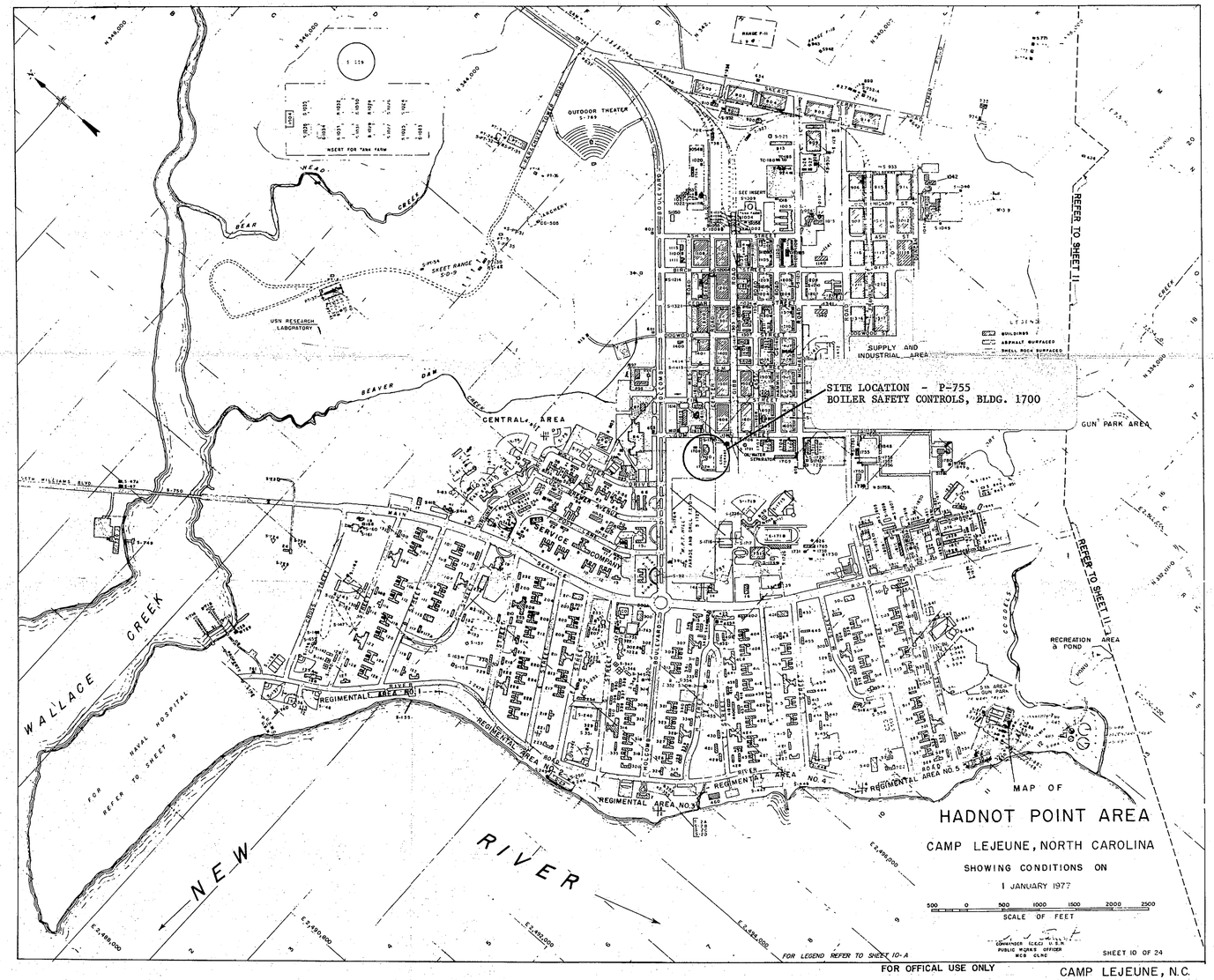
PROJECT (Or line item) TITLE

BOILER SAFETY CONTROLS, BLDG. 1700

ITEM (OR FEATURE) DESCRIPTION (Abbreviate if necessary)	QUANTITIES		MATERIAL COSTS		LABOR COSTS		ENGINEERING ESTIMATE	
	NO. OF UNITS	UNIT	UNIT COST	COST	UNIT COST	COST	UNIT COST	COST
1	2	3	4	5	6	7	8	9
Provide & install Fireye sensors, auto gas pilots, relays & timers, Baily comp. & hook-up of burners to coal mills		LS		22,000		6,800		28,800
Air compressor	1	EA		8,000		1,500		9,500
Ref. air dryer	1	EA		2,800		1,100		3,900
Intercom system	1	EA		2,500		1,500		4,000
Diesel generator	1	EA		5,000		3,000		8,000
System testing	1	EA		1,000		6,000		7,000
SUBTOTAL				41,300		19,900		61,200
OVERHEAD 15%								9,180
SALES TAX - 4% of MATERIAL								1,652
TAXES, INS., S.S., 15% OF LABOR								2,985
SUBTOTAL								75,017
PROFIT 10%								7,502
SUBTOTAL								82,519
BOND 1.5%								1,238
SUBTOTAL								83,757
CONTINGENCY 10%								8,376
TOTAL COST ESTIMATE								92,133
							SAY	92,200
DESIGN FEE (Unfunded Cost)								10,000
TOTAL PROJECT COST								102,200

PREPARED BY (Name) | APPROVED BY | TITLE OR ORGANIZATION | DATE

PUBLIC WORKS DEPT.



FOR OFFICAL USE ONLY

CAMP LEJEUNE, N.C.

PWO:THH:sh
P-755/PWD 78-69

20 OCT 1978

230 OMA 200 PWD 20 NAVFAC 9/73

R. S. Noonan, Inc.
P. O. Box 1388
Greenville, S. C. 29602

Re: A/E Contract N62470-76-C-1402, Boiler Safety Controls, Building 1700, Marine Corps Base, Camp Lejeune, N.C.

Gentlemen:

The specifications should inform the contractor that a complete package of shop drawings for all critical items must be delivered to the Public Works Department, Camp Lejeune, N. C., within two working days after the award of the contract for an on-board review.

If you have any questions, please contact Mr. T. H. Hankins, Jr., P. E., of this Command, telephone (919) 451-3238.

Sincerely yours,

C. A. TACK
CDR, CEC, USN
Public Works Officer
By direction of the Commanding General

Blind copy to:
AC/S, Fac
LANTDIV (09A21E)
BMO

Return to Design Div.

