AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE	OF	PAGES
	1		1

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. *(If applicable)*
R0003	07/06/04		

6. ISSUED BY CODE W911KB

US ARMY ENGINEER DISTRICT, AK
CEPOA-CT (W911KB)
PO BOX 6898
ELMENDORF AFB, AK 99506-6898

SUSAN COYNER (907)753-2838

7. ADMINISTERED BY *(If other than Item 6)* CODE DACA85

US ARMY ENGINEER DISTRICT, AK
CEPOA-CO-NAO
PO BOX 35066 (BLDG 3025)
FAIRBANKS, ALASKA 99703-0066

8. NAME AND ADDRESS OF CONTRACTOR *(No., street, county, State and ZIP Code)*

CODE 089C4 FACILITY CODE

(X) 9A. AMENDMENT OF SOLICITATION NO.

X W911KB-04-R-0014

9B. DATED *(SEE ITEM 11)*
05/13/04

10A. MODIFICATION OF CONTRACT/ORDER NO.

10B. DATED *(SEE ITEM 13)*

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☒ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☒ is not extended.

Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

(a) By completing Items 8 and 15, and returning 0 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. Accounting and Appropriation Data *(If required)*

PROJECT TITLE AND LOCATION: Design/Construct Power Plant Cooling System, Ft Wainwright, Alaska

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

(X) A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: *(Specify authority)* THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.

B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES *(such as changes in paying office, appropriation date, etc).* SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).

C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:

D. OTHER *(Specify type of modification and authority)*

E. IMPORTANT: Contractor ☒ is not, ☐ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

PROPOSAL DUE DATE IS 15 JUL 2004, 4:00 pm, local time, at the US Army Corps of Engineers-Alaska District, 2204 Third St, Elmendorf AFB, Alaska

NOTICE TO OFFERORS: PLEASE MARK OUTSIDE OF ENVELOPE IN WHICH BID IS SUBMITTED TO SHOW AMENDMENTS RECEIVED. YOU ARE REQUIRED TO ACKNOWLEDGE RECEIPT OF THIS AMENDMENT ON THE REVERSE SIDE OF STANDARD FORM 1442.

IMPORTANT NOTE: BONIFACE GATE HAS REOPENED AND VISITOR CENTER RELOCATED BACK TO THAT GATE - SEE SECTION 00100, PARA 1.6.3 and keep in mind the base is still under tight security measures and access to non-DOD personnel is limited or restricted and requires extra time to process through the gate.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER *(Type or print)*		16A. NAME AND TITLE OF SIGNER *(Type or print)*	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
(Signature of person authorized to sign)		BY *(Signature of Contracting Officer)*	

AMENDMENT TO SOLICITATION
CONTINUATION SHEET

1. SECTION 00800 SPECIAL CONTRACT REQUIREMENTS

a) Reference Section 00800, SPECIAL CONTRACT REQUIREMENTS, SCR-30 OPTION FOR INCREASED QUANTITY, subparagraph a. is amended as follows:

"a. The Government may increase the quantity of work awarded by exercising Optional Items **AM#3…**~~0005 and 0006~~ 0006 and 0007 **…AM#3** at any time, or not at all, but no later than 660 calendar days after receipt of notice to proceed. See section 00700 for time to complete the entire work. Notice to Proceed on work added by exercise of the option will be given upon execution of consent of surety"

a. The following drawings are substituted for the superseded drawings. The identifier "AM #3" appears before and after revised drawings as listed in SCR-5.

NONE

b. The following reissued and/or revised documents are substituted for the superseded documents. The identifier "AM #3" appears before and after new and revised material, except as noted below.

NONE

TECHNICAL SPECIFICATIONS (including submittal registers):

SECTION 01010
Paragraph 1.1.2.5 (f) OTHER SPECIFIC REQUIREMENTS

SECTION 01500
Paragraph 1.6.1 RESIDENT ENGINEER'S OFFICE

NOTE: Revisions within the following documents do not contain the above referenced identifiers.

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c. The following section (including submittal register) is deleted.

NONE

d. The following section (including submittal register) is added.

NONE

e. NOTICE TO OFFERORS: PLEASE MARK OUTSIDE OF ENVELOPE IN WHICH OFFER IS SUBMITTED TO SHOW AMENDMENTS RECEIVED. YOU ARE REQUIRED TO ACKNOWLEDGE RECEIPT OF THIS AMENDMENT ON THE REVERSE SIDE OF STANDARD FORM 1442.

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DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01010

DESIGN REQUIREMENTS

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SECTION 01010

DESIGN REQUIREMENTS

PART 1 GENERAL PROJECT

1.1 PROJECT DESCRIPTION AND STATEMENT OF WORK

1.1.1 General Description

1.1.1.1 Project Goals

This project is to modify the heat rejection systems and related components of the Central Heat and Power Plant (CHPP) located at Fort Wainwright , Alaska. The modification work is generally to be accomplished by replacing the existing water-cooled surface condensers with new, independent air-cooled condensers for each turbine. Fort Wainwright is located immediately east of the City of Fairbanks, Alaska.

