WASTE TREATMENT PLANT PROJECT REQUEST FOR INTEREST

Requisition Number:	24590-QL-MRA-PS02-00017
Submit Interest By:	26th August 2022
Quality Level:	QL
Award Type:	Firm Fixed Price

ESTIMATED SCHEDULE

Issue Request for Proposal:	9/22/22F
Award and Notice to Proceed:	4/14/23F

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

Fabrication of Q and CM stainless steel, nickel alloy and titanium piping subassemblies (pipe spools) in accordance with ASME B31.3-1996, Process Piping, other codes and standards, and documents.

Pipe spools include Q piping, Q Black Cell/Hard-to-Reach piping, and CM Black Cell/Hard-to-Reach piping

The WTP design incorporates the “black cell” concept as a key part of the facility design of the High-Level Waste (HLW) facility. This entails locating certain equipment in the shielded cells for which no maintenance or entry is planned for the 40-year design life of the plant. Black cell (BC) Piping - all piping and tubing within a black cell up to the first weld outside the black cell.

There are areas of the WTP facilities that have components that are considered to be hard-to-reach (HtR) because of location and expected difficulty to perform repairs or maintenance which has the potential to impact mission life. HtR areas are designated as such based on R5 area radiation levels after removal of transient sources and decontamination and 1) piping and components cannot be manually or remotely maintained, and/or 2) piping and components are isolated physically by permanent plant equipment which cannot be manually or remotely removed. HtR piping extends out to the first accessible weld.

There are no valves in BC areas, and there are no inaccessible valves in HtR areas.

The term “Black Cell Weld” applies to any weld in a BC pipe or pipe spool.

The term “Hard to Reach Weld” applies to any weld in an HtR pipe or pipe spool.

Isometrics issued prior to February, 2008 are reviewed by Buyer’s Engineering to determine whether a pipe spool is “BLACK CELL” or “HARD To REACH” or not. This review and spool identification information is provided to the Supplier.

Isometric drawings issued on or after 1 February 2008 identify the pipe spools that are to be installed in black cells or hard-to-reach areas. The isometric drawing identifies each black cell or hard-to-reach pipe spool with a spool tag which will include the spool ID number and the words “BLACK CELL” or “HARD TO REACH”, as appropriate. Additionally, the respective isometric will have the words “CONTAINS BLACK CELL (or HARD TO REACH, as appropriate) PIPE” in large type located just above or beside the title block.

Work Included

- Perform the following work for piping in systems listed in the purchase order in accordance with the requirements of this specification, its appendices, and reference documents.

- Furnish shop pipe spool sheets, extended spool sheets, or detailed drawings when specifically required by the purchase order.

- Material traceability (e.g., identification of the item to applicable material specification, heat, batch, lot, part, or serial number or specified inspection, test, or other records) also includes transferring material identification mark(s) prior to subdividing material for piping material. Traceability is being able to trace the piping material or weld filler material to the applicable MTR.

- When the SELLER does not procure materials from a QSC NCA-3800/4000 Material Supplier, then Commercial Grade Dedication (CGD) in accordance with ASME NQA-1 is required to be performed by the SELLER or SELLERs sub-tier supplier. In the event that CGD is required, all technical evaluations, acceptance criteria and methods of acceptance shall be approved by the BUYER prior to implementation of the SELLER.

- Material suppliers and manufacturers may be qualified based on verification that they possess a Quality System Certificate (NCA-3800) or N / NPT Certificate of Authorization per (NCA-4000) ASME Code Section III, with certain provisions (details to follow)

- Furnish materials as required by the Purchase Order (PO) including pipe, fittings, flanges, and welding materials required for fabrication.

Fabricate pipe spools as follows:

- Fabricate pipe spools including the installation of fittings, nozzles, thermowell connections, radiographic access holes and bosses, breather holes when required, and the preparation of field welding ends

- Fabricate piping spools in accordance with ASME B31.3-1996 and the Uniform Plumbing Code.

- Install valves, valve actuators, and other piping components and specialty items supplied by the Buyer when required by the PO.

- Supply and install integral structural attachments and pipe supports as shown on piping isometric drawings, orthographic drawings, and (or) detailed support drawings.

- Perform post-weld heat treatment (PWHT) as required.

- Perform all required testing and examinations.

- Perform Positive Material Identification (PMI) on materials and fabrication per the requirements of this specification. PMI is not to be performed on Buyer-furnished valves or Buyer furnished piping materials.

- Chemically clean and (or) pickle piping were indicated on the piping isometric drawing and (or) the piping material class.

- Apply coatings as required by the piping isometric or pipe class sheet.

- Perform all required cleaning, coating, lining, preservation, and shipping preparation.

- Mark pipe spools with identification numbers in accordance with the identification numbers shown on the piping isometric drawings, orthographic drawings, or other instructions furnished by the Buyer.