CHECKED BY APPLIES

[X] ORDER FOR SUPPLIES OR SERVICES

[ ] REQUEST FOR QUOTATIONS NO. ... RETURN ... COPY(ES) OF THIS ... (THIS IS NOT AN ORDER. See DD Form 1155r)

PAGE 1 OF 2

5. CERTIFIED FOR NATIONAL DEFENSE UNDER DMS REG 1 DO

1. CONTRACT/PURCH ORDER NO.	2. DELIVERY ORDER NO.	3. DATE OF ORDER	4. REQUISITION/PURCH REQUEST NO.
M67001-78-M-7180		78 SEPT 21	See schedule

6. ISSUED BY: CODE M67001
J. Harris/919-451-2186/jm
Purchasing & Contracting Office
Bldg 1211, Marine Corps Base
Camp Lejeune, N. Carolina 28542

7. ADMINISTERED BY: (If other than 6) CODE

8. DELIVERY FOB
[ ] DESTINATION
[X] OTHER
(See Schedule if other)

9. CONTRACTOR/QUOTER CODE FACILITY CODE

NAME AND ADDRESS
Martin's Control & Equipment Co.
2306 N. Lombardy Sk.
Richmond, Va. 23220

10. DELIVER TO FOB POINT BY:
79 JAN 31

11. CHECK IF SMALL BUSINESS MBE [ ] [ ]

12. DISCOUNT TERMS
NET 30 DAYS

13. MAIL INVOICES TO: (In sextuplicate)
SAME AS BLOCK 14

14. SHIP TO: CODE
Freight Traffic Branch
Bldg 1011, Camp Lejeune, N. Carolina 28542
78-M-2186

15. PAYMENT WILL BE MADE BY: CODE M67001
Base Disbursing Officer
MCB, Camp Lejeune, North Carolina 28542

MARK ALL PACKAGES AND PAPERS WITH CONTRACT OR ORDER NUMBER

16. TYPE OF ORDER
DELIVERY [ ] This delivery order is subject to instructions contained on this side of form only and is issued on another Government agency or in accordance with and subject to terms and conditions of above numbered contract.
PURCHASE [X] Reference your TELEQUOTE 78 SEPT 21, furnish the following on terms specified herein, including, for U. S. purchases, General Provisions of Purchase Order on DD Form 1155r (Except CLAUSE NO. 13 APPLIES ONLY IF THIS BOX [ ] IS CHECKED, and NO. 15 IF THIS BOX [ ] IS CHECKED); special provisions ; and delivery as indicated. This purchase is negotiated under authority of 10 USC 2304(a)(3) or as specified in the schedule if within the U. S., its possessions or Puerto Rico; if otherwise, under 2304(a)(6).

[ ] If checked, Additional General Provisions apply; Supplier shall sign "Acceptance" on DD Form 1155r and return copies.

17. ACCOUNTING AND APPROPRIATION DATA – ACCOUNTING CLASSIFICATION (REV. 7-65)

ITEM NO.	APPROPRIATION SYMBOL AND SUBHEAD	OBJECT CLASS	BUREAU CONT. NO.	SUB-ALLOT.	AUTH'N ACCT'G ACTY	TRANS. TYPE	PROPERTY ACCT'G ACTY	COUNTRY	COST CODE	AMOUNT
A11	1781106.2720	000	67001	0	067001	2D	000000		82354632381T	$6,366.40 +Trans

18. ITEM NO.	19. SCHEDULE OF SUPPLIES/SERVICES	20. QUANTITY ORDERED/ ACCEPTED*	21. UNIT	22. UNIT PRICE	23. AMOUNT
	PRIORITY 07				
	THIS IS A CONFIRMING ORDER...Confirms telephonic order of same number and date given your Mrs. Johnson by our Mr. Harris. DO NOT DUPLICATE.				
	MML999 M93058-8265-W009				
1.	4410-00-C99-3465 Fireye (ECA) Volt Meter #38-54	8	ea	97.80	782.40
	MML999 M93058-8265-W010				
2.	4410-00-C99-3466 Fireye Scanner (ECA) #45RM1	8	ea	698.00	5,584.00

25. TOTAL	$6,366.40
29. DIFFERENCES	

* If quantity accepted by the Government is same as quantity ordered, indicate by √ mark. If different, enter actual quantity accepted below quantity ordered and encircle.

24. UNITED STATES OF AMERICA
BY: Ione O. Holsonback
IONE O. HOLSONBACK
Purchasing
XXXXXXX
CONTRACTING/ORDERING OFFICER

26. QUANTITY IN COLUMN 20 HAS BEEN:
[ ] RECEIVED [ ] INSPECTED [ ] ACCEPTED, AND CONFORMS TO THE CONTRACT EXCEPT AS NOTED

Date (Signature of authorized Government representative)

34. I CERTIFY that this account is correct and proper for payment
T.R. DEDMOND, Fiscal Acctg. Supv.
(Signature and title of Certifying Officer)

27. SHIP. NO. [ ] FINAL [ ] PARTIAL

31. PAYMENT [ ] COMPLETE [ ] PARTIAL [ ] FINAL

28. D.O. VOUCHER NO.

32. PAID BY
67001-
SYM #.5190
MCB CLNC

30. INITIALS

33. AMOUNT VERIFIED CORRECT FOR

34. CHECK NUMBER

35. BILL OF LADING NO.

37. RECEIVED AT	38. RECEIVED BY	39. DATE RECEIVED	40. TOTAL CONTAINERS	41. S/R ACCOUNT NUMBER	42. S/R VOUCHER NO.

DD FORM 1 AUG 66 1155 (NAVY) (Overprint 1/70)

Form Approved by Comptroller General, U. S., 27 May 66
Exception to SF 18 under $2,500 Approved by Budget Bureau Oct 66

NAME OF OFFEROR OR CONTRACTOR

MARTIN'S CONTROL & EQUIPMENT CO.

ITEM NO.	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	F.O.B. Richmond, Va. Transportation charges estimated not to exceed $100.00. All transportation charges prepaid and listed on dealers invoice as a separate item.				

CHECKED IF APPLIES [X] ORDER FOR SUPPLIES OR SERVICES

REQUEST FOR QUOTATIONS MAY BE ISSUED. RETURN COPY(ES) OF THIS FORM. (THIS IS NOT AN ORDER. See DD Form 1155c)

2

5. CERTIFIED FOR NATIONAL DEFENSE UNDER DMS REG 1 00

1. CONTRACT/PURCH ORDER NO.	2. DELIVERY ORDER NO.	3. DATE OF ORDER	4. REQUISITION/PURCH REQUEST NO.
M67001-78-M-7179		78 SEPT 22	See schedule

6. ISSUED BY: CODE M67001
J. Harris/919-451-2186/jm
Purchasing & Contracting Office
Bldg 1211, Marine Corps Base
Camp Lejeune, N. Carolina 28542

7. ADMINISTERED BY: (If other than 6) CODE

8. DELIVERY FOB
[ ] DESTINATION
[X] OTHER
(See Schedule if other)

9. CONTRACTOR/QUOTER CODE FACILITY CODE

NAME AND ADDRESS
Bailey Controls Co., Div.
Babcock & Wilcox
4401 Colwick Rd.
Charlotte, N.C. 28211

10. DELIVER TO FOB POINT BY:
79 JAN 31

11. CHECK IF SMALL BUSINESS MBE [ ] [ ]

12. DISCOUNT TERMS
NET 30 DAYS

13. MAIL INVOICES TO: (In sextuplicate)
SAME AS BLOCK 14

14. SHIP TO: CODE
Freight Traffic Branch
Bldg 1011, Camp Lejeune, N. Carolina 28542
78-M-7179

15. PAYMENT WILL BE MADE BY: CODE M67001
Base Disbursing Officer
MCB, Camp Lejeune, North Carolina 28542

MARK ALL PACKAGES AND PAPERS WITH CONTRACT OR ORDER NUMBER

16. TYPE OF ORDER
DELIVERY [ ]
PURCHASE [X]

This delivery order is subject to instructions contained on this side of form only and is issued on another Government agency or in accordance with and subject to terms and conditions of above numbered contract.

Reference your TELEQUOTE 78 SEPT 22, furnish the following on terms specified herein, including; for U. S. purchases, General Provisions of Purchase Order on DD Form 1155c (Except CLAUSE NO. 13 APPLIES ONLY IF THIS BOX [ ] IS CHECKED, and NO. 15 IF THIS BOX [ ] IS CHECKED); special provisions ; and delivery as indicated. This purchase is negotiated under authority of 10 USC 2304(a)(3) or as specified in the schedule if within the U. S., its possessions or Puerto Rico; if otherwise, under 2304(a)(6).