1.1.1.2 Current Situation

The existing power generation system at Fort Wainwright consists of three 5 MW condensing turbines (Turbines 3, 4, and 5), one 5 MW noncondensing turbine (Turbine 1), and a 2 MW condensing turbine (Turbine 2). Each condensing turbine exhaust is currently equipped with a surface condenser supplied with cooling water from the cooling pond. Steam from the turbines is condensed in the shell side of the exchangers and the condensate is pumped to the boiler feedwater system. Cooling water for each 5 MW turbine is currently pumped to the condenser by duplex 6,500-gpm centrifugal pumps located at the suction channel of the cooling pond. The water then returns to the discharge channel of the pond. The 2 MW turbine is similar to the 5 MW units, but is not currently operational and is only partially included in this project.

The steam turbines were designed to generate 5.0 MW at an exhaust system pressure of 1.5 in. Hg absolute (corresponding steam saturation temperature of 92°F), assuming no steam is extracted at intermediate pressures for heating or other purposes. Under these conditions, 56,000 lb/hr of throttle steam will generate the required power. At higher exhaust pressures (and temperatures) turbine efficiency decreases, requiring additional throttle steam. The steam turbines are designed to allow steam to be extracted over an adjustable pressure range. Currently the steam turbine extraction pressure is a nominal 100 psig. Currently the steam turbines operate over a wide range of electrical load, throttle steam flow, extraction steam flow and exhaust backpressure.

1.1.1.3 Primary Objective:

This project will eliminate the use of the cooling pond for power generation related functions by the CHPP.

For steam turbines 3, 4 and 5, the existing surface condensers, cooling water pumps and piping, and associated auxiliary equipment shall be removed. For steam turbine #2 the cooling water piping and condensate piping shall be removed, but the condenser and auxiliary equipment shall remain. Each water-cooled condenser shall be replaced with a new air-cooled condenser (ACC) to be installed outdoors. New exhaust steam

ducts shall be provided to convey the exhaust steam to the ACCs.

The ACCs will be equipped with variable speed electric motor-driven fans that shall direct air across the condenser tubes to remove heat from the condensing steam. Condensate will be collected in new hotwells and pumped to the existing boiler feedwater system, while non-condensable gases accumulating in the system shall be collected and removed by new steam jet air ejector systems. Freeze protection systems shall be installed in conjunction with the ACCs to prevent freezing of the condenser tubes during startup and all modes of operation.

Related plant systems, including process, mechanical, electrical, plumbing, fire protection and controls shall be modified to accommodate the new air-cooled condenser systems.

1.1.2 Statement of Work

1.1.2.1 General

Provide all design, labor, materials, supervision of labor, and performance of all operations necessary for the complete and proper accomplishment of the project.

1.1.2.2 Minimum Requirements

Provide all necessary and related civil, structural, mechanical, electrical, plumbing, process, fire protection, controls work and other work as may be required for complete and fully operational systems.

The minimum requirements for accomplishment of the project include, but are not necessarily limited to the following:

a. Demolition of existing water-cooled condensers serving steam turbines #3, 4 and 5. The listed weights of these units is 37,000 pounds each. Demolition shall include the removal of all related auxiliary components, which are taken out of service. Turbine #2 will only have the cooling water piping and condensate piping demolished to the condenser, the condenser and auxiliary equipment will remain.

b. Demolition of the existing condenser cooling water system in entirety, including piping, pumps, electrical, motor control centers, controls, accessories and specialties.

c. Demolition of the existing steam air ejector systems serving the existing surface condensers.

d. Decommissioning the existing cooling water supply and return from the plant to the cooling pond. The existing cooling water supply and return tunnels within the plant shall be plugged and isolated from the cooling pond. The isolated tunnels within the plant footprint shall be sealed and reconfigured to serve as a sump to collect the industrial drains and overflows that currently flow to the cooling pond. A tri-plex sump pump assembly shall be provided to pump collected water from the sump and discharge it through a new forced industrial waste main to the existing plant industrial sewer service. A manual bypass to allow discharge to grade, at a location desired by the plant shall be produced.

e. Installation of new air-cooled condensers serving steam turbines #3, 4 and 5. Air-cooled condensers shall be complete with all necessary provisions for operation in extreme arctic conditions. No other process heat rejection alternative shall be acceptable.

f. New turbine exhaust steam ducts, connected to each respective turbine, routed through the existing CHPP building and on the exterior to connect to the air-cooled condensers. Turbine exhaust steam ducts shall be complete with supports, including anchors, alignment guides, and associated structural elements required to resist applicable static and dynamic design loads, flexible connections and provisions for thermal expansion control and seismic bracing. Turbine steam exhaust ducts shall be complete with condensate drainage provisions, insulation, specialties and accessories.

g. Maintenance access platform(s) located over new turbine exhaust ductwork along the existing 100 psi extraction header, and other locations as required to preserve ready access to existing piping devices and serviceable components.

h. New auxiliary systems to support the operation of the air-cooled condensers, including:

