

**BOILER REPLACEMENT
U.S. ARMY CORPS OF ENGINEERS
FRANKLIN FALLS DAM
ACTIVITY CENTER BUILDING
FRANKLIN, NH
Scope of Work
July 2018**

I. General

1. Scope of work

Furnish all equipment, materials and labor to replace oil fired boiler with a high efficiency oil fired boiler and burner units, and establish a two-zone system as well as removal of existing hot water tank and installation of new tankless electric hot water system.

2. Location

The Franklin Falls Dam is located at 46 Granite Drive, Franklin, NH.

3. Site Visit

Contact the Technical Point of Contact to arrange a site visit. The Technical Point of Contact for the project is Josh Levesque 978-318-8304 or joshua.s.levesque@usace.army.mil.

4. Schedule

The period of performance shall be 45 days. The project area will be open to the contractor Monday through Friday 7:00 AM to 4:30 PM and all work must be done during those hours unless additional hours are approved by the Technical Point of Contact. No work shall be done on weekends or government holidays.

a. Safety

The contractor will comply with all pertinent provisions of the latest edition of the *U.S. Army Corps of Engineers Safety and Health Requirements COE EM 385-1-1*. A copy of COE EM 385-1-1 is available for reference at the project office or the manual may be viewed at the following link:

http://www.publications.usace.army.mil/Portals/76/Publications/EngineerManuals/EM_385-1-1.pdf

- b. The Contractor shall prepare an Abbreviated Accident Prevention Plan (AAPP) specific to the activities being performed. It shall include an Activity Hazard Analysis (AHA) as described in "c" below. All work shall be conducted in accordance with the AAPP, the U.S. Army Corps of Engineers Safety and Health requirements Manual (EM 385-1-1, most recent edition), and all applicable federal, state, and local safety and health requirements.

Work shall not proceed until the APP has been reviewed by the Government Designated Authority (GDA) and deemed acceptable for use on the project.

- c. An AHA shall be submitted for each major phase of work. A major phase of work is defined as an operation involving a type of work presenting hazards not experienced in previous operations or where a new subcontractor or work crew is to perform the work. The analysis shall define all activities to be performed, identify the sequence of work, the specific hazards anticipated, and the control measures to be implemented to eliminate or reduce each hazard to an acceptable

level. Work shall not proceed on a phase of work until the AHA has been accepted by the GDA.

- d. The Contractor shall conduct a safety meeting at the project site on the first day of work, whenever a new activity or phase of work begins, or at least weekly during the progress of work. All safety meetings shall be documented. A safety meeting form may be obtained from the Technical Point of Contact, or a similar contractor-prepared form shall be used. Records of the safety briefings shall be submitted to the GDA weekly.
- e. All accidents and near misses shall be investigated by the Contractor. All work-related recordable injuries, illnesses and property damage accidents (excluding on-the-road vehicle accidents), in which the property damage exceeds \$5,000.00, shall be verbally reported to the GDA within 4 hours of the incident. Serious accidents as described in EM 385-1-1 Section 01.D shall be immediately reported to the GDA. ENG Form 3394 shall be completed and submitted to the GDA within five working days of the incident. A copy of ENG Form 3394 may be obtained from the Technical Point of Contact or the form may be viewed at the following link:
<http://www.poa.usace.army.mil/Portals/34/docs/safety/ENGForm3394AccidentInvestigationForm.pdf>
- f. The Contractor shall complete a “Contractor Monthly Summary Record of Injuries/Illness and Work Hour Exposure” (for prime and its subcontractors) and forward the completed form to the GDA no later than close of business on the 5th calendar day of the following month. A template may be obtained from the Technical Point of Contact.
- g. The contractor shall also comply with all OSHA work safety standards. The project staff can and will order the cessation of work at any time should the safety of employees and visitors become jeopardized.

5. Preconstruction Conference

Prior to the start of any work, the Technical Point of Contact will schedule and conduct a “Preconstruction Conference”. The Contractor’s Project Manager and Quality Control Personnel will attend this meeting. This conference will be held at the time and location agreeable to the government and contractor. No work may be performed under this contract prior to this conference. The purpose of the conference is to enable the Technical Point of Contact to outline the procedures that will be followed by the Government in its administration of the contract, and to discuss the performance that will be expected from the Contractor. This conference will allow the Contractor an opportunity to ask questions about the Government’s administration and inspection of contract work or obtain other pertinent information that might be required. At the Preconstruction conference the contractor shall provide to the name of the project superintendent with a telephone number for project coordination.