[ ] If checked, Additional General Provisions apply; Supplier shall sign "Acceptance" on DD Form 1155c and return copies.

17. ACCOUNTING AND APPROPRIATION DATA – ACCOUNTING CLASSIFICATION (REV. 7-65)

ITEM NO.	APPROPRIATION SYMBOL AND SUBHEAD	OBJECT CLASS	BUREAU CONT. NO.	SUB-ALLOT.	AUTH'N ACCT'G ACT'Y	TRANS. TYPE	PROPERTY ACCT'G ACT'Y	COUNTRY	COST CODE	AMOUNT
A11	1781106.2720	000	67001	0	067001	2D	000000		82354632381T	$9,905.56 +Trans.

18. ITEM NO.	19. SCHEDULE OF SUPPLIES/SERVICES	20. QUANTITY ORDERED/ ACCEPTED*	21. UNIT	22. UNIT PRICE	23. AMOUNT
	PRIORITY 07				

THIS IS A CONFIRMING ORDER...Confirms telephonic order of same number and date given your Mr. Plummer by our Mr. Harris. DO NOT DUPLICATE.

SEE ATTACHED SHEET FOR ITEMS

F.O.B. Charlotte, N.C. Transportation charges estimated not to exceed $100.00. All transportation charges prepaid and listed on dealers invoice as a separate item.

INQUIRIES REGARDING THIS ORDER SHOULD BE MADE TO MRS. BATCHELOR 919-451-5065

* If quantity accepted by the Government is same as quantity ordered, indicate by √ mark. If different, enter actual quantity accepted below quantity ordered and encircle.

24. UNITED STATES OF AMERICA
BY: Ione O. Holsenback
IONE O. HOLSONBACK
Purchasing CONTRACTING/ORDERING OFFICER

25. TOTAL $9,905.56
29. DIFFERENCES

26. QUANTITY IN COLUMN 20 HAS BEEN:
[ ] RECEIVED [ ] INSPECTED [ ] ACCEPTED, AND CONFORMS TO THE CONTRACT EXCEPT AS NOTED

Date (Signature of authorized Government representative)

27. SHIP. NO. [ ] FINAL [ ] PARTIAL

28. D. O. VOUCHER NO.

30. INITIALS

31. PAYMENT [ ] COMPLETE [ ] PARTIAL [ ] FINAL

32. PAID BY
67001-
SYM #.5190
MCB CLNC

33. AMOUNT VERIFIED CORRECT FOR

34. CHECK NUMBER

35. BILL OF LADING NO.

36. I CERTIFY that this account is correct and proper for payment
T.R. DEDMOND, Fiscal Acctg. Supv.
(Signature and title of Certifying Officer)

37. RECEIVED AT	38. RECEIVED BY	39. DATE RECEIVED	40. TOTAL CONTAINERS	41. S/R ACCOUNT NUMBER	42. S/R VOUCHER NO.

DD FORM 1 AUG 66 1155 (NAVY) (Overprint 1/70)

Form Approved by Comptroller General, U. S., 27 May 66
Exception to SF 18 under $2,500 Approved by Budget Bureau Oct 66

OFFEROR OR CONTRACTOR

BAILEY CONTROLS CO., DIV.

ITEM NO.	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	MML999				
1	M93058-8265-W001 4410-00-C99-3456 Bailey #FT310 Hand-Auto Station	4	ea	382.00	1,528.00
2	M93058-8265-W002 4410-00-C99-3458 #FC218 Controller	4	ea	300.00	1,200.00
3	M93058-8265-W003 4410-00-C99-3459 #FC110 Controller	8	ea	275.00	2,200.00
4	M93058-8265-W004 4410-00-C99-3460 (#5322137A3) #5313073AK3 Solenoid Valve	4	ea	39.00	156.00
5	M93058-8265-W005 4410-00-C99-3461 #5322732H1 Select Relay	4	ea	130.00	520.00
6	M93058-8265-W006 4410-00-C99-3462 #5322732H2 Select Relay	4	ea	130.00	520.00
7	M93058-8265-W007 4410-00-C99-3463 #5319335E1 Bias Relay	8	ea	250.00	2,000.00
8	M93058-8265-W008 4410-00-C99-3464 #1951029A3 PRV 0-30 PSI	4	ea	50.00	200.00
9	M93058-8265-W011 7610-00-C99-3467 Instruction Manuals (Barley)	4	ea	LOT	1,581.56
10	M93058-8265-W012 7610-00-C99-3468 Control Schemtic as Modified (copies) (Barley)	4	ea	Incl	Itm 9
11	M93058-8265-W013 7610-00-C99-3469 Reproducible copy of control schematics as modified (Item 10)	1	ea	Incl	Itm 9

RS NOONAN INC
OF SOUTH CAROLINA
engineers & architects

P O. BOX 1388 GREENVILLE, S. C. 29602 AREA CODE 803-277-7950

U. S. NAVY

TELEPHONE CALL CONFIRMATION

RSNSC JOB NO. 6-048-29

LOCAL ____ L.D. X PLACED X REC'D X DATE October 17, 1978

Larry S. Hyder

OF RSNSC TALKED WITH Mr. Tom Hankins

OF Public Works Department, Marine Corps Base, Camp Lejeune, N. C.

THE FOLLOWING REPRESENTS OUR UNDERSTANDING OF MATTERS DISCUSSED AND ACTIONS AGREED UPON. ANY CORRECTION OR OMISSION OF MERIT SHOULD BE REPORTED PROMPTLY TO THE WRITER.

Subject: Boiler Safety Controls
Building 1700
Marine Corps Base
Camp Lejeune, N. C.
A/E Contract N62470-76-C-1402

1. Control Schematic Diagram will be available from Bailey by the end of October.

2. RSNSC does not check ship drawings (per contract) for this project.

3. RSNSC will design concrete pad for the emergency generator. The generator will be located at the precipitator side of the boiler house exterior. The generator will be furnished and installed by the government except that the contractor shall provide all wiring complete ready for connection to the generator. RSNSC will send generator specification to Mr. Hankins as soon as possible.

4. Mr. Hankins stated that the drawings requested by RSNSC on October 12, 1978 had been mailed on Friday, October 13, 1978. (RSNSC has not received drawings to date.)

5. Mr. Weatherington's phone number is 919-451-3627 (Boiler Building #1700).

Larry S. Hyder

LSH/alc

cc: Mr. T. Hankins
Mr. B. Dulaney
Mr. R. Leigh
RF
CF

RSNSC FORM NO. 62-1

P-755

PUBLIC WORKS DEPARTMENT
Building 1005, Marine Corps Base
Camp Lejeune, North Carolina 28542

In reply refer to

PWO:RHK:sh
P-755

19 OCT 1978

MEMORANDUM

From: Public Works Officer
To: Assistant Chief of Staff, Facilities

Subj: HQMC Project 9710, Install Boiler Safety Controls

Ref: (a) CMC ltr LFF-2-SAB:ed dtd 12 Sep 78

Encl: (1) Project Request Package for 9710 (P-755) consisting of DD Form 1391 dtd 10 Oct 78, NAVDOCKS Form 2417, PW Dwg. No. 13980, and Site Location Map (3 sets)

1. Reference (a) approved the subject project at a funding level of $61,000. Subsequent developments indicate a required funding level of $92,200 (see enclosure (1)).

