DEPARTMENT OF HEALTH AND SOCIAL SERVICES

FAIRBANKS PIONEER HOME – BURNER REPLACEMENTS FAIRBANKS,

AK September 9, 2021

ADDENDUM NO. 2 (TWO)

TO: ALL PLAN HOLDERS

FROM: Chris Capps, DHSS Project Manager

RE: Pioneer Home burner replacement Project # ANC 22-05C, Addenda #2

Information in this addendum takes precedence over original information. All other provisions of the document remain unchanged.
Note to Bidders: Bidders are required to acknowledge this addendum #2 (as well as addenda #1) on the proposal form.
The following additions, corrections, and changes are hereby made to the subject invitation to bid.
This addendum consists of three items.

1. Design specifications for the burners
2. Note the Installation to include a Siemens LMV-5 with display.
3. Bid date is extended to September 14, 2:00 PM 2021

Project related questions or clarifications: Chris Capps, DHSS Project Manager at (907) 269-7816 or chris.capps@alaska.gov
Issued by: Chris Capps, DHSS PM
Issue Date: September 9, 2021

Burner specifications

Operation: Full Modulation Dual Fuel Gas Natural and Oil#1

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A. General Requirements

Furnish and install UL-FM listed Gas fired burners. Burner construction, design, components and installation shall adhere to all applicable code requirements.

Replacement burner shall be installed in cast iron type boilers. The boiler model is 1788 as manufactured by Weil McLain.

A new refractory front plate in accordance with the burner manufacturer's instructions will be provided.

Each boiler shall be equipped with a complete factory packaged combustion and fuel supply system, with integrally mounted fuel/air ratio controls for single-location accessibility.

Basis of design: Riello Model RLS 130/E or pre-approved equal

All components on burner shall have a minimum 24-month warranty from day of start-up

B. Burner Description

Provide a forced draft flame retention type automatic burner. The burners shall be designed to fire Natural Gas with a supply pressure of 2# and #1 Fuel Oil

Burner operation will be full modulation on both fuels. Burner shall operate with minimal vibration and noise at the specified rate. The burner must operate with 15% – 20% excess air and CO must be less than 15 ppm in the products of combustion.

C. Burner Construction

Burner housing shall be die-cast aluminum "monobloc" type construction. The burner mounting flange must support the burner weight on the boiler independent of any support.

Burner shall be furnished with a stainless-steel flame retention type of combustion head, capable of withstanding temperatures up to 1400°F. This combustion head shall incorporate a diffuser and sleeve that is to direct excess air either around the flame or directly through the diffuser vanes. Adjustment to the diffuser insertion shall be made external to the burner and can be made while burner is in full operation.

Burner shall be equipped with service slid bars and hinged construction that allow for full access to the burner drawer assembly without removing the burner chassis from the boiler.

Burner shall have a flame inspection window positioned at the rear center of the burner housing. Flame shall be viewed without removing any covers.

Burner shall come complete with a high efficiency, totally enclosed fan cooled motor (TEFC) 208 volt, 3 phase, 60 Hz, and a dynamically balanced reversed incline blower wheel.

The sound rating of the burner shall not exceed 85 dBa when measured at 3 feet from the burner.

A protection screen shall be installed on the air intake housing.

D. Flame Safeguard & Fuel / Air Ratio Control

Electronic Linkage less Burner Management System: Siemens LMV36, RWF55 & AZL Service Display shall provide the flame safeguard control and firing rate modulation capabilities.

E. Ignition System

The burner gas ignition system shall utilize natural or propane gas as the fuel source. The gas pilot system shall include spark ignited pilot assembly, 8000 Volt ignition transformer, pilot safety shut off valve, pilot gas pressure regulator and manual gas shutoff cock.

The burner oil system shall utilize (a direct spark oil ignition system with 5000V X 2 ignition electrode transformer) (a gas pilot oil ignition system shall include spark ignited pilot assembly, 8000 Volt ignition transformer, pilot safety shut off valve, pilot gas pressure regulator and manual gas shutoff cock.

F. Burner Mounted Controls

Burner shall be equipped with an integral burner mounted control panel consisting of necessary motor starters, overloads, lights and switches. Burner shall be supplied with an integral AUTO/MANUAL/OFF switch that incorporates a control toggle that will allow a technician to manually drive the burner servomotor from low fire to high fire or high fire to low fire and the means to stop at any position in between, in a smooth and controlled method.

The burner shall be equipped with an SPDT air pressure switch that will not allow burner to start if there is insufficient combustion air, which is checked prior to each ignition attempt. Before the burner can start the airflow, switch must be in the open position to prove the switch is not giving a false signal of sufficient combustion air pressure.

BMS Communication: MODBUS, include gateway as required with points list.

HMI Interface and 2 boiler lead-lag sequencing system

Burner mounted, high definition 4.3" color HMI capacitance multi-function touch-screen and controller. Providing burner function access boiler operators with clean visual navigation.

BMS communication via Modbus RTU or Modbus TCP with Gateway.

Visual display of burner firing rate and boiler temperature, and setpoint.

Time stamped history of the last 20 error codes received from the combustion controller Siemens LMV3

English text description for each error diagnostic code

Real-time burner operating information visually available:

- Fuel ON
- Fan ON
- Call for Heat
- Fuel servo position
- Flame signal
- Boiler Safeties (OK/Alarm)
- Air switch (OK/Alarm)
- Low Gas Pressure (OK/Alarm)
- High Limit or High Gas Pressure (Ok/Alarm)
- Water Level (OK/Alarm)
- Error Code
- Total run hours
- Total burner starts

Operating Controls and User Inputs

- Automatic/Manual/Remote Modulation
- Local Setpoint
- Hot Stand-By (extra sensor required for steam systems)
- Outdoor Air Temperature Reset Parameters

Pump / Isolation Valve Signal (Dry-Contact or BMS)
Pump / Isolation Valve: Adjustable Time Delay

Lead-Lag Control for Two Burner/Boiler System Must Have Matching Touch-Screens-ONLY APPLICABLE IN TWO BURNER SYSTEM

Ethernet cat 5/6 cable connection between the two burners
Start-Lag: Minutes: Firing rate of first burner to trigger start of the second burner
Stop-Lag: Minutes: Firing rate of first burner to stop second burner
Start-Delay: Minutes: Delayed second burner start after start-lag is triggered
Stop-Delay: Minutes: Delayed second burner stop after stop-lag is triggered
Boiler Maximum Setpoint
Boiler Minimum Setpoint
Lead Rotation Interval: Hours: Local or Remote Interval Time)

H. Main Gas Train

1. U.L. Requirements

The gas valve train shall contain the following:

Manual Shutoff cock
Main gas pressure regulator pounds to inches
Two automatically operated safety shut-off valves, one with valve seal over-travel and proof of closure switch
Manual reset low and high gas pressure switches
Manual leak test cock.
Burner manifold gas pressure gauge

FM Requirements

a. U.L. listed leak test cock.
b. One of the two automatically operated safety shut off valves must include valve seal over travel and proof of closure. Both valves shall carry an FM label.
c. Both automatically operated motorized gas valves shall be equipped with 13 second timing motorized operators.