PERFORMANCE WORK STATEMENT

WEAR 248633
NATIONAL PARK SERVICE
WESTERN ARCTIC NATIONAL PARK & PRESERVE
INSTALL ELECTRIC BOILER AT NORTHWEST ARCTIC HERITAGE CENTER
KOTZEBUE, ALASKA

Background

The purpose of this contract is to install an auxiliary electric boiler in the Northwest Arctic Heritage Center located in Western Arctic National Park & Preserve (WEAR), Kotzebue, Alaska. The proposed project includes installation of the boiler and remote access infrastructure, and installation of all associated appurtenances and components necessary for a complete operational system.

Objectives

The Contractor shall furnish the necessary personnel, material, equipment, and services (except as otherwise specified), to furnish and install a new utility-controlled electric boiler, a new 3-phase dedicated service, and all electrical conductors, and electrical and mechanical appurtenances. The boiler will be operated remotely by Kotzebue Electric Association (KEA) via a Programmable Logic Controller (PLC) during periods of wind (or other) energy shedding. The work shall be completed as specified in the description of tasks below.

During the performance of the work, the contractor shall provide adequate professional supervision and quality control to assure the accuracy, quality, completeness and progress of work.

This Scope of Work includes one site visit for the purpose of a site inspection, and one follow up trip for the purpose of installing the new mechanical and electrical equipment. The new utility-controlled boiler is intended to serve as a supplemental heat source to consume excess wind energy generated by KEA.

All work is to be completed in accordance with this Scope of Work, Specifications, and other Contract Documents, as well as all applicable Codes and Standards. Contractor shall, without additional expense to the Government, be responsible for obtaining necessary licenses and permits, and for complying with any and all applicable federal, state, and borough laws, codes, and regulations pertaining to the performance of the service that is to be rendered. It is the responsibility of the contractor to verify that all the information provided in this solicitation is accurate.

The Contractor shall take proper safety and health precautions to protect workers, the public, and property. The Contractor shall provide the Government all requested reports, and supporting material developed during the performance of the work. The Contractor

shall provide adequate professional supervision and quality control to assure the accuracy, quality, completeness and progress of work. The Contractor shall ensure protection during work, and restoration (if damaged), of building finishes, tenant property, furnishings, etc.

Description of Tasks:

1. Install New Electric Boiler at Northwest Arctic Heritage Center
    a) Furnish and Install housekeeping pad. Equipment Dead load to be limited to 100 psf. Extend housekeeping pad a minimum of 6" beyond boiler footprint.
    b) Furnish and install new VoltMax 108 electric boiler (SCR Model) 3P, 208 VAC, 60Hz, 108 KW output, 300 Amps, with 8 ea. 13.5 Kw electric stages (or equal).
    c) Furnish and install Grundfos UPS 40-80/2 F, 3P, 208-230V, 60Hz pump (or equal) to meet minimum system flow requirements of 50 gpm and isolate with full port ball valves.
    d) Furnish and install in-well thermometers and pressure gauges on the supply and return lines of boiler loop.
    e) Insulate all new piping and appurtenances as appropriate with 2" thick self-sealing lap fiberglass pipe insulation. All 90-degree bends to be protected with PVC elbows. All piping to be labeled with flow direction arrows fixed to insulation.
    f) Install all piping and appurtenances to meet applicable design codes and safety standards.
    g) Tie into existing hydronic distribution system return line.
    h) Furnish and install 2 ea. full port ball valves on return line to isolate new boiler loop.
    i) Furnish and install strainer on boiler supply line and isolate with full port ball valves.
    j) Furnish and install air separator at all high points and isolate with full port ball valves.
    k) Furnish and install Glycol feed tank (17-gallon minimum volume).
    l) Clean and flush new heating system components in accordance with manufacturers recommendations and industry standards before operation.
    m) Commission and test boiler operation and remote function. Record amperage and voltage values drawn by the unit at 100% capacity.
    n) Provide operation and maintenance training to NPS personnel. Provide two hard copies, and electronic files of operations and maintenance manuals.

2. Install Boiler Electrical Service
    a) Make connection at existing 150 KVA utility owned transformer.

b) Furnish and Install 3-phase conductors from the transformer to the building exterior. Exterior conductors to be installed in existing conduit, and shall be rated for site specific environmental conditions.
c) Furnish and install NEMA 3R, 400A, 208V, 3P service disconnect with breaker.
d) Furnish and Install manufacturer specified conductors from new 3-phase service disconnect on building exterior to the new boiler location.
e) Furnish and install service disconnect switch and distribution panel at boiler location. Provide 3-phase electrical service as required to boiler and pump. Provide single phase, 120V dedicated service to KEA control panel.
f) Furnish and install Three (3) voltage feeds from service disconnect for KEA supplied power meter.
g) Furnish and install Three (3) current transformers wired to KEA control panel, 600 V, 400/5 ratio. (CR Magnetics CR5A-RL-400:5 or similar)
h) Furnish, install, and label boiler emergency shutoff switch.
i) Furnish and install panel mounted surge protector.
j) All electrical work shall be performed in compliance with all National, state and regional codes, and in accordance with manufacturers recommendations and specifications. Provide electrical grounds in conformance with applicable codes and manufacturers recommendations.
k) Provide Schematic Level Record Drawings of new electrical service connection.