1. Hogging and maintenance steam jet air ejector systems

2. Auxiliary electric vacuum pump for hogging air ejection

3. Condensate return system, with condenser hotwells and condensate transfer pumps

4. Condenser wash system

5. Provisions for condenser start-up, warm up, and extreme low ambient operation.

i. A new cooling system to serve as the primary cooling system for the existing turbine oil coolers. The new cooling system shall utilize the existing plant condensate system as the cooling medium. The cooling system shall include prime and standby circulating pumps, piping, condensate tank connections, oil cooler connections, controls, accessories and specialties. Existing process water system shall serve as back-up cooling source for each turbine oil cooler.

j. New electrical/pump building or buildings, located adjacent to the air-cooled condensers, and housing auxiliary systems supporting the operation of the air-cooled condensers. The electrical/pump building(s) shall be complete with heating, ventilation, limited plumbing, instrument air, shop air, fire protection including sprinklers, power, lighting, communications (phone), CCTV, fire alarm and signal systems. The fire alarm system shall be interfaced with the existing CHPP fire alarm system. A welding outlet shall be provided.

k. The extension of 400 psig high pressure steam, 100 psig high pressure steam, and pumped condensate return, and process air between the CHPP plant and the electrical/pump building(s) with tie-in at appropriate locations within the CHPP plant. Piping shall be routed within the existing utilidor, with new service utilidor

extensions to the electrical/pump building(s). Utilidors shall be prepared and modified as required to accommodate the work. Maintenance access to existing and new services and components within utilidors shall be preserved.

l. The tie-in and extension of a water line from the water main in the utilidor to the new electrical/pump building(s), to provide fire protection and housekeeping water supplies, as well as to provide fire hydrant requirements associated with the electrical/pump building(s) and air cooled condensers. Utilidor shall be prepared and modified as required to accommodate the work. Maintenance access to existing and new services and components within utilidors shall be preserved.

m. Site work, including grading, drainage, fencing, site lighting, site preparation and modifications to the CHPP plant east side service road to accommodate the air-cooled condenser installation. Local lighting and general power to support interior and exterior air-cooled condenser maintenance activities is to be provided.

n. Electrical work, including modifications within the existing CHPP switchyard, and expansion of the existing 12470V plant switchgear to serve the new air-cooled condenser system.

o. Lightning protection systems and grounding matt, tied to all foundation systems is to be provided. New grounding mat shall be tied to existing. New fencing shall be tied to grounding matt and existing fencing ground.

p. Relocation of functions within the existing CHPP plant to accommodate the new air-cooled condenser system, including the relocation of the existing South battery room and the relocation of the existing condenser floor air handling system. The south station battery is to be relocated to the existing electrical room within the CHPP. Provide new batteries to replace existing. The condenser floor air handling system is to be relocated to the old instrument shop.

q. The existing CHPP plant Distributed Control System is to be modified to provide monitoring and alarm for the new air cooled condenser system. Where existing equipment and systems are removed, the associated controls shall be removed in entirety, and any necessary modifications made to the existing control system, software, graphic presentations and documentation.

r. New stand-alone, open protocol, PC based control system to serve the new air cooled condenser system. The PC based control system shall include dual power supplies, dual CPUs, dual Operator Stations within the electrical/pump building(s), an Operator station within the existing plant control room, an Engineering workstation and a Historian PC located within the existing CHPP operations offices, UPS power service, and interface with the existing plant DCS system.

s. New direct digital controls are provided for all new HVAC, plumbing and any other non-process system.

t. Hazardous materials abatement, disposal, monitoring and control during construction as required to accommodate the work.

u. Contaminated soils testing, removal and disposal as required to accommodate the work.

v. Phased construction and phased commissioning of the work to minimize disruption to plant operations. Only a single turbine may be off-line at one time.

w. Complete operations and maintenance documentation shall be provided including standard and emergency operating procedures and lockout-tagout procedures as well as modifications to any existing plant operating data and published procedures. Complete operations and maintenance training shall be provided.

x. Complete commissioning of each new air cooled condenser and all related systems including pre-commissioning, check-out, start-up, performance testing, operational demonstration and turnover.

1.1.2.3 Drawings:

The drawings represent a conceptual design solution that is intended to meet the minimum requirements of the project. The drawings are not complete and do not show all of the features, details, requirements and work necessary for the proper completion of the project.

Additional minimum requirements of the project are indicated on the drawings.

1.1.2.4 Specifications:

The technical specifications are minimum requirements for the project and include both prescriptive and performance requirements. The technical specifications may not address all of the features, details, materials and methods necessary for the proper completion of the project.

1.1.2.5 Other Specific Requirements:

a. Any existing conditions represented are approximate. Contractor shall field verify and accommodate all existing conditions and requirements, which may affect the work.

b. Where existing systems, equipment, or components are removed, remove all associated components, accessories and specialties which as a result are no longer in service, in entirety. Where piping is removed, remove back to point where piping system must remain in service, reconfigure as required and cap. Seal unused openings. Remove abandoned curbs and pads. Patch and repair existing surfaces to match adjacent undisturbed surfaces, or better.

c. Safeguard and protect all existing construction which is to remain. Repair or replace any existing construction which is damaged as a result of this work. Repair or replacement shall be to a condition equal to or better than original.

d. The Government requests salvage of the following: all DCS field-mounted instrumentation devices, transmitters and hardware, and surface condensers tube cleaning system components. No other salvage of existing construction which is removed under this work is requested by the Government. The Contractor shall be responsible for the removal and disposal of all demolished construction.

e. Other work, and other construction contracts will be occurring simultaneously with this project. The Contractor shall coordinate this work with the work of other construction contracts and with the operations and maintenance of the plant.