2. We believe that CMC should be officially notified of this change.

C. A. TACK

RSNOONAN INC
OF SOUTH CAROLINA
engineers & architects

P. O. BOX 1388 GREENVILLE, S. C. 29602 AREA CODE 803-277-7950

U. S. NAVY

TELEPHONE CALL CONFIRMATION

RSNSC JOB NO. 6-048-29

LOCAL ____ L.D. X PLACED X REC'D ____ DATE October 19, 1978

Larry S. Hyder

OF RSNSC TALKED WITH Mr. Tom Hankins

OF Public Works Department, Marine Corps Base, Camp Lejeune, N. C.

THE FOLLOWING REPRESENTS OUR UNDERSTANDING OF MATTERS DISCUSSED AND ACTIONS AGREED UPON. ANY CORRECTION OR OMISSION OF MERIT SHOULD BE REPORTED PROMPTLY TO THE WRITER.

Subject: Boiler Safety Controls
Building 1700
Marine Corps Base
Camp Lejeune, N. C.
A/E Contract N62470-76-C-1402

Drawings requested by RSNSC on October 12, 1978 must have been lost in the mail. Mr. Hankins will have prints made and mailed again. These drawings are required to complete the work in No. 5 Boiler area (intercoms).

Larry S. Hyder

LSH/alc

cc: Mr. T. Hankins
Mr. B. Dulaney
Mr. R. Leigh
RF
CF

PWO:REK:sh
PWD 78-59
23 00

From: Commanding General
To: Commandant of the Marine Corps (LFF-2)

Subj: Minor Construction (R-2) Projects 9710, Install Boiler Safety Controls; 9711, Range Ctl Center; and 9712, Heating Ctls Medical Whse

Ref: (a) CMC ltr LFF-2-SAB:ed dtd 12 Sep 78
(b) CG MCB CLNC ltr FAC:ACA:mkc over P-733 dtd 12 Sep 78

Encl: (1) Project Request Package for 9710 (P-755) consisting of DD Form 1391 dtd 10 Oct 78, NAVDOCKS Form 2417, P.W. Dwg. No. 13980, and Site Location Map (3 sets)
(2) Project Request Package for 9712 (P-452) consisting of DD Form 1391 dtd 2 Oct 78, NAVDOCKS Form 2417, P.W. Dwg. No. 13939, and Site Location Map (3 sets)

1. In response to reference (a), enclosures (1) and (2) are forwarded.

2. Reference (a) approved Project 9710 at a funding level of $61,000. Subsequent developments indicate a required funding level of $92,200 for a complete and usable alteration.

3. As shown in reference (b) Project 9711 is no longer required; in its place we will submit P-747, Alterations to Building 54, by the end of October 1978.

T. R. BA[illegible]Y
By Direction

Blind copy to: (w/encl)
AC/S, Fac
2d FSSG(REIN)

200 [illegible] 20 11/20

Returned to Public Works Dept.

RSNOONAN INC
OF SOUTH CAROLINA
engineers & architects

P O. BOX 1388 GREENVILLE, S. C. 29602 AREA CODE 803-277-7950

U.S. NAVY

TELEPHONE CALL CONFIRMATION

RSNSC JOB NO. 6-048-29

LOCAL _____ L.D. XX PLACED XX REC'D _____ DATE October 23, 1978

L. S. Hyder

OF RSNSC TALKED WITH Mr. Tom Hankins

OF Public Works Department, Camp Lejeune, North Carolina

THE FOLLOWING REPRESENTS OUR UNDERSTANDING OF MATTERS DISCUSSED AND ACTIONS AGREED UPON. ANY CORRECTION OR OMISSION OF MERIT SHOULD BE REPORTED PROMPTLY TO THE WRITER.

Subject: Boiler Safety Controls
Building 1700
Marine Corps Base
Camp Lejeune, North Carolina
A/E Contract: N62470-76-C-1402

The air compressor replacement was discussed. Mr. Hankins stated that existing receivers should be replaced and a new air dryer provided. RSNSC informed Mr. Hankins that an after cooler may be required.

The present air pressure operating range is 60 - 85 PSI.

Mr. Hankins requested RSNSC to obtain intercom prices and recommend a system to meet boiler operator's requirements.

Larry S. Hyder

LSH:aw

cc: Mr. T. Hankins
Mr. B. Dulaney
Mr. R. A. Leigh
CF
RF

5. Government furnished Bailey components to ratio coal/air mixture and control two burners of each boiler on one coal mill.

6. A new contractor furnished duplex air compressor, and refrigerated air dryer to supply dry, oil-free air for the control system of the four boilers.

7. A new L.P. gas emergency generator to supply power for control air compressor, safety control circuits and control panel lights in case of building power failure. Final location of generator to be determined after size (KW) is determined.

8. New contractor furnished intercom units at boilers 1-5, and at central control panel. Provide for future additions of stations.

B. Mr. Hankins requested progress prints to be sent on a weekly basis. RSNSC indicated that the first prints would be available the last week in October.

C. Label all government furnished equipment on the drawings (G.F.C.I.).

D. Telephone calls were made to Bailey Equipment vendor, Martin and Sons Controls, Inc., and Mr. Ruso at Norfolk.

III. DATA RECEIVED

A. Several drawing numbers were selected for prints to be made and copies sent to RSNSC.

B. An operator's manual (Keeler) was loaned to RSNSC and will be returned at the completion of the project.

C. Intercom spec. sheets were given to RSNSC.

D. Several photographs of the boilers and control panels were made by RSNSC.

Larry S. Hyder

LSH/alc
cc: All those attending meeting
Mr. Maxey Bryant
Mr. B. H. Dulaney
Mr. R. A. Leigh
RF
CF

R. S. NOONAN, INC. OF SOUTH CAROLINA

HISTORY NO. 001

U. S. MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

RSNSC Job No. 6-048-29
DATE: October 23, 1978

DATE OF MEETING : October 10, 1978

PLACE OF MEETING: U. S. Marine Corps Base
Camp Lejeune, North Carolina

PRESENT FOR : PUBLIC WORKS DEPARTMENT, MARINE CORPS BASE

Mr. Tom Hankins

R. S. NOONAN, INC. OF SOUTH CAROLINA (RSNSC)

Mr. L. S. Hyder
Mr. S. D. Hendrick

THE FOLLOWING REPRESENTS OUR UNDERSTANDING OF MATTERS DISCUSSED AND ACTIONS AGREED UPON. ANY CORRECTION OR OMISSION OF MERIT SHOULD BE REPORTED PROMPTLY TO THE WRITER.

I. PURPOSE OF MEETING

The purpose of this meeting was to review the work to be done and obtain field data required for design of boiler safety controls installation in Building 1700.

II. DISCUSSION

A. The work required was established as furnishing design, drawings, and specifications for the installation of the following items:

1. Government furnished fireye scanners at each of eight burners.

2. Government furnished gas pilots at each of eight burners.

3. Modify controls with necessary relays and timers to permit fully automatic firing on coal.

4. Automatic oil and steam valves were requested and discussed. (The writer will check to see if this was included in the original scope of work.) Repipe existing oil and steam lines in front of boiler for safe operator access to valves.

RS NOONAN INC
OF SOUTH CAROLINA
engineers & architects

P O. BOX 1388 GREENVILLE S. C. 29602 AREA CODE 803-277-7950

U.S. NAVY

TELEPHONE CALL CONFIRMATION

RSNSC JOB NO. 6-048-29

LOCAL _____ L.D. XX PLACED XX REC'D _____ DATE October 25, 1978

L. S. Hyder

OF RSNSC TALKED WITH Mr. Dick Sechrise

OF E. Keeler Co., Williamsport, Pennsylvania

THE FOLLOWING REPRESENTS OUR UNDERSTANDING OF MATTERS DISCUSSED AND ACTIONS AGREED UPON. ANY CORRECTION OR OMISSION OF MERIT SHOULD BE REPORTED PROMPTLY TO THE WRITER.

