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**ADDENDUM NO. 2 TO PROJECT NO. Q1604**

**HVAC AND ELECTRICAL WORK  
PROVIDE CONNECTIONS AND ACCESSORIES  
FOR TRAILER MOUNTED EMERGENCY HOT WATER BOILER  
DOWNSTATE CORRECTIONAL FACILITY  
121 RED SCHOOLHOUSE ROAD  
FISHKILL, NY**

April 10, 2014

**NOTE:** This Addendum forms a part of the Contract Documents. Insert it in the Project Manual. Acknowledge receipt of this Addendum in the space provided on the Bid Form.

**HVAC SPECIFICATIONS**

1. Page 230923-26, Change Paragraph 3.03 B to Read:

**B. SEQUENCE OF OPERATION**

1. Boiler System
  - a. Boiler System Run Conditions: The boiler system shall be enabled continuously. The boiler shall run subject to its own internal safeties and controls.
  - b. Hot Water Supply Temperature Setpoint: The boiler shall maintain a hot water supply temperature setpoint as determined by its own internal controls (provided by others).
  - c. Boiler Safeties: The following safeties shall be monitored and Alarmed:
    - 1). Boiler Alarm.
    - 2). Low Water Level.
  - d. Boiler Hot Water Pump Lead/Stand-by Operation: The two Boiler hot water pumps shall operate in a lead/stand-by fashion and shall operate whenever the boiler is enabled
    - 1). The lead pump shall run first.
    - 2). On failure of the lead pump, the stand-by pump shall run and the lead pump shall turn off.
    - 3). The designated lead pump shall rotate upon one of the following conditions (user selectable & adj): manually, runtime, daily, weekly, or monthly.
    - 4). Alarms shall be provided as follows for each pump:
      - a). Failure: Commanded on, but the status is off.
      - b). Running in Hand: Commanded off, but the status is on.

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- c). Runtime Exceeded: Status runtime exceeds a user definable limit.
    - d). VFD Fault.
2. Hot Water Temperature
  - a. DDC system shall monitor the supply and return water temperatures of the distribution loop.
  - b. Alarms:
    - 1). High Hot Water Supply Temp: If greater than 300°F (adj.)
    - 2). Low Hot Water Supply Temp: If less than 100°F (adj.)
3. Fuel Oil System FS-1
  - a. DDC system shall monitor the fuel oil system controller and alarm based on the following items.
  - b. Alarms:
    - 1). Fuel oil pump Failure.
    - 2). Fuel tank low Level.
    - 3). Fuel tank High Level.
    - 4). Alarm
4. Hot Water Distribution Pumps
  - a. Pumps Run Conditions: The pumps shall be run continuously to maintain differential pressure setpoint.
  - b. Hot Water Differential Pressure Control: The controller shall measure hot water differential pressure and modulate the hot water pump VFDs in sequence to maintain its hot water differential pressure setpoint.
  - c. The following setpoints are recommended values. All setpoints shall be field adjusted during the commissioning period to meet the requirements of actual field conditions:
    - 1). The controller shall modulate hot water pump speeds to maintain a hot water differential pressure of 251bf/in<sup>2</sup> (adj.). The VFDs minimum speed shall not drop below 20% (adj.).
    - 2). On dropping hot water differential pressure, the VFDs shall stage on and run to maintain setpoint as follows:
      - a). The controller shall modulate the lead VFD to maintain setpoint.
      - b). If the lead VFD speed is greater than a setpoint of 90% (adj.), the lag VFD shall stage on.
      - c). The lag VFD shall ramp up to match the lead VFD speed and then run in unison with the lead VFD to maintain setpoint.
    - 3). On rising hot water differential pressure, the VFDs shall stage off as follows:
      - a). If the VFDs speeds drops back to 60% (adj.) below setpoint, the lag VFD shall stage off.
      - b). The lead VFD shall continue to run to maintain setpoint.
    - 4). Alarms shall be provided as follows:
      - a). High Hot Water Differential Pressure: If 25% (adj.) greater than setpoint.

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- b). Low Hot Water Differential Pressure: If 25% (adj.) less than setpoint.
  - d. Hot Water Pump Lead/Lag Operation: The two variable speed hot water pumps shall operate in a lead/lag fashion.
    - 1). The lead pump shall run first.
    - 2). On failure of the lead pump, the lag pump shall run and the lead pump shall turn off.
    - 3). On decreasing hot water differential pressure, the lag pump shall stage on and run in unison with the lead pump to maintain hot water differential pressure setpoint.
    - 4). The designated lead pump shall rotate upon one of the following conditions (user selectable & adj): manually, runtime, daily, weekly, or monthly.
    - 5). Alarms shall be provided as follows for each pump:
      - a). Failure: Commanded on, but the status is off.
      - b). Running in Hand: Commanded off, but the status is on.
      - c). Runtime Exceeded: Status runtime exceeds a user definable limit.
      - d). VFD Fault.
2. Page 232000-15, Change Paragraph 3.07 C 9 to Read:
- 9. Medium Temperature Water Supply & Return (MTWS & MTWR) 250 psig and Less: SW BS pipe with WE SW ST fittings.
3. Page 232000-15, Change Paragraph 3.07 C 11 to Read:
- 11. Liquified Petroleum, LP (G):
    - a. SW BS pipe with SE 150 lb MI fittings, or WE SW ST fittings.

## HVAC DRAWINGS

4. Drawing No. C-201:
- a. Site Plan: Extend oil tank slab towards "plan west" for total length of 44'-0"
5. Drawing No. M-200:
- a. Piping Plan: Add Drawing Note 20 symbol to roll-up door in Bay 1.
  - b. Piping Plan: Add Drawing Note 20 : "Provide 10 gauge, galvanized sheet metal skinned, 3/4" plywood sheathed, 2x4 stud wall, 36" high, full width of overhead door bay. Insulate wall with 2" rigid insulation in wall cavity. Seal wall weather tight to existing building structure. Provide 2" wide neoprene gasket on top of wall and seal overhead door to wall."
6. Drawing No. M-202:
- a. Site Plan: Extend "plan west" side of oil tank and oil tank concrete pad 6'-5" west. Tank
  - b. length to be 41'-0"
7. Drawing No. M-500:

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- a. Detail 3: Add Detail Note C: "Refer to manufacturer for additional supports and details for supports greater than 4'-0" tall, pipe guides and anchor supports."

**ELECTRICAL WORK**

**No changes this Addendum**

**END OF ADDENDUM**

Margaret F. Larkin  
Acting Executive Director