AM #3...f. The plant shall remain operational at all times. The Contractor shall plan and coordinate any interruptions or out of service requirements for components of the plant with the Contracting Officer in advance. Any interruptions or out of service periods shall be of limited duration. Coordinate provisions for temporary power from Golden Valley Electric Association, with the Contracting Officer. Only one turbine may be off-line at a time. The steam and condensate return main in the utilidor serve the base district heat system. The steam and condensate mains shall not be taken out of service.**...AM #3**

g. All work shall be accomplished in conformance with existing and new equipment manufacturer's recommendations and current plant operational procedures and requirements.

h. Access space to existing to-remain and new equipment is of significant importance. All new work shall be accomplished to maximize maintenance access space to existing to-remain and new components. Maintain site access above existing utilidors to allow excavation, access to and removal of existing utilidor lids. Provide access along electrical switchyard and maintain access to all switchyard components for future repair and/or replacement. Provide access around new air cooled condensers, suitable for maintenance, repair and replacement work.

i. All new auxiliary equipment shall be located within existing space, appropriately conditioned as required, or in new conventional, environmentally conditioned enclosures, suitable for the equipment housed and providing ready access for operations, maintenance and repair.

j. All new exterior electrical distribution systems shall be below grade, unless otherwise noted.

k. Base line assumption is made that a percentage of all excavated soils is contaminated. Notify Contracting Officer whenever contaminated soils are encountered. Reference Proposal Schedule.

l. The Geotechnical Report states that there is a high probability for the subsurface soils to liquefy under seismic conditions. The design for the new Pump/Electrical Building(s), air-cooled condenser units, utilidors and connecting elements will have to address this condition. Reference TM 5-818-1, Soils and Geology Procedures for Foundation Design of Buildings and Other Structures.

m. The new system, including Pump/Electrical Building(s) and the air-cooled condenser units shall be designed in accordance with TI 809-04, Seismic Design for Buildings. For seismic design, use the Seismic Use Group II, Performance Level SE2, with a specified Performance Objective 2A.

1.1.2.6 Betterment Option:

The minimum requirements of the RFP include the requirements for a condenser tube bundle wash system. This sytem consists of a semi-automatic washing system with a portable pressure washer and condenser spray assembly, which would be manully transported to each condenser.

Provide a betterment option that incorporates all necessary design, materials, supervision of labor and performance of all operations necessary to provide a fixed condenser tube bundle wash system with a central pressure washer located in the electrical/pump building and spray assemblies located within each of the 3 condensers. The semi-automatic system should require only the connection of portable hoses between the pressure washer and the condensers to establish cleaning operations.

1.2 LOCATION

This project shall be constructed in the CHPP and on the east side of the CHPP as shown on the civil site plans. The contractor is responsible for the location and identification of all underground utilities, including those not shown in the RFP documents.

1.3 INTENT

The Government seeks to replace the existing water-cooled condenser system for each of turbines #3, 4 and 5 with new air cooled condenser systems and to discontinue use of the existing cooling pond for power generation purposes.

It is the intent of the Government that this project provides a complete, efficient and highly reliable condensing system to support the long-term continued operation of the Fort Wainwright Central Heating and Power Plant.

It is the intent of the Government that this project improves the overall performance, reliability and maintainability of the existing power plant.

It is the intent of the Government that this project be designed and constructed with quality materials and workmanship throughout, and in accordance with all applicable codes, regulations, standards and local ordinances. The criteria and requirements contained herein are the minimum acceptable. The proposer is encouraged to exceed these minimums. Refer to SECTION 00100 PROPOSAL SUBMISSION REQUIREMENTS and SECTION 00120 PROPOSAL EVALUATION FACTORS.

It is the intent of the Government that this project be accomplished while the power plant remains operational, with minimum disruption to the operation of the plant and in full coordination with other plant projects, both in progress and planned.

PART 2 DESIGN REQUIREMENTS

2.1 GENERAL

All work shall be accomplished in accordance with all applicable codes, regulations, standards and local ordinances.

All work shall be accomplished in accordance with recognized engineering

standards and good cold regions practice.