- Apply color coding for material lay down purposes when required by the purchase order.

- Furnish all required submittals and documentation in accordance with requirements as shown on the G-321-E, Engineering Verification Document Requirements, and G-321-V, Quality Verification Document Requirements, forms attached to the purchase order.

- Package fabricated spools and associated materials, with packing lists, for delivery to the jobsite.

QTY – 18,000 LF (Current Estimate August 2022)

SIZE RANGE - 16,450 LF Stainless (0.25IN – 60IN), 1500 LF Nickel (1IN – 14IN) and 50 LF Titanium (3IN)

SCHEDULE – First Planning Area delivery due last quarter 2023 (Planning Area scope detail to follow when needed)

EQUIPMENT AND MATERIALS REQUIRED

As required to perform scope above

QUALITY ASSURANCE (QA) REQUIREMENTS

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

	Non-Permanent or Temporary Work - Generally no QA program required
	Commercial Quality - Based on DOE Order 414.1C
X	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

49 CFR 393, Transportation, Subpart I, Protection Against Shifting and Falling Cargo, Code of Federal Regulations.

ASME, 1995, Boiler and Pressure Vessel Code, as amended, American Society of Mechanical Engineers, New York, NY.

ASME B31.3, 1996, ASME Code for Pressure Piping, "Process Piping," American Society of Mechanical Engineers, New York, NY.

ASME B31.3c-1998, Addenda paragraph 345.2.3(c), ASME Code for Pressure Piping, "Process Piping," American Society of Mechanical Engineers, New York, NY.

IAPMO, 1996, Uniform Plumbing Code 1997 Edition, International Association of Plumbing and Mechanical Officials, Ontario, CA.

STANDARDS

ASME B1.20.1, 1983, Pipe Threads, General Purpose (Inch), as amended, American Society of Mechanical Engineers, New York, NY.

ASME B16.5, 1988, Pipe Flanges and Flanged Fittings NPS 1/2 Through NPS 24 Metric/Inches Standard, as amended, American Society of Mechanical Engineers, New York, NY.

ASME B16.9, 1986, Factory-Made Wrought Buttwelding Fittings, as amended, American Society of Mechanical Engineers, New York, NY.

ASME B16.11, 1991, Forged Fittings, Socket-Welded and Threaded, as amended, American Society of Mechanical Engineers, New York, NY.

ASME B16.25, 1986, Buttwelding Ends, as amended, American Society of Mechanical Engineers, New York, NY.

ASME B16.28, 1986, Wrought Steel Buttwelding Short Radius Elbows and Returns, as amended, American Society of Mechanical Engineers, New York, NY.

ASME B16.36, 1988, Orifice Flanges, as amended, American Society of Mechanical Engineers, New York, NY.

ASME B16.47, 1990, Large Diameter Steel Flanges NPS 26 through NPS 60, as amended, American Society of Mechanical Engineers, New York, NY.

ASME B16.48, 2015, Steel Line Blanks, as amended, American Society of Mechanical Engineers, New York, NY.

ASME B36.10M, 1985, Welded and Seamless Wrought Steel Pipe, as amended, American Society of Mechanical Engineers, New York, NY.

ASME B36.19M, 1985, Stainless Steel Pipe, as amended, American Society of Mechanical Engineers, New York, NY.

ASNT SNT-TC-1A, 2006, Recommended Practice No. SNT-TC-1A Personnel Qualification and Certification in Nondestructive Testing, The American Society for Nondestructive Testing, Columbus, OH.

ASTM A182-93b, Standard Specification for Forged or Rolled Alloy and Stainless Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Services, as amended, ASTM International, West Conshohocken, PA.

ASTM A240-93b, Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications, as amended, ASTM International, West Conshohocken, PA.

ASTM A269-92, Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service, as amended, ASTM International, West Conshohocken, PA.

ASTM A276-92, Standard Specification for Stainless Steel Bars and Shapes, as amended, ASTM International, West Conshohocken, PA.

ASTM A312-93, Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes, as amended, ASTM International, West Conshohocken, PA.

ASTM A351-91b, Standard Specification for Castings, Austenitic, Austenitic-Ferritic (Duplex), for Pressure-Containing Parts, as amended, ASTM International, West Conshohocken, PA.

ASTM A352-89, Standard Specification for Steel Castings, Ferritic and Martensitic, for Pressure-Containing Parts, Suitable for Low-Temperature Service, as amended, ASTM International, West Conshohocken, PA.

ASTM A403-93, Standard Specification for Wrought Austenitic Stainless Steel Piping Fittings, as amended, ASTM International, West Conshohocken, PA.

ASTM B337-83(R1987), Standard Specification for Seamless and Welded Titanium and Titanium Alloy Pipe, as amended, ASTM International, West Conshohocken, PA.