The following is a general list of items for discussion during this Preconstruction Conference:

- i. Authority of the Technical Point of Contact and Quality Assurance Inspectors
- ii. Contractor’s Safety Program (including sub-contractors)
- iii. Activity Hazard Analysis (Submitted & accepted prior to start of work on site)

- iv. Weekly Safety Meetings (Documented on NED Form 251)
- v. Accident Reporting (ENG Form 3394)
- vi. Safety Data Sheet (SDS) requirements
- vii. Correspondence, Communication and Administrative Procedures
- viii. Invoice and payment

6. Permits

The Contractor shall, without additional expense to the Government, be responsible for obtaining any necessary licenses, permits, and letters of certification. The Contractor shall comply with any applicable Federal, State, County, and Municipal laws, codes, and regulations in connection with the performance of the work specified under this contract.

7. Security

The contractor will comply with all established security policies at Hopkinton Lake and Merrimack River Basin Office. Due to periods of heightened security that may affect the access to the areas covered under this contract, areas may be subject to periodic closures, which in turn may reduce or inhibit the Contractor's ability to access certain areas. During periods of heightened security, the Government reserves the right, at any time, to close any property or portion of property and reschedule and/or cancel any subsequent service in an area. The Contractor shall be given at least 24 hour notice of any such closure.

8. Contractor Conduct

Alcohol and firearms are prohibited on project grounds. Contractor must comply with CFR 36 Rules and Regulations.

9. Payment

Payment shall be made on a per job basis. After final inspection and acceptance by the Government, the Contractor must submit an invoice to the Technical Point of Contact. The invoice shall include the invoice date, contract number, dates of service, description of work, quantities, process, and total amount due per line item. For jobs greater than 30 days the contractor may request progress payment.

All invoices may be mailed to:

Franklin Falls Project Office
46 Granite Drive
Franklin, NH 03235

Or Emailed to Joshua.s.levesque@usace.army.mil

II. Technical Requirements:

Part 1 General:

Existing Conditions:

Franklin Falls Activity Center Building:

The existing oil fired boiler is located in the Activity Center basement, which can be accessed internally through a door and stairwell (the stairwell is 32" wide). The boiler is an Ultimate U, PF Series, model PFO-5T (See Informational Photos) with an IBR Rating of 99,000 BTUs.

The Activity Center Building has one main floor with three (3) primary rooms heated by cast-iron radiators, and two (2) garage areas each with two (2) bays heated by modine-style ceiling mounted heating elements (See Informational Photos);

1. Main Interpretive Room (with Thermostatic Programmable Control)
2. Storage Area
3. Restroom
4. Garage 1 (Two-Bays)
5. Garage 2 (Two-Bays)
6. Partial Basement (unconditioned)

Requests for Information:

Requests concerning the work of this project should be directed to the Technical Point of Contact Josh Levesque 978-318-8304 or joshua.s.levesque@usace.army.mil.

Submittals:

Although the Government technically reviews submissions required by this scope of work, it is emphasized that the Contractor's work must be prosecuted using proper internal controls and review procedures. The documents identified below must be prepared in accordance with the applicable standards, submitted to the Technical Point of Contact for review and accepted by the government prior to the commencement of any field activities.

- Abbreviated Accident Prevention Plan (APP) & Activity Hazard Analysis (AHA) (Prior to start of field work)
- New Hampshire Plumbing License (prior to start work)
- New Hampshire Oil Heating Technician Certificate (Prior to start of work)
- Specification sheets (Prior to ordering equipment)
 - Boiler
 - Expansion Tank
 - Burner
 - Filter
 - Heat-zone Piping
- Energy Star Label
- Manufacturer Warranty
- Warranty of system

Clean Up:

The Contractor shall practice good housekeeping to maintain a safe job site. The contractor shall keep the work area, including any storage areas, free from the accumulation of waste materials. Upon completing work in an area the contractor shall remove any tools, equipment, and

materials that are not the property of the government. Upon completion of work, the Contractor shall clean up the job site to the satisfaction of the Government.

Government Resources:

The contractor is responsible for providing all materials to complete the project. Unless specified in the contract, the Government will not provide any equipment, telephone services or other resources.

Omissions:

This contract may not cover all specified activities, steps, and procedures required to supply the contract product. In case of omission, the normal industry, state, or federal standards, practices, specifications, and/or guides shall prevail. In no instance shall an omission be reason to produce less than an acceptable product.

Quality Assurance:

The contractor is responsible for the quality control of the contract work. The government has the right to inspect and test all items called for by the contract at all times and at all places during the term of the contract.

Receiving and Storing Materials:

The contractor is responsible for protecting any stored material until it is placed in service. The contractor is responsible for receiving and unloading of delivered goods. Government employees will not receive material or supplies for the contractor and will not be responsible for damage to contractor equipment or material.