2.2 CODES, STANDARDS, AND REFERENCES

2.2.1 General

Design and construction shall be in accordance with the following codes, standards, regulations and references. If dates are not given, the latest edition is to be used. The most stringent shall govern where discrepancies occur. Other codes, standards, regulations and references may be found throughout this RFP, and shall apply. Other codes, standards and regulations not specifically listed may be applicable, and shall be applied. Where organizations are listed, all relevant codes and standards published by the organization shall be considered applicable.

a. Air Conditioning and Refrigeration Institute (ARI) Air Diffusion Council (ADC)

b. Air Movement and Control Association (AMCA) Air-Conditioning and Refrigeration Institute (ARI)

c. American Conference of Governmental Industrial Hygienist (ACGIH)

d. American National Standards Institute (ANSI)

e. American Petroleum Institute (API)

f. American Society for Testing and Materials (ASTM)

g. American Society of Heating, Air Conditioning, & Refrigeration Engineers, Inc. (ASHRAE)

h. American Society of Mechanical Engineers (ASME)

i. American Water Works Association (AWWA)

j. American Welding Society, Inc. (AWS)

k. Americans with Disabilities Act (ADA)

l. Code of Federal Regulations (CFR)

m. Cold Climate Utilities Manual, Canadian Society for Civil Engineering, 2050 Mansfield Street, Montreal, Quebec H3A 1Z2

n. Engineering Technical Letters (ETL)

o. Factory Mutual Engineering and Research Corp (FM)

p. Fort Wainwright and Fort Richardson Installation Design Guide (available at TechInfo - http://www.poa.usace.army.mil/idg/splash.htm)

q. Fort Wainwright and Fort Richardson Site & Landscape Development Plan (latest edition)

r. IEEE Instrument Society of America (ISA)

s. International Building Code (IBC)

t. International Mechanical Code (IMC)

u. International Fire Code (IFC)

v. Institute of Electrical and Electronics Engineers (Standards)

w. Manufacturers Standardization Society of the Valve and Fittings Industry, Inc.

x. Military Technical Manuals (TM) Technical Instructions (TI) and Handbooks

y. National Association of Corrosion Engineers (NACAE)

z. National Electrical Code (NEC)

aa. National Electrical Manufacturers Association (Standards), NEMA National

bb. National Electrical Safety Code (NESC)

cc. National Fire Protection Association Fire Codes (NFPA)

dd. National Sanitation Foundation (NSF)

ee. National Standard Plumbing Code, Illustrated, latest edition

ff. Plumbing and Drainage Institute (PDI)

gg. Sheet Metal and Air-Conditioning Contractors National Association, Inc. (SMACNA)

hh. TM 5-818-1, Soils and Geology Procedures for Foundation Design of Building and Other Structures (other than Hydraulic Structures)

ii. TM 5-822-2, General Provisions and Geometric Design for Roads, Streets, Walks, and Open Storage Areas

jj. TM 5-822-5, Pavement Design for Roads, Streets, Walks, and Open Storage Areas

kk. State of Alaska Regulations (AAC)

ll. UFC, 3-600-1, Design: Fire Protection Engineering for Facilities

mm. Underwriters Laboratories, Inc. (UL)

nn. Uniform Federal Accessibility Standards

oo. Uniform Plumbing Code

2.2.2 References Sources

Codes, standards, and references, are not attached to this RFP package. Each proposer shall be responsible for obtaining all documents referenced as criteria for this project, but not attached as part of this RFP package.

U.S. ARMY CORPS OF ENGINEERS (USACE)

TI 809-04 (1998) Seismic Design for Buildings

2.2.3 Conflicts Between This RFP and Referenced Documents

In order to suit specific User requests and local site conditions, minimum requirements contained in this RFP may revise, add to, or substitute for criteria contained in the referenced documents. This RFP shall be deemed the controlling authority wherever such conflicts exist.

2.2.4 Reference Drawings

The following drawings are of CHPP projects available as reference for the design phase of this project.

F26-03-11 Area Plot Plans (July 1952). These two drawings show the cooling pond south of the plant. The pond also includes the area shown in dashed lines.

F26-02-39 Replace Cooling Water Pumps & Motors (May 1998). These drawings show the electrical and P&IDs of the recent cooling water pump upgrade, including the instrumentation at each turbine. The pumps now have variable speed drives.

F26-01-37 Replace CHPP Controls (July 1993). Mechanical and electrical drawings for DCS upgrade project.

F26-03-11 Heat Balances of Ladd Air Force Power Plant (July 1952). This drawing shows the plant's predicted heat balance between 3MW and 18MW output.

F26-02-40 Central Heat and Power Plant Interim Repairs

F26-02-38 Central Heat and Power Plant Replace Motor Control Center (September 1993).

F26-02-42 Central Heat and Power Plant Emission Reduction System (Baghouse) June 2001.

F16-06-4181 Upgrade of CHPP, Central Heat and Power Plant (June 2000).

2.3 DESIGNER OF RECORD

Design submittals, and each drawing included therein, shall be signed by and stamped with the seal of an architect or engineer, as appropriate, who is currently registered as an architect or engineer, as appropriate. The engineer who seals the geotech, civil, mechanical, electrical, and structural design drawings must be registered in the State of Alaska. For the purposes of this project, these people shall be designated as "The Designer of Record."