ASTM B363-83(R1987), Standard Specification for Seamless and Welded Unalloyed Titanium and Titanium Alloy Welding Fittings, as amended, ASTM International, West Conshohocken, PA.

ASTM B366-91, Standard Specification for Factory-Made Wrought Nickel and Nickel Alloy Fittings, as amended, ASTM International, West Conshohocken, PA.

ASTM B381-93, Standard Specification for Titanium and Titanium Alloy Forgings, as amended, ASTM International, West Conshohocken, PA.

ASTM B444-90, Standard Specification for Nickel-Chromium-Molybdenum-Columbium Alloys (UNS N06625) Pipe and Tube, as amended, ASTM International, West Conshohocken, PA.

ASTM B462-93, Standard Specification for Forged or Rolled UNS N08020, UNS N08024, UNS N08026, UNS N08367, and UNS R20033 Alloy Pipe Flanges, Forged Fittings, and Valves and Parts for Corrosive High-Temperature Service, as amended, ASTM International, West Conshohocken, PA.

ASTM B564-93, Standard Specification for Nickel Alloy Forgings, as amended, ASTM International, West Conshohocken, PA.

ASTM B575-92, Standard Specification for Low-Carbon Nickel-Chromium-Molybdenum, Low-Carbon Nickel-Chromium-Molybdenum- Copper, Low-Carbon Nickel-Chromium-Molybdenum- Tantalum, and Low-Carbon Nickel-Chromium-Molybdenum-Tungsten Alloy Plate, Sheet, and Strip, as amended, ASTM International, West Conshohocken, PA.

ASTM B584-93b, Standard Specification for Copper Alloy Sand Castings for General Applications, as amended, ASTM International, West Conshohocken, PA.

ASTM B619-92, Standard Specification for Welded Nickel and Nickel-Cobalt Alloy Pipe, as amended, ASTM International, West Conshohocken, PA.

ASTM B675-90a, Standard Specification for UNS N08366 and N08367 Welded Pipe, as amended, ASTM International, West Conshohocken, PA.

ASTM B688-93, Standard Specification for Chromium-Nickel-Molybdenum-Iron (UNS N08366 and UNS N08367) Plate, Sheet, and Strip, as amended, ASTM International, West Conshohocken, PA.

ASTM B861-Not Listed, Standard Specification for Titanium and Titanium Alloy Seamless Pipe, as amended, ASTM International, West Conshohocken, PA.

ASTM E797-15, Standard Practice for Measuring Thickness by Manual Ultrasonic Pulse-Echo Contact Method, as amended, ASTM International, West Conshohocken, PA.

EPRI 3002002982, 2014, Plant Engineering: Guideline for the Acceptance of Commercial-Grade Items in Nuclear Safety-Related Applications Revision 1 to EPRI NP-5652 and TR-102260, Electric Power Research Institute, Palo, Alto, CA.

EPRI TR-017218, 1999, Guideline for Sampling in the Commercial Grade Item Acceptance Process, Electric Power Research Institute, Palo Alto, CA.

MSS SP-25-1979, Standard Marking System for Valves, Fittings, Flanges, and Unions, as amended, Manufacturers Standardization Society of the Valve and Fittings Industry, Inc., Vienna, VA.

MSS SP-79-1992, Socket Welding Reducer Inserts, as amended, Manufacturers Standardization Society of the Valve and Fittings Industry, Inc., Vienna, VA.

MSS SP-83-1987, Class 3000 Steel Pipe Unions Socket Welding and Threaded, as amended, Manufacturers Standardization Society of the Valve and Fittings Industry, Inc., Vienna, VA.

MSS SP-95-1986, Swage(d) Nipples and Bull Plugs, as amended, Manufacturers Standardization Society of the Valve and Fittings Industry, Inc., Vienna, VA.

MSS SP-97-1987, Integrally Reinforced Forged Branch Outlet Fittings - Socket Welding, Threaded, and Buttwelding Ends, as amended, Manufacturers Standardization Society of the Valve and Fittings Industry, Inc., Vienna, VA.

PFI ES-3, 2009, Fabricating Tolerance, as amended, Pipe Fabrication Institute, New York, NY.

PFI ES-5, 2013, Cleaning of Fabricated Piping, as amended, Pipe Fabrication Institute, New York, NY.

PFI ES-7, 1962, Minimum Length and Spacing for Welded Nozzles, as amended, Pipe Fabrication Institute, New York, NY.

PFI ES-24, 2015, Pipe Bending Methods, Tolerances, Process, and Material Requirements, as amended, Pipe Fabrication Institute, New York, NY.

PFI ES-31, 1992, Standard for Protection of Ends of Fabricated Piping Assemblies, as amended, Pipe Fabrication Institute, New York, NY.

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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