

## **Material Procurement**

### **Duluth Steam Project DUL-PLANT002 Pressure Reducing Station Valve replacements Duluth, MN 55802**

#### **1. Operation Requirements:**

Provide (3) three 10" Pressure reducing valves that shall reduce plant steam of 250 – 225 Lbs to 150 lbs street distribution pressure. The capacity of each valve shall be required to modulate from 20,000 lbs per hour to 225,000 lbs per hour.

The pressure reducing valves shall have electronic actuators that fail in-place. The boiler controls will send a 4-20 mA signal to control the outgoing flow based on pressure. The boiler control panel operate either completely automatic or by placing selector in manual will permit the operator to hand control reduced pressure. The pressure reducing valves shall also have the capability to vary the nominal 150 lb pressure setting from the control station.

#### **2. Schedule**

~~Provide buy price bids by March 23, 2015 and valve selection by March 26, 2015.~~ Bids should include delivery of reducing valves to Duluth Steam no later than July 10, 2015.

#### **3. Specifications**

##### **Steam Pressure Reducing Valves:**

Cast steel body, Stellite stainless steel trim (alloy 6/316 SS), electronically actuated, 4-20 mA signal, flanged 300 lb ends, stainless steel noise attenuating trim for all valves exceeding 100 dBA, suitable for 300 PSI steam at 500°F. Main valve seat and plug shall be replaceable.

Actuators shall be 120 Vac modulating (capable of 1,200 starts/hour) and constructed to handle exterior installation. Provide internal heaters for -20°F and up to 200°F operation. Provide position sensor with 4-20 mA output to feed valve position back to control circuit. Actuator shall have hand wheel operation for loss of power or air pressure.

Valves shall be factory tested and certified with hydraulic flow report.

Provide add/alternate for 600 psig flanges and capable of 750°F steam.

Provide add/alternate for I to P controller with pneumatic actuator.