2.4 ADDITIONAL DESIGN REQUIREMENTS

a. Design of the air-cooled condenser system involves the design of exhaust duct connections to the existing steam turbines, and the modification of the power plant operating procedures and manuals to reflect the new air-cooled condenser system. The Contractor shall

coordinate with the existing steam turbine manufacturer and shall assure any exhaust duct connections or other modifications to the existing steam turbines are in accordance with the steam turbine manufacturer's recommendations. The Contractor shall coordinate with the existing steam turbine manufacturer to generate turbine steam flow and extraction curves representative for a range of operation with the air-cooled condensers from 1.5" HgA through maximum allowed, and from minimum extraction through maximum extraction. This shall include a study of the turbine throughput capability to determine allowable increase in throttle and exhaust steam flows at maximum design condensing pressure. The Contractor shall consult with the existing steam turbine manufacturer and shall incorporate manufacturer's recommendations into the modified plant operating procedures and manuals. The Contractor shall prepare new Standard Operating Procedures for the startup, operation, and shutdown of the air-cooled condenser system and the turbine system connected to the air-cooled condensers.

b. There are currently construction projects underway at the CHPP. There are other projects planned or in design. The Contractor shall familiarize himself with existing and planned projects and shall coordinate this project with existing work and planned projects.

c. The Contractor shall complete and provide other investigations and studies as required for the accomplishment of this project. Other investigations and studies may include, but are not necessarily limited to:

1. Field investigation and verification of as-built conditions within the existing facility, as well as changes to the CHPP as a result of construction projects currently under contract.

2. Surveys

3. Geotechnical investigations. An on-site soil exploration was conducted March 2002 by the Government. The Geotechnical Findings Report from that exploration, including test boring logs and laboratory testing and corrosivity data, is enclosed as an attachment in SECTION 02220, EARTHWORK FOR BUILDINGS. It shall be the Contractor's responsibility to provide any additional exploration deemed necessary to complete the design of this structure in accordance with the required guidance. The Design-Build Contractor's Geotechnical Engineer of Record shall be responsible for preparing a Foundation Design Report. The report shall include foundation design analyses and recommendations. It shall be sealed by the engineer in responsible charge, who shall be licensed in civil engineering in the State of Alaska.

4. Turbine exhaust duct flow modeling via computational fluid dynamics analysis.

5. Electrical load flow analysis and determination of capacity as required to serve new equipment loads and power requirements.

6. Electrical coordination study and short circuit analysis as required for new electrical components

7. Hazardous materials survey. The Contractor shall be

responsible for supplementing Government-provided information on Hazardous Materials (HM) with additional surveys, testing, abatement, and disposal plans as required to identify, abate, dispose, monitor, and control HM that will be encountered during construction as required to accomplish the work. All effort required to verify and supplement Government-provided information on HM (to include asbestos and lead) and all effort required to abate, dispose, monitor, and control additional HM that may be so discovered will be considered incidental to the contract and no separate payment or modification will be made.

8. Hazards and Operations analysis for each process and utility system. Conduct according to industry standards to evaluate "what-if" failure scenarios. Document each scenario, finding, and design feature incorporated to mitigate risk.

d. For the purposes of this project, the Central Heating and Power Plant shall be considered an essential facility.

e. The Contractor shall develop a complete and detailed construction phasing plan. The construction phasing plan shall identify turbine work sequencing, planned equipment or systems interruptions, need and scheduling for temporary utilities and power provisions, pre-commissioning and commissioning periods as well as other key project milestones.

PART 3 EXECUTION

3.1 GENERAL

All work performed in association with this Project shall be performed in a professional, craftsman-like and safety-conscious manner, by workers who are qualified in the profession or trade associated with the work to which they are assigned, and who are skilled and experienced in the specific work to which they are assigned.

a. Field verify all conditions and requirements for execution of the work. Perform all necessary field investigations and as-builting as may be required for the proper coordination, execution and completion of the work.

b. Perform work in close coordination with CHPP plant operating personnel, existing plant operations and activities and in coordination with other construction contracts.

-- End of Section --

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DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01500

TEMPORARY CONSTRUCTION FACILITIES

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TEMPORARY CONSTRUCTION FACILITIES

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

1.1.1 Site Plan

The Contractor shall prepare a site plan indicating the proposed location and dimensions of any area to be fenced and used by the Contractor, the number of trailers to be used, avenues of ingress/egress to the fenced area and details of the fence installation. Any areas which may have to be graveled to prevent the tracking of mud shall also be identified. The Contractor shall also indicate if the use of a supplemental or other staging area is desired.

1.1.2 Identification of Employees

The Contractor shall be responsible for furnishing to each employee, and for requiring each employee engaged on the work to display, identification as approved and directed by the Contracting Officer. Prescribed identification shall immediately be delivered to the Contracting Officer for cancellation upon release of any employee. When required, the Contractor shall obtain and provide fingerprints of persons employed on the project. Contractor and subcontractor personnel shall wear identifying markings on hard hats clearly identifying the company for whom the employee works.

1.1.3 Employee Parking

Contractor employees shall park privately owned vehicles in an area designated by the Contracting Officer. This area will be within reasonable walking distance of the construction site. Contractor employee parking shall not interfere with existing and established parking requirements of the military installation.

1.2 AVAILABILITY AND USE OF UTILITY SERVICES

1.2.1 Payment for Utility Services

The Government will make all reasonably required utilities available to the Contractor from existing outlets and supplies, as specified in the contract. The Contractor shall carefully conserve and reasonably use any utilities furnished by the Government (such as water, electricity, sewage, and steam).