3. Boiler Communication
    a) Furnish and install micro dish antenna on East Face of the southeast corner of the building exterior (See Photo 1). Micro dish shall be a NanoBeam High-performance airMAX ac Bridge, Model: Ubiquiti NBE-M5-16. Coordinate installation with KEA to verify mounting location.
    b) Furnish and install conduit and CAT 5E cable from Micro Dish to the new boiler location. Tie into KEA supplied control panel.
    c) Boiler communication capabilities to include Ethernet and RS485 (BACnet SMTP) Ports.
    d) Boiler shall have DDC 0-10 VDC Capabilities. Remote operation and output to be controlled by KEA through a remote 0-10V PLC.
    e) Coordinate and verify remote operation with KEA personnel.
    f) Tie into building automation and controls system (METASYS). Place conduit and provide CAT 5E cable from the new boiler to the Johnson Controls junction box in the Mechanical Room.
    g) Coordinate conduit placement and boiler communication with Johnson Controls Inc. representative.
    h) Install KEA provided boiler remote control panel (24”x24”x8”) including a 120VAC/15A power supply connection and 1” conduit with pulling string to the new electric boiler.

In addition to the above tasks, the following shall apply to all work performed as part of this contract.

1. All work to be done in conformance with applicable National, State and Local codes, and at a minimum must meet industry standards.
2. All piping and fittings to be of domestic origin (example “Ward”). All copper fittings and piping to be at a minimum type “L” and of domestic origin (example “Mueller).
3. All valves to be of domestic origin full port 600 psi ANSI B1.20.s (threaded) and B16.18 (soldered); (example “Nibco” 585-70).
4. All newly installed pumps shall be variable frequency drive (VFD) pumps unless specified otherwise.
5. Boiler shall be equipped with a low water cut-off and a redundant high temperature limit safety, with manual reset.
6. All major components including pumps shall be isolated with full port ball valves.
7. Demonstrate performance of the newly installed boiler.
8. All installation work shall be provided with a minimum 12-month warranty against defects of materials or labor.
9. Two complete copies of the manufacturer’s installation and data, and Operations and Maintenance manuals for the installed equipment shall be provided to the COR within 10 days of completion of installation.
10. All materials shall meet buy American standards.
11. Label all major components with identification tags or placards.
12. Pressure gages and temperature sensors shall be placed at the boiler supply and return.
13. All major components including pumps, water heaters, strainers, and air vents/particle separators shall be isolated with full port ball valves. Provide air vents at all system high points.
14. Provide commissioning services on the mechanical system to ensure proper and efficient functionality.

Government Furnished Materials

The National Park Service will supply new Glycol for the boiler and mechanical system. Contractor to furnish all other materials and labor.

Hazardous Materials

No hazardous materials have been identified as part of this project.

Re-performance of Service

When service performed does not conform to contract requirements, or when service was not performed in a specific area, the contractor shall perform or re-perform the service in conformity with contract requirements at no additional cost to the government.

Non-Payment for Additional Work

Any additional contractor performed services not specified in contract, either at its own volition or at the request of an individual other than an appointed Contracting Officer, except as may be explicitly authorized, shall be performed at the financial risk of the contractor. Only an appointed Contracting Officer is authorized to bind the Government to a change in specifications, contract terms, or conditions.

Period of Performance

The anticipated period of performance for the resultant contract is from February 1, 2021 through May 1, 2021.

POINT OF CONTACT:

Contracting Officer's Representative (COR) for Technical Support:
To be named at the time of the contract.

Contracting Office for Contractual Support:
Francisco Velasco – Contract Specialist
National Park Service, Alaska Regional Office
240 W. 5th Ave.
Anchorage, AK 99501
francisco_velasco@nps.gov
Tel: (907) 644-3313

SUBMIT INVOICE(S) TO:

Submit the original invoice to the Invoice Processing Platform (IPP), **https://www.ipp.gov/** and a copy, via email, to the COR.

Monthly Progress payments shall be made on this Contract on estimates of work accomplished which meets the standards of quality established under the contract.

Partial Payment will not be authorized for this contract.

Contracting Officer's Authority:

The Contracting Officer is the only person with the authority to act as agent of the Government under this contract. Only the Contracting Officer has authority to:
(1) direct or negotiate any changes in the Performance of Work or specifications;
(2) modify or extend the period of performance;
(3) change the delivery schedule; or
(4) otherwise change any terms and conditions of this contract.

The Contracting Officer is the only person authorized to make or approve any changes in any of the requirements of this contract and not withstanding any

provisions contained elsewhere in this contract, the said authority remains solely in the Contracting Officer. In the event the Contractor makes any changes at the direction of any person other than the Contracting Officer, the change will be considered to have been made without authority and no adjustment will be made in the contract price to cover any increase in costs incurred as a result thereof.

ATTACHMENTS:

1. Attachment 1_General Specs
2. Attachment 2_Diagram
3. Attachment 3_Diagram
4. Attachment 4_Diagram
5. Attachment 5_Site Photos
6. Attachment 6_Specs_Common Work Results for HVAC