

## Boiler / Preventive Maintenance

### Specifications

These specifications shall be for inspection, service on the boilers and associated equipment located at the following facility:

Northeast Correctional Complex- Main  
5249 Highway 67 West  
Mountain City, TN 37683

The following services shall be provided in accordance with the Boiler Manufacturer's planned maintenance program procedures:

1. Hot water boilers/Heating boilers
  - A. Vendor shall provide regular service visits and combustion tune-ups on a monthly basis (see line items for frequency) All work shall be performed by trained service personnel ( see specifications titled inspection details- Heating boilers)
  - B. Vendor shall supply inspection and Internal Cleaning visits at the time of state of Tennessee certificate expiration. Contractor shall provide all labor and materials required to open and prepare the boilers for inspection and to close and start up the boilers. The number of visits shall not exceed three (3) within the duration of contract.
  - C. Vendor shall perform the inspection of the Boiler Vaporizer, at least once a year as requested by Northeast Correctional Complex.
  - D. Vendor shall provide Manufacturer's recommended chemicals for Boiler and Loop Line as needed.
  - E. Vendor shall conduct monthly test of Boiler Loop and provide chemicals as needed.

NECX-Main site Boiler #1, 2, & 3 during the 2<sup>nd</sup> and 4<sup>th</sup> years

2. The following shall also be included in this contract.
  - A. Existing parts warranties will be honored to their individual expiration dates. All parts for repair shall meet or exceed original manufacturer's specifications.
  - B. The agency shall provide reasonable and timely access to all equipment covered in this agreement. Delays due to causes beyond the control of the vendor are subject to billing as described in the bidding information.
  - C. All services will be performed during normal daytime working hours of 8:00 am to 4:00 pm Monday- Friday excluding Holidays or a scheduled by mutual agreement.
  - D. Twenty four hour emergency service will be provided under this program subject to billing as described in the bidding information.

- E. The vendor will not be liable for losses due to interrupted services caused by events beyond their control, such as fire, flood, strikes lockouts, and electrical.
- F. The vendor shall be notified by the boiler control system (if available) in the event of failure or shut-down or non-standard operating conditions via automated telephone communication system. The determination point of this communication shall be at the vendor's local service location. On receipt of communication by the vendor, the vendor will contact the institution's maintenance department or administration for further instructions. In the event of an emergency service is required, the vendor shall have a service technician at the facility within four (4) hours of notification. The communication system shall be programmed to phone a minimum of three separate telephone numbers( beepers). This system shall incorporate all boilers with primary controls capable of communication as described.

Monthly Inspection Details-Heating boilers where applicable.

- 1. Remove and clean the gas pilot assembly and check for proper spark gap tolerances.
- 2. Inspect front door and air stub for air leakage.
- 3. Inspect rear door for leakage.
- 4. Start the burner and observe the operation of the pilot burner and main flame ignition.
- 5. Turn the Burner off and check for flame candling.
- 6. Check the operation of the modulation motor and support equipment and linkages.
- 7. Visually inspect and test the following items:
  - A. Thermal safety switch
  - B. Aqua stat or pressure controls
  - C. High and low gas pressure switches
  - D. Modulation potential meter pressure switch
  - E. Low fire start switch
  - F. Fan Control switch
- 8. Draw down water column and check:
  - A. Low water cut off
  - B. Automatic Feeder if applicable
  - C. Feed water pump control
- 9. Record the flame safeguard model, make , and serial number
- 10. Start the burner, shut off the gas supply to the pilot assembly. If no pilot deleted, record the time of period.
- 11. Start the burner, set the firing rate at the burner refractory from the read head.
- 12. Record the following control settings:
  - A. high limit control
  - B. Operating Limit Control