Utility	Maximum Amount	Cost
Water	Reasonable	$4.2731/kgal
Electricity	Reasonable	$0.0841/kgal
Sewage	Reasonable	$7.0551/kgal
Landfill Use	Reasonable	$0
Steam	Reasonable	$11.1217/klb

1.2.2 Temporary Connections

The Contractor, at its expense and in a manner satisfactory to the Contracting Officer, shall provide and maintain necessary temporary connections and distribution lines. The Contractor shall notify the Contracting Officer, in writing, 5 working days before final electrical connection is desired so that a utilities contract can be established. Temporary water connection for filling contractor's water trucks shall be connected a Building hydrant # 3003.

1.2.3 Sanitation

The Contractor shall provide and maintain within the construction area minimum field-type sanitary facilities approved by the Contracting Officer. Government toilet facilities will not be available to Contractor's personnel.

1.2.4 Telephone

The Contractor shall make arrangements and pay all costs for telephone facilities desired.

1.3 BULLETIN BOARD

Immediately upon beginning of work, the Contractor shall provide a weatherproof glass-covered bulletin board not less than 36 by 48 inches in size for displaying the Equal Employment Opportunity poster, a copy of the wage decision contained in the contract, Wage Rate Information poster, and other information approved by the Contracting Officer. The bulletin board shall be located at the project site in a conspicuous place easily accessible to all employees, as approved by the Contracting Officer. Legible copies of the aforementioned data shall be displayed until work is completed. Upon completion of work the bulletin board shall be removed by and remain the property of the Contractor.

1.4 PROTECTION AND MAINTENANCE OF TRAFFIC

During construction the Contractor shall provide access and temporary relocated roads as necessary to maintain traffic. The Contractor shall maintain and protect traffic on all affected roads during the construction period except as otherwise specifically directed by the Contracting Officer. Measures for the protection and diversion of traffic, including the provision of watchmen and flagmen, erection of barricades, placing of lights around and in front of equipment and the work, and the erection and maintenance of adequate warning, danger, and direction signs, shall be as required by the State and local authorities having jurisdiction. The traveling public shall be protected from damage to person and property. The Contractor's traffic on roads selected for hauling material to and from the site shall interfere as little as possible with public traffic. The Contractor shall investigate the adequacy of existing roads and the allowable load limit on these roads. The Contractor shall be responsible for the repair of any damage to roads caused by construction operations.

1.4.1 Haul Roads

The Contractor shall, at its own expense, construct access and haul roads necessary for proper prosecution of the work under this contract.

Haul roads shall be constructed with suitable grades and widths; sharp curves, blind corners, and dangerous cross traffic shall be avoided. The Contractor shall provide necessary lighting, signs, barricades, and distinctive markings for the safe movement of traffic. The method of dust control, although optional, shall be adequate to ensure safe operation at all times. Location, grade, width, and alignment of construction and hauling roads shall be subject to approval by the Contracting Officer. Lighting shall be adequate to assure full and clear visibility for full width of haul road and work areas during any night work operations. Upon completion of the work, haul roads designated by the Contracting Officer shall be removed.

1.4.2 Barricades

The Contractor shall erect and maintain temporary barricades to limit public access to hazardous areas. Such barricades shall be required whenever safe public access to paved areas such as roads, parking areas or sidewalks is prevented by construction activities or as otherwise necessary to ensure the safety of both pedestrian and vehicular traffic. Barricades shall be securely placed, clearly visible with adequate illumination to provide sufficient visual warning of the hazard during both day and night.

1.5 CONTRACTOR'S TEMPORARY FACILITIES

1.5.1 Administrative Field Offices

The Contractor shall provide and maintain administrative field office facilities within the construction area at the designated site. Government office and warehouse facilities will not be available to the Contractor's personnel.

1.5.2 Storage Area

The Contractor shall construct a temporary 6 foot high chain link fence around trailers and materials. The fence shall include plastic strip inserts, colored green, so that visibility through the fence is obstructed. Fence posts may be driven, in lieu of concrete bases, where soil conditions permit. Trailers, materials, or equipment shall not be placed or stored outside the fenced area unless such trailers, materials, or equipment are assigned a separate and distinct storage area by the Contracting Officer away from the vicinity of the construction site but within the military boundaries. Trailers, equipment, or materials shall not be open to public view with the exception of those items which are in support of ongoing work on any given day. Materials shall not be stockpiled outside the fence in preparation for the next day's work. Mobile equipment, such as tractors, wheeled lifting equipment, cranes, trucks, and like equipment, shall be parked within the fenced area at the end of each work day.

1.5.3 Supplemental Storage Area

Upon Contractor's request, the Contracting Officer will designate another or supplemental area for the Contractor's use and storage of trailers, equipment, and materials. This area may not be in close proximity of the construction site but shall be within the military boundaries. Fencing of materials or equipment will not be required at this site; however, the Contractor shall be responsible for cleanliness and orderliness of the area used and for the security of any material or

equipment stored in this area. Utilities will not be provided to this area by the Government.