Subject: Boiler Safety Controls
Building 1700
MCB, Camp Lejeune, North Carolina

Mr. Sechrise recommended the new scanner be mounted in the side of the boiler. He will send RSNSC a set of boiler drawings with location marked. Also, Mr. Sechrise will furnish drawings on vents (dampers) as required to mount air cylinders to provide automatic operation.

Mr. Sechrise expects this information to be mailed on Thursday, October 26, 1978.

Larry S. Hyder

LSH:aw

cc: Mr. T. Hankins
Mr. B. Dulaney
Mr. R. A. Leigh
CF
RF

PWO

VZCZCBRA056
RTTUZYUW RUCLBRA0547 2991311-UUUU--RLSSUU.
ZNR UUUUU
R 261311Z OCT 78
FM CG MCB CAMP LEJEUNE NC
TO CMC WASHINGTON DC
BT
UNCLAS //N07000//
INCREASE IN O&MMC FUNDING
A. CG MCB CLNC LTR PWO:280:MMC 11000 OF 24 MAY 78
SUBJ: SUPPLEMENTAL MINOR CONST PROJ P-755, BOILER SAFETY CONTROLS, BLDG 1700
B. CG MCB CLNC 181312Z JUL 1978 - 261337Z
C. CMC 211427Z JUL 78
D. CG MCB CLNC 061543Z OCT 78
1. ON 3 NOV 77 BOILER EXPLOSION OCCURRED IN CENTRAL HEATING PLANT, BLDG 1700. INVESTIGATION BY COMLANTNAVFACENGCOM OF 26 JAN 78 PROVIDED RECOMMENDATION FOR INSTALLATION OF FLAME SAFEGUARD CONTROL SSYSTEM AND THAT NO COAL BE BURNED UNTIL INSTALLED.
2. REF A REQ INST OF FLAME SAFEGUARD CONTROLS BE ASSIGNED PRI 1 IN PROPOSED FY 1979 MINOR CONST PROGRAM. REF B REQ AUTH TO DEVELOP PLANS SPECS FOR CONTRACT ADV AND AWARD ASAP AFTER 1 OCT 78. REF C APPROVED REQ REF B. REF D REQ $9,843 FOR A&E TO PREPARE PLANS AND SPECS.
3. MOST EXPEDITIOUS MEANS TO ACCOMPLISH WORK AT THIS TIME WITHIN EXISTING PROCUREMENT/CONTRACT REGULATIONS DETERMINED TO BE BY PROCUREMENT OF MATERIALS BY GOVT WITH SEPARATE CONTRACT FOR INSTALLATION. IN ORDER TO REDUCE CRITICAL LEAD TIME MATERIALS WERE PLACED ON ORDER CITING LOCAL FY 78 FUNDS WITH EST DELIVERY DATE OF 31 JAN 1979. LANTDIV A&E ESTIMATED TO BE COMPLETE BY

Ltd 1631Z 26 OCT

10 CO
20 N 10/27
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280
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← A copy for my file pls. 41

This is not what has nothing to do with

NOV 1978 IMMEDIATELY FOLLOWED BY COMPETITIVE NEGOTIATIONS FOR A CONTRACT FOR INSTALLATION OF CONTROLS. OPTIMISTICALLY SAFETY CONTROLS WILL BE INSTALLED BY 28 FEB 1979. FUNDS FOR INSTALLATION WILL BE REQUESTED UPON COMPLETION OF NEGOTIATIONS.

4. FY 1979 O&MNC BUDGET FOR FUEL BASED ON FIRING PLAN FOR CENTRAL HEATING PLANT (BLDG 1700) OF 70 PERCENT COAL AND 30 PERCENT OIL. AS INDICATED PAR 3 CONTRACT COMPLETION NOT ANTICIPATED IN TIME TO BURN SIGNIFICANT AMT COAL DURING HEATING SEASON. REQUEST ADDITIONAL $283,000 FOR USE OF OIL IN LIEU OF COAL. THIS AMT OF FUNDS REFLECTS USING 50 PERCENT COAL FOR REMAINDER FY 79 ONCE SAFETY CONTROLS ARE OPERATIONAL. IN EVENT INSTALLATION AND OPERATION DELAYED BEYOND 1 MAR 1979, COSTS FOR FUEL OIL IN LIEU OF COAL WILL BE REQUIRED AS FOLLOWS:

BOD	COSTS
1 APR 79	319,000
1 MAY 79	350,000
1 JUN 79	381,000
1 JUL 79	442,000
1 AUG 79	458,000

BT
#0547
TOD: 26 OCT 78 1631Z
REIO: F L TOLLESON, COL
DIST: COMPT, FAC, PWO, BMAIN

NNNN

VZCZCRBA355

RTTUZYUW RUEACMC1790 3000512-UUUU--RUCLBRA.

ZNR UUUUU

R 261337Z OCT 78

FM CMC WASHINGTON DC

TO RUCLBRA/CG MCB CAMP LEJEUNE NC

BT

UNCLAS //N11019//

FY79 FAC PROJ PROG, HQMC PROJ NO 9710 INSTALL BOILER SAFETY CONTROLS (CIC CODE LFF-2/FDB)

A. CG MCB CAMP LEJEUNE 061643Z OCT 78

1. REQ CONT REF FOR FUNDING PP&S FOR SUBJ PROJ APPROVED. DO NOT EXCEED AUTH COST SUBJ PROJ W/OUT APPROVAL THIS HQTRS. FOL DATA APPLIES:

PROJ NO	TITLE	AUTH COST
9710	INSTALL BOILER SAFETY CONTROLS	$9,843

2. IAW THE REF, OPBID FUND AUTH UNDER 17911.3S REVISED AS FOLS:

A. UIC 67001

B. SUBHEAD 2720

C. QUARTER FIRST

D. OBLIGATION AND EXPENSE AUTH INCREASED $9,843

E. OPBID AMEND FOLS

3. FUNDS PROVIDED FOR HQMC PROJ 9710 (R-2).

BT

#1790

ACTION: FAC

INFO: COMP, PWO

TOR: OCT 27 05 15z78

NNNN

PWO

741

10 JM 10/27

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200 RHK 10/30

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R. S. Noonan, Inc. of South Carolina
P O. Box 1388 Donaldson Center Build 105
GREENVILLE, S C. 29602

Phone (803) 277-7950

LETTER OF TRANSMITTAL

Public Works Officer
Marine Corps Base
Camp Lejeune, N.C. 28542

DATE	JOB NO.
Oct. 27, 1978	6-048-29

ATTENTION: Mr. Tom Hankins

RE: Installation of Boiler Safety Controls, Bldg. 1700 MCB Camp Lejeune, N.C.

