

PROPOSAL REQUEST FOR INFORMATION (RFI) FORM

SOLICITATION: Solicitation: VA26115B0435 - Y--Expand Building 700 HVAC - Mather Campus

NOTE: ALL PRE-PROPOSAL INQUIRIES SHALL BE SUBMITTED VIA EMAIL TO karen.smith3@va.gov BY AN EDITABLE USE OF THIS FORM. Please identify, in numerical sequence, each set of inquiries that you send.

Question(s) is/are on the solicitation [Section 23 09 23 - **2.11 SENSORS (AIR, WATER AND STEAM)** -]

Question(s) is/are on the drawings, specifications, technical data [specifications]

Company Name and Offeror: __Romy LaBorde, VorTek Instruments__

From (person submitting question): __Romy LaBorde__

Date of Proposal Inquiry: __August 19, 2015__

Phone Number: __303 586-5251__

Proposal Inquiry: Section 23 09 23 -- Technical Questions

RFI#1 - RFI#6

For the Building 700 OR AHU replacement project, there are no water or steam meters required.

Proposal RFI #1 – Are the insertion vortex and turbine meters outlined in section 23 09 23 for water existing meters or will new meters be required?

Proposal RFI #2 – Is these are water flow meter schedule available?

Proposal RFI #3 - Are the vortex shedding meters outlined in section 23 09 23 for steam existing meters or will new meters be required?

Proposal RFI #4: Is there a steam meter schedule available?

Proposal RFI #5: What are the pipe diameters for the steam lines requiring new meters?

Proposal RFI #6: What are the specific pipe diameters for the water lines needing insertion vortex meters... spec is very broad?

Proposal RFI #6: What are the specific pipe diameters for the water lines needing insertion turbine meters... spec is very broad?

23 09 23 -

2.11 SENSORS (AIR, WATER AND STEAM)-

D. Water flow sensors:

1. Type: **Insertion vortex** type with retractable probe assembly and 2 inch full port gate valve.
 - a. Pipe size: 3 to 24 inches.
 - b. Retractor: ASME threaded, non-rising stem type with hand wheel.
 - c. Mounting connection: 2 inch 150 PSI flange.
 - d. Sensor assembly: Design for expected water flow and pipe size.
 - e. Seal: Teflon (PTFE).

2. Controller:

- a. Integral to unit.
- b. Locally display flow rate and total.
- c. Output flow signal to BMCS: Digital pulse type.

3. Performance:

- a. Turndown: 20:1
- b. Response time: Adjustable from 1 to 100 seconds.
- c. Power: 24 volt DC

4. Install flow meters according to manufacturer's recommendations. Where recommended by manufacturer because of mounting conditions, provide flow rectifier.

E. Water Flow Sensors: shall be **insertion turbine** type with turbine element, retractor and preamplifier/transmitter mounted on a two-inch full port isolation valve; assembly easily removed or installed as a single unit under line pressure through the isolation valve without interference with process flow; calibrated scale shall allow precise positioning of the flow element to the required insertion depth within plus or minus 1 mm (0.05 inch); wetted parts shall be constructed of stainless steel. Operating power shall be nominal 24 VDC. Local instantaneous flow indicator shall be LED type in NEMA 4 enclosure with 3-1/2 digit display, for wall or panel mounting.

1. Performance characteristics:

- a. Ambient conditions: -40°C to 60°C (-40°F to 140°F), 5 to 100% humidity.
- b. Operating conditions: 850 kPa (125 psig), 0°C to 120°C (30°F to 250°F), 0.15 to 12 m per second (0.5 to 40 feet per second) velocity.
- c. Nominal range (turn down ratio): 10 to 1.
- d. Preamplifier mounted on meter shall provide 4-20 ma divided pulse output or switch closure signal for units of volume or mass per a time base. Signal transmission distance shall be a minimum of 1,800 meters (6,000 feet).
- e. Pressure Loss: Maximum 1 percent of the line pressure in line sizes above 100 mm (4 inches).
- f. Ambient temperature effects, less than 0.005 percent calibrated

span per °C (°F) temperature change.

- g. RFI effect - flow meter shall not be affected by RFI.
- h. Power supply effect less than 0.02 percent of span for a variation of plus or minus 10 percent power supply.

F. **Steam Flow Sensor/Transmitter:**

- 1. Sensor: **Vortex shedder** incorporating wing type sensor and amplification technology for high signal-to-noise ratio, carbon steel body with 316 stainless steel working parts, 24 VDC power, NEMA 4 enclosure.
 - a. Ambient conditions, -40°C to 80°C (-40°F to 175°F).
 - b. Process conditions, 900 kPa (125 psig) saturated steam.
 - c. Turn down ratio, 20 to 1.
 - d. Output signal, 4-20 ma DC.
 - e. Processor/Transmitter, NEMA 4 enclosure with keypad program selector and six digit LCD output display of instantaneous flow rate or totalized flow, solid state switch closure signal shall be provided to the nearest DDC panel for totalization.
 - 1) Ambient conditions, -20°C to 50°C (0°F-120°F), 0 95 percent noncondensing RH.
 - 2) Power supply, 120 VAC, 60 hertz or 24 VDC.
 - 3) Internal battery, provided for 24-month retention of RAM contents when all other power sources are removed.
- f. Sensor on all steam lines shall be protected by pigtail siphons installed between the sensor and the line, and shall have an isolation valve installed between the sensor and pressure source.