Part 2 Products:

- 1) Oil fired boiler shall meet the following minimum requirements:
 - a) Ninety nine (99) net IBR output Heating Capacity (MBH) oil fired boiler or greater.
 - b) The boiler shall have an eighty seven percent (87%) AFUE efficiency rating or better.
 - c) Cast iron boiler construction.
 - d) Three pass flue system.
 - e) Minimum of three inches of insulation around boiler.
 - f) Energy Star Compliant (The contractor is encouraged to visit <http://www.energystar.gov> for complete product specifications and updated lists of qualifying products.)

Note: The Biasi Boiler, Model B-5 meets the above requirements.

- 2) Tankless electric water heater, shall meet the following minimum requirements:
 - a) 4.0 GPM minimum.
 - b) 240 Volt
 - c) 5-year warranty
 - d) Wall mount unit
 - e) Must be 99% efficient or better.

Note: AquaPower DHE Pro 29 240-volt 28.8 Kilo-Watt 5.62-GPM Tankless Electric Water Heater meets the above requirements.

- 3) Fuel Supply Filter – Filter shall match the oil fired boiler manufacturer’s recommendation.
- 4) Expansion Tank – Expansion Tank shall be sized to match oil fired boiler requirements.
- 5) Circulator Pumps – Pumps shall match the oil fired boiler manufacturer’s recommendation.
- 6) Control Relays – Relays shall match the oil fired boiler manufacturer’s recommendation.
- 7) Heat-Zone Piping – Piping shall match the oil fired boiler manufacture’s recommendation.

Part 3 Execution:

Demolition:

1. The Contractor shall de-energize the electrical system and follow the applicable lock out tag out requirements.
2. The Contractor shall disconnect the fuel line and filter from the boiler.
 - a. The fuel line shall be purged and cleaned.
 - b. All purged fuel, filter and material shall be disposed of off-site in accordance with all applicable laws and regulations.
3. The Contractor shall disconnect the existing circulator pumps and control relays.
4. The Contractor shall disconnect the existing expansion tank.
5. The Contractor shall disconnect the existing boiler.
6. The Contractor shall disconnect the exiting hot water tank.
7. The Contractor shall remove the existing circulator pumps, control relays, expansion tank, hot water tank, burner, and boiler from the site and shall dispose of or salvage all material in accordance with all applicable laws and regulations.
8. Replace the existing vent pipe in accordance with manufacturer's recommendation for the new boiler.

It should be noted: Any existing pipe and fittings disconnected as part of the demolition or installation associated with the hot-water tank removal and establishment of the two-zone heating system is to be removed as part of the new oil fired boiler installation.

Installation:

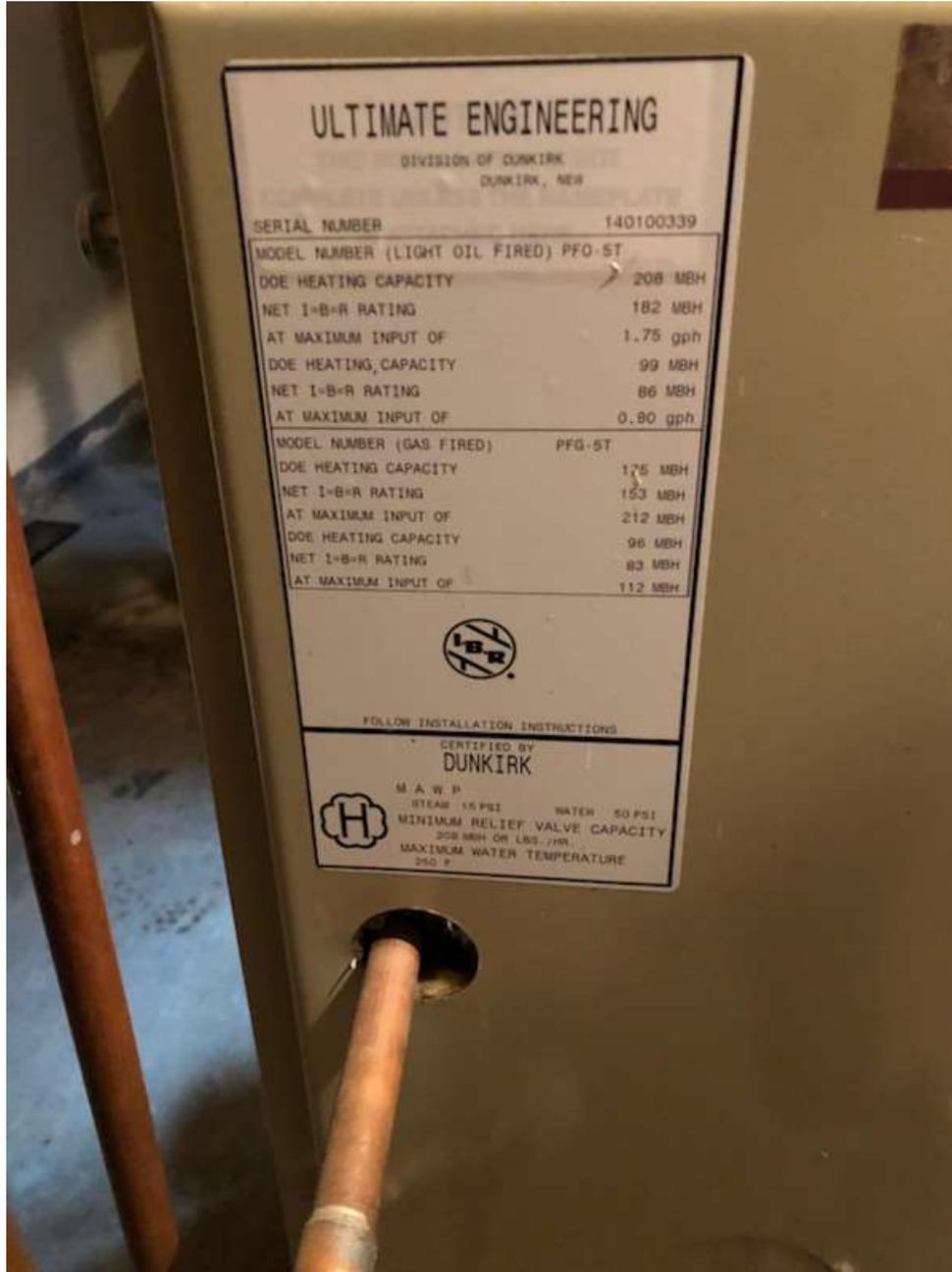
All work will be performed by a New Hampshire Licensed Plumber or a New Hampshire Certified Oil Heating Technician.

