



CITY OF DULUTH
PURCHASING DIVISION
Room 100 City Hall
411 West First Street
Duluth, Minnesota 55802-1199
218/730-5340

purchasing@duluthmn.gov

Addendum #3
File # 17-0611 REBID
Temporary Steam to Hot Water Transfer Stations

This addendum serves to notify all bidders of the answers to submitted questions:

1. Expansion Tank
 - o Can the expansion tank be sized to account only for only the ST to HW skid's capacity?
 - o The specified 12,000 gallon expansion tank would approximately have a 54" diameter and 108" height
 - o We are assuming that the 12,000 gallon expansion tank is accounting for additional load outside of the ST to HW skid

12,000 gallons is the volume of the system, which includes the distribution piping. This is not the size of the expansion tank. Given the system volume, pressures, and temperatures, I would expect the tank to be around 1,000 gallons.
2. Control of Pump VFDs
 - o How should the pump's VFDs be controlled (pressure or temperature)? **Pressure**
 - o Differential pressure or temperature sensors could be located on the HWS & HWR to monitor the VFDs

The VFD shall be controlled based on differential pressure.
3. Data Collect Procedure
 - o How should the data from the meters be processed?
Metering data shall feed into a totalizer with Modbus capability as well as pulse output (with two analog outputs). Readouts for the hot water meter shall include accumulated water volume (GPM), accumulated energy (MMBtu), supply and return temperatures (°F), instantaneous heat load (kbtu/hr), instantaneous flow (GPM), and peak load and flow with timestamp. The steam metering shall include the above as applicable (flow in lb/hr) with the addition of supply pressure.
 - o Does the data need to be recorded and stored for a particular duration
The calculator shall be able to store, in an extended memory, at least:
 - Peak values of heat load and flow with timestamp
 - Mean value of flow under a number of periods of about 15 minutes
 - Error codes with time stamp
 - o Or does the data need to be retransmitted to a BAS
The meter calculators need to have Modbus capability.
4. Section 3: Scope of Work
 - o The last bullet point states that the contractor is responsible for connection to the steam and hot water systems.
 - o What should the contractor assume for lengths of connection for steam, hot water, electrical, drain, or any other services that will connect to the enclosure?

- It is assumed that all existing services will be shut down by owner for contractor to safely install the connection.

The final connections have been removed from this scope of work under Addendum #1. The connections from the steam, hot water, electrical, etc. to the ETSs will be completed by under a separate contract. There will be no work required for this contract to connect external facilities. The Contractor will provide connection points on the exterior of the ETS.

Please acknowledge receipt of this Addendum where indicated on the Bid Express posting.

Posted: December 12, 2017