- C. Low Gas Pressure switch
- D. High Gas Pressure switch
- 13. Check combustion levels on both the primary and stand-by fuel and adjust the burner on both fuels for maximum burner efficiency on both fuels for maximum burner efficiency.
- 14. Record the following levels in twelve (12) firing positions:
  - A. Nox
  - B. Percent age O<sub>2</sub>
  - C. Percent age CO
  - D. Stack temperature
  - E. Gas pressure
  - F. Smoke spot
  - G. Primary air pressure
- 15. Record the type of combustion analysis equipment used.
- 16. Record the fuel rate of the primary and stand-by fuel at low and high firing rates.
- 17. Record the voltage, amperage and rotation for the following equipment:
  - A. Blower motor
  - B. Air pump
- 18. check the fuel oil controller gauges and packing for leaks

#### Equipment List

A general listing of equipment which is covered under this contract, is as follows:

1. Boiler feed pumps
2. All associated controls, including variable speed drives and boiler/burner control system
3. Hot water supply pumps
4. Hot water circulation pumps
5. Boilers- See list below

All prospective bidders should visit job site to ascertain for themselves the type and quantity of equipment located with the boiler room.

Northeast Correctional Complex-Main (NECX Main) Three hot water boilers:

Boiler # 1, 150 hp, cleaver brooks fire tube boiler.

Boiler # 2, 150 hp. Cleaver brooks fire tube boiler.

Boiler # 3, 350 hp, Cleaver Brooks fire tube boiler.

Boiler #4, Vaporizer Boiler

#### General

##### I. Definitions:

Principal period of Maintenance (PPM)- A contractual time period For which the state pays for maintenance services as contracted

For and paid on a per hour basis.

Original equipment manufacturer(OEM)- Identifies the hardware Device manufacturer.

Preventive maintenance (PM)- Identifies maintenance associated With preventing equipment failures.

Direct Digital control (DDC)- Management system for the HVAC Controls.

Engineering change (EC)- Identifies those hardware upgrades associated with enhancements to reliability, safety and/or performance.

Regular hours-Any time between 8:00 am and 4:30 pm Monday through Friday.

Premium Hours- Any hours not between 8:00 am and 4:30 pm Monday through Friday, on weekends, and on holidays.

Emergency response time- next day service or as agreed upon by agency.

II. Additional specifications:

- A. The agency shall provide reasonable and timely access to all equipment covered in the solicitation. Delays due to causes beyond the control of the vendor are subject to billing as described in the bidding information.
- B. All scheduled services will be performed during the regular working hours 7:00 am to 3:30 pm (Monday-Friday excluding holidays) or as scheduled by mutual agreement. The service technician shall be required to document his arrival and departure times on the service ticket, which will be left with the facility manager, or his designee.
- C. Twenty-four (24) hour emergency services will be provided under this program. However, the agency shall be invoiced for any service calls outside the regularly scheduled monthly pm checks.
- D. Vendor shall develop a PM program for facility personnel to follow concerning boiler operations. This program will provide daily, weekly, monthly and quarterly, and annual duties that facility personnel should be performing the program shall be developed and submitted to the facility manager within the first 90 days of the contract.

- III. Contractor's service technician shall be required to Log in and log out his times for service call visits and emergency visits and s called visits with the agency authorized representative. No invoices can be paid without this documentation.
- IV. Each bidder is put on notice that the existing controls systems shall have the "system integrity" maintained. Any control system component replaced must be compatable with the existing controls system software. Communication between the software and the component the software monitors and controls must be maintained.
- V. All prospective bidders may schedule a site visit by contacting the Facility's Manager.  
Northeast Correctional Complex Main Terry Henson, Phone (423) 727-7387 ext 1020.
- VI. An operational manual has been developed to assist the facilities' personnel in administering this PM contract. This manual includes invoicing and monitoring instructions for processing paper work and monitoring the performance of the contractor. A copy of this manual will be included with a copy of the specifications.

Any repair work which is required to be done on the boilers must be in compliance with the Tennessee Boiler and unfired pressure vessel inspection law, rules and regulations as published by the Tennessee Department of Labor. Any contractor performing repair work to the pressure vessel must possess an "R" stamp. The "R" stamp issued by the National Board of Boiler and Pressure vessel inspectors gives its holder the Credentials to repair and/or alter boilers and pressure vessels. All work must be approved by the boiler inspection insurance carrier and/or the Department of Labor, Division of boiler and Elevator inspection.