1.5.4 Appearance of Trailers

Trailers utilized by the Contractor for administrative or material storage purposes shall present a clean and neat exterior appearance and shall be in a state of good repair. Trailers which, in the opinion of the Contracting Officer, require exterior painting or maintenance will not be allowed on the military property.

1.5.5 Maintenance of Storage Area

Fencing shall be kept in a state of good repair and proper alignment. Should the Contractor elect to traverse, with construction equipment or other vehicles, grassed or unpaved areas which are not established roadways, such areas shall be covered with a layer of gravel as necessary to prevent rutting and the tracking of mud onto paved or established roadways; gravel gradation shall be at the Contractor's discretion. Grass located within the boundaries of the construction site shall be mowed for the duration of the project. Grass and vegetation along fences, buildings, under trailers, and in areas not accessible to mowers shall be edged or trimmed neatly.

1.5.6 New Building

In the event a new building is constructed for the temporary project field office, it shall be a minimum 12 feet in width, 16 feet in length and have a minimum of 7 feet headroom. It shall be equipped with approved electrical wiring, at least one double convenience outlet and the required switches and fuses to provide 110-120 volt power. It shall be provided with a work table with stool, desk with chair, two additional chairs, and one legal size file cabinet that can be locked. The building shall be waterproof, shall be supplied with heater, shall have a minimum of two doors, electric lights, a telephone, a battery operated smoke detector alarm, a sufficient number of adjustable windows for adequate light and ventilation, and a supply of approved drinking water. Approved sanitary facilities shall be furnished. The windows and doors shall be screened and the doors provided with dead bolt type locking devices or a padlock and heavy duty hasp bolted to the door. Door hinge pins shall be non-removable. The windows shall be arranged to open and to be securely fastened from the inside. Glass panels in windows shall be protected by bars or heavy mesh screens to prevent easy access to the building through these panels. In warm weather, air conditioning capable of maintaining the office at 50 percent relative humidity and a room temperature 20 degrees F below the outside temperature when the outside temperature is 95 degrees F, shall be furnished. Any new building erected for a temporary field office shall be maintained by the Contractor during the life of the contract and upon completion and acceptance of the work shall become the property of the Contractor and shall be removed from the site. All charges for telephone service for the temporary field office shall be borne by the Contractor, including long distance charges.

1.5.7 Security Provisions

Adequate outside security lighting shall be provided at the Contractor's temporary facilities. The Contractor shall be responsible for the security of its own equipment; in addition, the Contractor shall notify

the appropriate law enforcement agency requesting periodic security checks of the temporary project field office.

1.6 GOVERNMENT FIELD OFFICE

1.6.1 Resident Engineer's Office

AM# 3... The Contractor shall provide the Government Resident Engineer with an office, approximately 500 square feet in floor area, located where directed and providing space heat, electric light and power, and temporary toilet facilities consisting of one lavatory and one water closet. An appropriately sized wall mounted air conditioning wall unit shall be installed and connected. A mail slot in the door or a lockable mail box mounted on the surface of the door shall be provided. At completion of the project, the office shall remain the property of the Contractor and shall be removed from the site. Utilities shall be connected and disconnected in accordance with local codes and to the satisfaction of the Contracting Officer.**...AM# 3**

1.6.2 Trailer-Type Mobile Office

The Contractor may, at its option, furnish and maintain a trailer-type mobile office acceptable to the Contracting Officer and providing as a minimum the facilities specified above. The trailer shall be securely anchored to the ground at all four corners to guard against movement during high winds. An existing 10' x 50' trailer is currently on-site. For lease information contract: Summit Logistics Inc., Mr. Warren Smith at 907-456-3733.

1.7 PLANT COMMUNICATION

Whenever the Contractor has the individual elements of its plant so located that operation by normal voice between these elements is not satisfactory, the Contractor shall install a satisfactory means of communication, such as telephone or other suitable devices. The devices shall be made available for use by Government personnel.

1.8 TEMPORARY PROJECT SAFETY FENCING

As soon as practicable, but not later than 15 days after the date established for commencement of work, the Contractor shall furnish and erect tempirary project safety fencing at the work site. The safety fencing shall be a high visibilty orange colored, high density polyethylene grid or approved equal, a minimum of 42 inches high, supported and tightly secured to steel posts located on maximum 10 foot centers, consstructed at the approved location. The safety fencing ahall be maintained by the Contractor during the life of the contract and, upon completion and acceptance of the work, shall become the property of the Contractor and shall be removed from the work site.

1.9 CLEANUP

Construction debris, waste materials, packaging material and the like shall be removed from the work site daily. Any dirt or mud which is tracked onto paved or surfaced roadways shall be cleaned away. Materials resulting from demolition activities which are salvageable shall be stored within the fenced area described above or at the supplemental storage area. Stored material not in trailers, whether new or salvaged, shall be neatly stacked when stored.

1.10 RESTORATION OF STORAGE AREA

Upon completion of the project and after removal of trailers, materials, and equipment from within the fenced area, the fence shall be removed and will become the property of the Contractor. Areas used by the Contractor for the storage of equipment or material, or other use, shall be restored to the original or better condition. Gravel used to traverse grassed areas shall be removed and the area restored to its original condition, including top soil and seeding as necessary.

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