A/E Contract N62470-66-C-1402

GENTLEMEN:

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via _____ the following items:

☐ Shop drawings ☒ Prints ☐ Plans ☐ Samples ☐ Specifications

☐ Copy of letter ☐ Change order ☐ _____

COPIES	DATE	NO.	DESCRIPTION
1		C-1	Site Plan and Index
1		E-1	Ground Floor Plan and Details
1		E-2	Operating Floor Plan and Details
		E-3	Panel Details
		E-4	Schematic Diagrams

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval

☐ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution

☒ As requested ☐ Returned for corrections ☐ Return _____ corrected prints

☐ For review and comment ☐ _____

☐ FOR BIDS DUE _____ 19_____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS _____

COPY TO CF(T), RF(T)

R. S. Noonan, Inc. of South Carolina
P. O. Box 1388 Donaldson Center Building 105
GREENVILLE, S.C. 29602

Phone (803) 277-7950

LETTER OF TRANSMITTAL

DATE	JOB NO.
October 30, 1978	6-048-29

ATTENTION: Mr. Tom Hankins

RE: Boiler Safety Controls

Drawings for Design Reference

U. S. Marine Corps

Marine Corps Base

Camp Lejeune, North Carolina 28542

ENTLEMEN:

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via _____ the following items:

☐ Shop drawings ☒ Prints ☐ Plans ☐ Samples ☐ Specifications

☐ Copy of letter ☐ Change order ☐ _____

IES	DATE	NO.	DESCRIPTION
	7-12-72	15407-W-2	Schematic Wiring Diagram for Two Burners
	8-29-72	D5057317A	Control Schematic

IESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval

☐ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution

☐ As requested ☐ Returned for corrections ☐ Return _____ corrected prints

☐ For review and comment ☐ _____

☐ FOR BIDS DUE _____ 19_____ ☐ PRINTS RETURNED AFTER LOAN TO US

EMARKS (One copy and original prints to Mr. Tom Hankins)

SH/alc

c: Mr. B. H. Dulaney (T)

Mr. L. S. Hyder (1)

RF (T)

CF (T)

OPY TO _____

SIGNED: [signature]

T. Hankins

RS NOONAN INC
OF SOUTH CAROLINA
engineers & architects

P.O. BOX 1388 • GREENVILLE, S.C. 29602 • AREA CODE 803-277-7950

U. S. NAVY
TELEPHONE CALL CONFIRMATION

RSNSC JOB NO. 6-048-29

LOCAL ____ L.D. XX PLACED ____ REC'D XX DATE October 30, 1978

L. S. Hyder

OF RSNSC TALKED WITH Mr. Tom Hankins

OF Public Works Department, MCB, Camp Lejeune, North Carolina

THE FOLLOWING REPRESENTS OUR UNDERSTANDING OF MATTERS DISCUSSED AND ACTIONS AGREED UPON. ANY CORRECTION OR OMISSION OF MERIT SHOULD BE REPORTED PROMPTLY TO THE WRITER.

Subject: Boiler Safety Controls
Building 1700
MCB, Camp Lejeune, North Carolina

10/27/78

1. The intercom system was discussed. RSNSC was directed to design for a system with six stations now and future of ten additional. Selective calling and talking capabilities will not be required.

2. The new air compressor should be a duplex unit if possible and rated 50-65 CFM. RSNSC is to check with Honeywell and Johnson for air compressor required.

3. RSNSC was requested to return two boiler control drawings.

10/30/78

1. RSNSC was directed to design for one air compressor unit to replace the two now in operation. A standby unit will not be required.

2. Mr. Hankins had been in touch with Johnson Controls and found that a Quincy compressor was available as follows for $8,054:

   63 CFM
   Water Cooled After Cooler
   200 Gallon Tank
   Automatic Drain
   Oil Pressure Safety Switch

Larry S. Hyder

LSH:aw
cc: Mr. T. Hankins
Mr. B. Dulaney
Mr. R. A. Leigh

RSNOONAN INC
OF SOUTH CAROLINA
engineers & architects

P.O. BOX 1388 • GREENVILLE, S.C. 29602 • AREA CODE 803-277-7950

U. S. NAVY
TELEPHONE CALL CONFIRMATION

RSNSC JOB NO. 6-048-29

LOCAL ____ L.D. XX PLACED ____ REC'D XX DATE October 30, 1978

L. S. Hyder

OF RSNSC TALKED WITH Mr. Martin Johnson

OF Martin's Control and Equipment Company, Richmond, Virginia

THE FOLLOWING REPRESENTS OUR UNDERSTANDING OF MATTERS DISCUSSED AND ACTIONS AGREED UPON. ANY CORRECTION OR OMISSION OF MERIT SHOULD BE REPORTED PROMPTLY TO THE WRITER.

Subject: Boiler Safety Controls
Building 1700
MCB, Camp Lejeune, North Carolina

Mr. Johnson made the following comments:

1. The new volt meters should be located at the central operator's panel.

2. For information on the new ignitors, RSNSC should contact Mr. Tom Bell at Automatic Controls, Atlanta, Georgia. Phone 404/266-0130.

3. Scanner location should be as directed by E. Keeler Company, Williamsport, Pennsylvania.

4. The new 4PDT transfer switches should be located in the existing boiler operator panels (fireye panels) or in a suitable "Hoffman" enclosure.

5. Information for mounting air cylinders on dampers must be obtained from E. Keeler Company.

6. The timers for ignition and firing on coal should be with a 0 - 5 min. range.

7. Timers and relays will require a "Hoffman" panel for mounting, and may be combined with 4PDT transfer switch.

Larry S. Hyder

LSH:aw
cc: Mr. M. Johnson
Mr. T. Hankins
Mr. B. Dulaney
Mr. R. A. Leigh
CF

DEPARTMENT OF THE NAVY
ATLANTIC DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
NORFOLK, VIRGINIA 23511

10
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202
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NOV 8

TELEPHONE NO.
444-7521
IN REPLY REFER TO:

09A21E:MLB
N62470-76-C-1402

30 OCT 1978

R. S. Noonan, Inc. of South Carolina
P. O. Box 1388
Greenville, South Carolina 29602

Re: A&E Contract N62470-76-C-1402, Boiler Safety Controls, Building 1700, Marine Corps Base, Camp Lejeune, North Carolina

Gentlemen:

In reference to the revised list of equipment forwarded to you on 6 October 1978, it is requested that you review the new list for Government furnished and contractor furnished material and recommend revising if required since the total design is your responsibility.

Sincerely yours,

A. G. BRYANT, JR., P.E.
Head, CONUS Branch
Acquisition Project Management Office
By direction of the Commander

Copy to:
MARCORB CAMLEJ (Public Works)
MARCORB CAMLEJ

DEPARTMENT OF THE NAVY
ATLANTIC DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
NORFOLK, VIRGINIA 23511

TELEPHONE NO.
444-7231

IN REPLY REFER TO:
02A2:ALM:mek
N62470-78-R-8541

30 OCT 1978

From: Commander, Atlantic Division, Naval Facilities Engineering Command
To: R. L. Moeller, LCDR, CEC, USN, Member
Mr. G. M. Gulbranson, Member
Mr. J. C. Grubbs, P. E., Member

Subj: Contract N62470-78-R-8541, Boiler Safety Controls, Building 1700, at the Marine Corps Base, Camp Lejeune, North Carolina

Ref: (a) NAVFAC P-68 (Section V, Part 3)

1. Pursuant to authority contained in reference (a), the Officer in Charge of Construction hereby appoints a Board consisting of the addressees.

2. The Board will obtain through negotiation procedures an equitable cost for boiler safety controls in accordance with the specification therefor.

3. The Board will report its findings and recommendations to the Officer in Charge of Construction.

E. W. McLAUGHLIN
By direction

Copy to:
OICC/ROICC MARCORB CAMLEJ

ROUTING ORDER | INT
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DEPARTMENT OF THE NAVY
ATLANTIC DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
NORFOLK, VIRGINIA 23511

TELEPHONE NO.
444-7231

IN REPLY REFER TO:
02A2:ALM:mek
N62470-78-R-8541

30 OCT 1978

From: Commander, Atlantic Division, Naval Facilities Engineering Command
To: Mr. S. J. Franklin, Jr., P. E., Senior Member
Mr. M. L. Bryant, P. E., Member
Mr. A. L. Morgan, Member

Subj: Contract N62470-78-R-8541, Boiler Safety Controls, Building 1700, Marine Corps Base, Camp Lejeune, North Carolina

Ref: (a) NAVFAC P-68 (Section V., Part 3)

1. Pursuant to authority contained in reference (a), the Officer in Charge of Construction hereby appoints a Slating Committee consisting of the addressees.

