

# WASTE TREATMENT PLANT PROJECT REQUEST FOR INTEREST

## Q Structural & Miscellaneous Steel and Related Commodities

Requisition Number: 24590-QL-MRA-SS00-00006  
Submit Interest By: July 30, 2023  
Quality Level: Q  
Award Type: Firm Fixed Price

### ESTIMATED SCHEDULE

Issue Request for Proposal: August 1, 2023  
Award and Notice to Proceed: Sept. 15, 2023

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

Detail, fabrication, and supply of Q structural and miscellaneous steel (with associated fasteners), Q embedded steel commodities, Q anchor bolts, and Q / CM steel decking in accordance with ANSI/AISC N690 "Specification for the Design, Fabrication, and Erection of Steel Safety Related Structures for Nuclear Facilities (1994)", other codes and standards, and other project specifications & documents. This material will be provided primarily for the project's High Level Waste facility but other facilities currently in design phase may require similar items.

### Work Included:

Perform the following work for steel commodities listed in the purchase order in accordance with the requirements of project specifications & documents. The total tonnage is estimated to be 400 tons with initial delivers to site commencing around Nov 01, 2023. The estimated tonnage is a preliminary figure subject to increase as additional scopes of work are issued. The specific work consists of furnishing all labor, material, equipment, tools, and supervision, for the performance of all operations and incidentals necessary for the production of the steel commodities, and as further described below:

- Detailing, furnishing, fabrication, inspection, and coating of "Q" structural and miscellaneous steel elements.
  - The structural steel elements include but are not limited to: Structural steel elements as classified by AISC "Code of Standard Practice for Steel Buildings and Bridges", metal decking closure plates, shear connectors attached directly on structural steel, and temporary safety cables along exposed edges.
  - The miscellaneous steel items include but are not limited to: platforms, floor plates, grating, steel stairs, handrails, toeplates, stair treads, ladders and cages, and covers for trenches and pits.
- Detailing, furnishing, fabrication, inspection, and coating of commercial material (CM) miscellaneous steel items and assemblies. These may include but are not limited to: checker plate, A307 bolts, grating, steel stairs, handrails, toeplates, shim plates, stair treads, safety gates, ladders and cages.
- Detailing, furnishing, fabrication, inspection, and coating of "Q" embedded steel.

- The standard embedded steel items include but are not limited to: plates, corner angles, channels and other shapes, pipe sleeves, rectangular and circular type penetrations, sumps, sump covers, and trench lining.
  - The non-standard embedded items include but are not limited to: large equipment anchoring assemblies, and welded plate assemblies that may be in excess of 2 tons.
- Detailing, furnishing, fabrication, and inspection of “CM” and “Q” steel deck elements. The steel deck elements include roof decks, floor decks, and related accessories.
  - Fabricate, furnish, and inspect, “Q” anchor bolts (rods) and associated items (e.g. nuts, washers, sleeves)
  - Purchase and receipt (marking) of “Q” and “CM” bulk fasteners
  - Furnishing all common and high strength bolts and washers, including temporary erection bolts, as required.
  - Furnishing shop welding materials, and performing shop welding, inspections, and examinations of welds
  - Furnishing shop coating materials and application including surface preparation, and touch-up after fabrication as indicated in the specifications or as noted on the design drawings.
  - Furnishing all shop galvanizing tools and materials. Performing surface preparation and galvanizing of steel elements where galvanizing is specifically indicated in the specifications or as noted on the design drawings.
  - Perform post-weld heat treatment (PWHT) as required.
  - Mark components with identification numbers.
  - Apply color coding for material lay down purposes when required by the purchase Order.
  - Preparing complete shop detail drawings with Bills of Materials. The shop detail drawing Bill of Material shall include the piece mark of subcomponents or item stock number as required.
  - Complete shop drawings with all field welds and requirements for Non-Destructive field examinations (NDE) indicated as applicable based on buyer designs.
  - Where required, preparing complete erection drawings with all field welds and requirements for nondestructive field examinations indicated as applicable based on buyer designs.
  - Provide for the electronic transmittal of documentation in a mutually agreed format.
  - Perform required testing and examinations.
  - Perform required cleaning and shipping preparation.
  - 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 components and associated materials, with packing lists, for delivery to the jobsite on buyer arranged conveyance.

### **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:

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

Bechtel will 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

- **ACI 318** *Building Code Requirements for Structural Concrete (1999)*
- **ACI 349** *Code Requirements for Nuclear Safety Related Concrete Structures (2001)*
- **AISC 303** *Code of Standard Practice for Steel Buildings and Bridges (2000)*
- **AISC 316 / M016** *Manual of Steel Construction (Allowable Stress Design), Ninth Edition (1989)*
- **AISC 335** *Specification for Structural Steel Buildings - Allowable Stress Design and Plastic Design (1989)*
- **AISC 348** *Specification for Structural Joints Using ASTM A325 or A490 Bolts (2000)*
- **ANSI AISC N690** *Specification for the Design, Fabrication, and Erection of Steel Safety-Related Structures for Nuclear Facilities (1994)*
- **ASME NQA-1** *Quality Assurance Requirements for Nuclear Facility Applications (2000) – Fabricator Build to Print*
- **ASME NQA-1** *Requirement 7, Section 700 for Commercial Grade Dedication (2004)*
- **AWS D1.1** *Structural Welding Code – Steel (2000)*
- **AWS D1.4** *Structural Welding Code - Reinforcing Steel (1998)*
- **AWS D1.6** *Structural Welding Code – Stainless Steel (1999)*

## STANDARDS

- **AISI 1022** American Iron & Steel Institute Specification for Chemical Composition Limits of Standard Non-Resulfurized Carbon Steel
- **ANSI/ASME B1.1** Unified Inch Screw Threads
- **ANSI/ASME B18.21.1** Lock Washers (inch series)
- **ANSI/ASME B18.22.1** Plain Washers
- **ANSI/ASME B18.23.1** Beveled Washers Type A or B
- **ANSI/ASME B18.31.2** Continuous Thread Stud, Double-End Stud, and Flange Bolting Stud (Stud Bolt) (Inch Series)
- **ASTM A1** Standard Specification for Carbon Steel Tee Rails
- **ASTM A3** Standard Specification for Steel Joint Bars, Low, Medium, and High Carbon (Non-Heat-Treated)
- **ASTM A29** Standard Specification for Steel Bars, Carbon and Alloy, Hot -Wrought, General Requirements for
- **ASTM A36** Standard Specification for Carbon Structural Steel
- **ASTM A53** Standard Specification for Pipe; Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless
- **ASME A106** Standard Specification for Seamless Carbon Steel Pipe for High-Temperature Service
- **ASTM A108** