

WASTE TREATMENT PLANT PROJECT REQUEST FOR INTEREST

Thermowell/Thermocouples/RTDs and Thermal Flow Meters

Requisition Number: 24590-CM-MRA-JT08-00002
Submit Interest By: 02/15/2018
Quality Level: CM
Award Type: Firm Fixed Price
Issue Request for Proposal: 02/25/2018
Award and Notice to Proceed: 05/21/2018

PROJECT DESCRIPTION AND LOCATION

The Hanford Tank Waste Treatment and Immobilization Plant (WTP) is a complex of radioactive waste treatment processing facilities designed and constructed by Bechtel National, Inc. for the Department of Energy (DOE). The facility will process the Hanford Site tank waste and convert the waste into a stable glass form.

The Project site is located in the 200 East Area of the Hanford Reservation near Richland, Washington, along the Columbia River. The site elevation varies from 662 to 684 feet above mean sea level. Ambient temperature range is -23 degrees F minimum to 113 degrees F maximum, with relative humidity of 5% minimum to 100% maximum. The project design life is 40 years.

SCOPE OF WORK

Thermowells/RTDs/Thermocouples:

- Temperature measurement used will be either RTD (standard usage) or thermocouple (for process condition above 800 ° F). Both RTD or thermocouple assemblies shall be duplex design, spring loaded, and for remote mounted transmitters, and they shall each be supplied with connection head, terminals for external connections, internal grounding screw and external grounding terminal. Sheath material shall be 316 SS with magnesium oxide as insulation fill, and sheath OD shall be ¼ inch or as specified on data sheets. Thermocouple, RTD element connection to thermowell and/or transmitter shall be ½ in NPT.
- Thermowells shall be provided for each RTD which can withstand two times the maximum design pressure. Material of construction of thermowells shall be 316 stainless steel as minimum, other materials such as AL6XN (UNS N08367) or carbon steel may be used if specified on data sheets.
- Temperature measurement and thermowells shall be designed, fabricated, and tested per ASME/ANSI PTC 19.3, ASME B31.3 and ASME B16.5 standards.

Thermal Mass Flow meter/Thermal Switches:

- Thermal flow meters shall be of an in-line type or a retractable insertion type if specified on the applicable datasheet. Isolation ball valve shall be supplied for all retractable type probes installed in non-radiation areas and specify probe insertion length based upon valve design and application requirements as identified on the data sheet.
- The flow transmitter electronics unit shall be directly attached (integral) or remotely attached to the sensor elements as indicated on the applicable data sheet. The flowmeter shall have repeatability of +/- 1% of reading at constant process conditions, a minimum inaccuracy of +/- 2%, less than 1" WG pressure drop, and at least +/- 30°F temperature compensation. The flow meter shall be supplied in 316 SST with integral flow straightener and flanged connections in accordance with ASME B16.5.
- The transmitter shall have LCD indicator that is configured to the specified range and Engineering Unit as indicated on the data sheets. The transmitter shall use FOUNDATION™ Fieldbus, and the electronic unit shall be housed in a NEMA 4X enclosure. TURCK connector for FOUNDATION™ Fieldbus signal

termination shall be TURCK P/NRSFV 49T-0.3M/14.5 or Buyer approved equivalent.

Equipment and Materials Required

QUALITY ASSURANCE (QA) REQUIREMENTS

Programmatic Quality Assurance (QA) requirements for subcontracts or purchase orders performed in the WTP Jobsite will be:

<input type="checkbox"/>	Non-Permanent or Temporary Work - Generally no QA program required
<input checked="" type="checkbox"/>	Commercial Quality - Based on DOE Order 414.1C
<input type="checkbox"/>	Nuclear Level Quality - Based on ASME NQA-1 2000

Bechtel may require, as an element of bidder pre-qualification, submission of a representative sample QA Program or Table of Contents copy. For Nuclear Level Quality subcontracts, the successful bidder's QA Program must be approved prior to award of the subcontract or purchase order.

CODES

- National Fire Protection Association (NFPA) 101, Life Safety Code
- NFPA 70, National Electrical Code
- ASME B31.3 (1996): Process Piping
- ASME B16.5: Pipe Flanges and Flanged Fittings
- ASME/ANSI PTC 19.3 TW-2010: Thermowells, Performance Test Code
- IEC 751: Industrial Platinum Resistance Thermometer Sensor
- ISA MC96.1: Temperature Measurement Thermocouples
- ANSI/ASME B16.5 (1988): Pipe Flanges and Flanged Fittings
- ANSI/NEMA 250 (2003): Enclosures for Electrical Equipment (1000 Volts Maximum)
- ASTM E230 Standard Specification and Temperature-Electromotive Force (emf) Tables for Standardized Thermocouples
- ANSI/ISA-50.02, Part 2, 3, 4, 5 and 6: Fieldbus Standard for Use in Industrial Control Systems
- NEMA ICS 6, Industrial Control and Systems: Enclosures
- OSHA 29 CFR 1910-Subpart S: Occupational Safety and Health Administration – Electrical

STANDARDS

- American Society for Testing and Materials (ASTM)
- Underwriters Laboratories, Inc (UL)
- National Electrical Manufacturers Association (NEMA) Standards

BIDDER REGISTRATION AND PRE-QUALIFICATION

The BNI Acquisition Services Subcontracts/Purchasing group is responsible for collection, evaluation, and internal publication of potential bidders' information for the purpose of pre-qualifying them to bid on any particular subcontract or purchase order.

As part of this process, BNI requires all potential offerors to register at the Supplier and Contractor Portal at: <https://www.Bechtel.com/supplier/>

If your company has registered previously, then only supplemental information should be sent to the Bechtel National, Inc. representative noted below.

Information to be provided by potential bidders must include:

- Dun and Bradstreet Number
- Company Name
- Company Address
- Contact Phone Number

- Contact Person
- Email Address
- Safety Data and Information
- Applicable Work Experience and Projects
- Size of Business (Small, Large)

WTP BACKGROUND

Information about the WTP Project can be found on <http://www.hanfordvitplant.com>

CONTACT

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