2. The Committee shall compile a list of not less than four (4) qualified contractors to be solicited for participation in competitive negotiation of the subject project.

3. The Committee shall report its recommendations in accordance with reference (a).

E. W. McLAUGHLIN
By direction

Copy to:
OICC/ROICC MARCORB CAMLEJ

	ROUTING ORDER	INT
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2	20	M 11/6
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RS NOONAN INC
OF SOUTH CAROLINA
engineers & architects

P. O. BOX 1388 GREENVILLE, S. C. 29602 AREA CODE 803-277-7950

T Hankins

U. S. NAVY

TELEPHONE CALL CONFIRMATION

RSNSC JOB NO. 6-048-29

LOCAL ____ L.D. X PLACED ____ REC'D X DATE October 31, 1978

Larry S. Hyder

OF RSNSC TALKED WITH Mr. Tom Hankins

OF Public Works Department, Camp Lejeune, North Carolina

THE FOLLOWING REPRESENTS OUR UNDERSTANDING OF MATTERS DISCUSSED AND ACTIONS AGREED UPON. ANY CORRECTION OR OMISSION OF MERIT SHOULD BE REPORTED PROMPTLY TO THE WRITER.

SUBJECT: Boiler Safety Controls
Building 1700
Marine Corps Base
Camp Lejeune, North Carolina
A/E Contract: N62470-76-C-1402

10-31-78

1. The air compressor replacement was again discussed. RSNSC was directed to specify a duplex unit if available in the required size for subject job. If not, two units should be specified with one air dryer and one receiver. Alternation of the two units is required. Size for CFM such that a compressor will run 50% of the time. This would be based on existing compressor CFM plus any additional required by this project. The existing compressor runs approximately 88% of the time. It is expected that the additional requirements for instrument air will be 4 CFM.

2. The progress prints were discussed and except for minor comments, are acceptable to the government.

3. The drawings (2 control diagrams) previously loaned to RSNSC have to be returned to Mr. Hankins by mail.

4. The generator will be specified as soon as the air compressor motor HP is final.

Telephone Call Confirmation
U. S. Navy
RSNSC Job No. 6-048-29
October 31, 1978

11-1-78

1. The new pilots were discussed. Mr. Hankins will call the vendor to request drawings.

2. Some error was discovered in regard to government furnished items. RSNSC requested clarification of which items have or will be purchased by the government. Mr. Hankins will call back with this information.

3. Dimensions for transfer switch location were given RSNSC by Mr. Hankins.

Larry S. Hyder

LSH:jmh
cc: Mr. T. Hankins
Mr. B. Dulaney
Mr. R. A. Leigh
Mr. G. F. Gibbons
CF
RF

R S NOONAN INC
OF SOUTH CAROLINA
engineers & architects

P.O. BOX 1388 GREENVILLE, S. C. 29602 AREA CODE 803-277-7950

November 10, 1978

Public Works Office
Marine Corps Base
Camp Lejeune, North Carolina 28542

Attention: Mr. Tom Hankins

Subject: A/E Design for Installation of Boiler Safety Controls, Building 1700
RSNSC Job No. 6-048-29

Gnetlemen:

Enclosed is the 90% design submittal for the subject project. Submittal consists of plans, specifications and cost estimate. We trust the submittal meets with your approval and look forward to receiving your review comments.

Yours very truly,

R. S. NOONAN, INC. OF SOUTH CAROLINA

Brian H. Dulaney

Brian H. Dulaney, P. E.
Project Manager

BHD:doj

Enclosure

cc; Mr. L. S. Hyder
CF
RF

Tom Hankins

R. S. NOONAN, INC. OF SOUTH CAROLINA

HISTORY NO. 002

U. S. NAVY
CAMP LEJEUNE, NORTH CAROLINA

RSNSC Job No. 6-048-29
DATE: November 21, 1978

DATE OF MEETING : November 15 - 17, 1978

PLACE OF MEETING: Marine Corps Base
Camp Lejeune, North Carolina

PRESENT FOR : PUBLIC WORKS DEPARTMENT, MCB, CAMP LEJEUNE

Mr. Tom Hankins

R. S. NOONAN, INC. OF SOUTH CAROLINA (RSNSC)

Mr. L. S. Hyder

THE FOLLOWING REPRESENTS OUR UNDERSTANDING OF MATTERS DISCUSSED AND ACTIONS AGREED UPON. ANY CORRECTION OR OMISSION OF MERIT SHOULD BE REPORTED PROMPTLY TO THE WRITER.

I. PURPOSE OF MEETING

The purpose of this meeting was to review the project and obtain Government comments for A/E Contract N62470-78-B-8541, 90% submittal.

II. DISCUSSION

A. All air piping at the instrument air compressors should be replaced by this contract. This includes piping from the compressors to the receivers and from receivers to air dryer, and from dryer to existing header. The government will clean existing receivers being reused. (A new receiver will not be installed with this job.)

B. The government will furnish an LP Gas Tank large enough to supply emergency generator. The gas line for generator will connect into existing gas header inside the building near existing gas meter.

C. Relocate only the manual gas valve for gas line to manual torch at each boiler. This will be done so operator will not have to reach under existing piping when lighting torch. Other piping in front of boilers will remain "as is".

D. Additional field data was taken at Building 1700 as required for design.

E. Vendor drawings were loaned to RSNSC as follows:

Carr & J. E. Greiner Co. #2715, 2716, 2717
Westinghouse #AT-5141 & 13A-2071

F. The emergency generator system will be furnished and installed by the contractor instead of the Government.

G. Government marked drawings, specifications and cost estimate were received by RSNSC for completion and re-submittal.

H. In general, the Government felt that this was a good submittal, approved as noted. Mr. Hankins expressed his thanks for the cooperation received from RSNSC in making an early submittal.

I. RSNSC will contact Mr. Hankins on Monday or Tuesday of next week to establish date for final submittal.

Larry S. Hyder
Project Engineer

LSH/alc

cc: All those attending meeting
Mr. B. Dulaney
Mr. R. A. Leigh
RF
CF

Babcock & Wilcox

Bailey Meter Company, U.S.A.

4401 Colwick Road, Charlotte, N.C. 28211
Telephone: (704) 364-8722

November 22, 1978

Mr. Tom Hankins
Public Works Design
Building 1005
U. S. Marine Corps Base
Camp LeJeune, N. C. 28542

Subject: Order M-67001-78-M-7179
Our SO's 619735 & 619736

Dear Mr. Hankins:

Scheduled delivery of equipment on subject order is December 29, 1978 on SO 619735 and January 5, 1979 on SO 619736.

Very truly yours,

BAILEY CONTROLS COMPANY
(Our New Name)

E. L. Plummer

E. L. Plummer
Charlotte District

ELP:h

Attach:

TO:
P.O. BOX 92309-N
EVELAND, OHIO 44193

WICKLIFFE, OHIO 44092
D-U-N-S 04-346-1359
S.O.'s 619735-36

INVOICE & S.O. NO.
P-619735

DATE

RDER M-67001-78-M-7179

FIELD REQ.

DIST. CR 9132, 5287
500S1

EQ.