1. Contractor shall install new tankless electric water heater in accordance with the New Hampshire Building Code and the manufactures recommendations, including:
 - a. Contractor must establish a new 240 volt electrical connection and tie back into the circuit board per New Hampshire Building Code.
 - b. Unit shall be installed on the wall near existing hot water tank in accordance with manufacturer's recommendations.
 - c. Connect new electric water heater to existing water supply and heat piping.
 - d. Note: The unit shall be installed to allow proper function and service and may include additional piping and connections per piping manufacturer recommendations.
2. Contractor shall install the new boiler in accordance with the New Hampshire Building Code and the manufactures recommendations, including:
 - a. Install the circulator pumps, control relays, expansion tank, filter and replace boiler, burner, and heat-zone piping in accordance with the manufacturer recommendations.
 - b. Establish a two-zone heating system with independent thermostatic programmable controls;
 - i. Zone One – Main Office and Restroom (heated by cast iron radiators)
 - ii. Zone Two – Garage Spaces (heated by two 'modine' style heaters)
 - c. Connect new boiler and heat-zone piping in a neat and orderly fashion.
Note: The installation shall allow the new boiler to function properly and be easily serviced. The new piping shall not interfere with the swing of service doors or access.

3. Contractor shall patch any floor holes to industry best practices and patch any holes utilized by new piping.
4. Contractor shall reestablish the plumbing necessary, including shut-offs, to provide water to the fixtures.
5. At the completion of the installation the Contract will conduct a system performance test for a minimum of two heating cycles for the boiler. In addition the contractor shall demonstrate the tankless electric water heater system at each point of use. The Technical Point of Contact will confirm that the each element of the system is working properly, including the boiler, circulator pumps, relays, piping, baseboard radiators and the tankless electric water heater system.

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Informational Photos



Informational Photo Number 1: Activity Center Building Existing Oil Fired Boiler Manufacture's Plate

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Informational Photo Number 2: Activity Center Building Existing Oil Fired Boiler

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Informational Photo Number 3: Activity Center Building Existing Oil Fired Boiler heat zone piping.

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Information Photo Number 4: Activity Center Building Existing expansion and circulating pump.

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Informational Photos



Informational Photo Number 5: Activity Center Building Existing Hot Water Tank

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Informational Photos



Informational Photo Number 6 & 7: Activity Center Building Existing 'Modine' Heating Elements located in the garage spaces.

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Bid Schedule

ITEM	UNIT	QTY	UNIT PRICE	TOTAL
1. Activity Center Building Boiler Replacement	Job	1		
2. Hot Water Tank Removal & Tankless Electric Hot Water System Installation	Job	1		
			TOTAL	