PROPOSAL

Freight Traffic Branch
Building #1011
Camp LeJeune, N.C. 28542

SHIP TO

Freight Traffic Branch
Building # 1011
Camp LeJeune, N.C. 28542

S: NET CASH 30 DAYS. NO DISCOUNT FOR PREPAYMENT

MARK Order No. M-67001-78-M-7179

SHIPPING POINT

VIA

SHIP VIA P

TY	REV	S	DATE SHIPPED	BILLING PRICE UNIT	BILLING PRICE AMOUNT	
		Type FT310 M/A Transfer Station *			9905.56; LOT	382.00 X4 1528.00
		Servico Legend: Coal - Forced Draft				
		ACC:				
		Type FC210 Controller			Incl.	300.00 X4 1200.00
		ACC:				
		Type FC110 Controller			Incl.	275.00 X8 2200.00
		ACC:				
		RECEIVED OCT 1 [illegible] E.M.C. - CHARLOTTE, N. C.				CR ACCT 759.20 CONTIG. & ENGR. 1581.56 Parts 3396.00 9905.56
		Instruction Envelope P91-9			Incl.	
		Instruction Envelope #P92-11			Incl.	
		(AK) (04) 17-17				

TIONAL INSTRUCTIONS

3

SCHEDULED 12-29-78

-22-78 9-27-78 10-9-78 12-30-78

np

10/9 K

REF.

A B C

INVOICE & SO. NO.

P-619735

TO:
P.O. BOX 92309-N
CLEVELAND, OHIO 44193

WICKLIFFE, OHIO 44092
D-U-N-S 04-346-1359

INVOICE & S.O. NO.
P-619736

DATE
ORDER M-67001-78-M-7179
REQ.
S.O.'s 619735-36
FIELD REQ.
PROPOSAL

DIST. CR 9132, 5287
50081

Freight Traffic Branch
Building #1011
Camp LeJeune, N.C. 28542

SHIP TO

Freight Traffic Branch
Building #1011
Camp LeJeune, N.C. 28542

S: NET CASH 30 DAYS. NO DISCOUNT FOR PREPAYMENT
SHIPPING POINT

MARK Order No. M-67001-M-7179

VIA

SHIP VIA P

TY	REV		DATE SHIPPED	BILLING PRICE UNIT	BILLING PRICE AMOUNT	
		#5313073AK3 Solenoid Valve			Incl.	Billed on S.O. 619735
		#5322732B1 Sel. Relay			Incl.	
		#5322732B2 Sel. Relay			Incl.	
		#5319335E1 Bias Relay			Incl.	
		#1951029A3 Filter Regulator			Incl.	
		#5328379A1 Trim Package			Incl.	

RECEIVED
OCT 2 3 1978
B.M.C. - CHARLOTTE, N. C.

(AK) (21) 17-17

TIONAL INSTRUCTIONS
TE#3

SCHEDULED
1-5-79

-22-78 9-27-78 10-9-78 12-30-78
np
(12) 1% AK

REF.

A B C

INVOICE & SO. NO.
P-619736

RSNSC
OF SOUTH CAROLINA
engineers & architects

P.O. BOX 1388 GREENVILLE, S. C 602 AREA CODE 803-277-7950

U. S. NAVY

T. Hankins

TELEPHONE CALL CONFIRMATION

RSNSC JOB NO. 6-048-29

LOCAL ____ L.D. X PLACED X REC"D ____ DATE November 28, 1978

Larry S. Hyder

OF RSNSC TALKED WITH Mr. Tom Hankins

OF Public Works Department, MCB, Camp Lejeune, North Carolina

THE FOLLOWING REPRESENTS OUR UNDERSTANDING OF MATTERS DISCUSSED AND ACTIONS AGREED UPON. ANY CORRECTION OR OMISSION OF MERIT SHOULD BE REPORTED PROMPTLY TO THE WRITER.

SUBJECT: Contract No.N62470-78-B-8541
Installation of Boiler Safety Controls, Building 1700
Camp Lejeune, North Carolina

1. Mr. Hankins requested RSNSC to include some form of operating sequence for boiler controls. This will be added to the drawings or specs.

2. In the future, all mailings to Mr. Hankins should include the following as part of the address:

   Public Works Design
   Building 1005
   Marine Corps Base

3. Mr. Hankins plans to be in Norfolk, Virginia on December 6, 1978 for a review of the 100% submittal of the subject job. RSNSC personnel may be contacted by telephone on that day if questions arise.

4. The intercom specification for subject job was discussed. RSNSC will submit a new specification section for intercommunication systems.

5. Mr. Hankins requested RSNSC to call and inform him when the 100% submittal is sent and how it will arrive (i.e., mail, bus, etc.).

6. The format for ammendments to Job No. 6-048-18, Officer's Club Heating and Air Conditioning was mailed to RSNSC on November 27, 1978. This work should be completed by December 15, 1978.

Larry S. Hyder
Project Engineer

LSH:doj
cc: Mr. T. Hankins
Mr. B. H. Dulaney
Mr. G. F. Gibbons
Mr. R. A. Leigh
CF
RF

JACKSONVILLE, NORTH CAROLINA

DAILY NEWS

PAGE 4B SATURDAY, DECEMBER 2, 1978

New boilers ready to go at Lejeune

By Sgt. DAVE SMITH

CAMP LEJEUNE — One year ago one of the four central heating plant boilers here exploded, ruducing the plant's heating capacity 25 percent.

The plant, located in Building 1700, plays a key role in keeping Marines warm since it provides steam for the industrial, Hadnot Point, Hospital and French Creek areas.

Since the explosion, base officials have not only repaired the damaged boiler, but added another. This boosts the plant's capacity to 500,000 pounds of steam per hour, a 100,000 pound increase over years past.

"After the explosion, an inspection team from the Utilities Engineer Branch, Atlantic Division of the Naval Facilities Engineering Command at Norfolk, Va., determined the boiler exploded because of a build-up of gases," according to Billy Elston, deputy base maintenance officer. "It was then decided that, as a safety factor, flame safeguard controls would be installed on the four coal-buring boilers.

"Installation of these flame controls should be completed by early March 1979. But, until then the boilers will be running on fuel oil instead of the more economical 70 percent coal and 30 percent fuel oil mix," he said.

This will cost the base approximately $283,000 more to keep the boilers running through the winter months.

Elston said conservation measures are still important even with the addition of another boiler. "Even though we have the added capacity and no foreseeable problems keeping buildings warm and supplied with hot water," explained Elston, "it doesn't mean we can slack off on energy conservation efforts."

In the interest of reducing pollutants entering the atmosphere, another improvement has been made.

"We are currently installing electrostatic precipitators into the chimneys of the coal buring boilers," said B.L. Lanier, assistant director of utilities at Base Maintenance.

"The precipitators, which should be in complete working order by April 1979, will eliminate 90 percent of the amount of coal ash leaving the four older boiler chimneys. The new boiler operates on fuel oil alone."

R S NOONAN INC
OF SOUTH CAROLINA
engineers & architects

P.O. BOX 1388 GREENVILLE, S. C. 29602 AREA CODE 803-277-7950

November 30, 1978

Public Works Design
Building 1005
Marine Corps Base
Camp Lejeune, North Carolina 28542

Attention: Mr. Tom Hankins

Subject: A/E Design for Installation of Boiler Safety Controls, Building 1700
RSNSC Job No. 6-048-29

Gentlemen:

Enclosed is the 100% design submittal for the subject project. Submittal consists of originals of plans, specifications ~~and cost estimate~~. We trust the submittal meets with your approval.

Yours very truly,

R. S. NOONAN, INC. OF SOUTH CAROLINA

Brian H. Dulaney

Brian H. Dulaney
Project Manager

BHD:doj

Enclosure

Cost estimate to follow later. BHD

cc: CF
RF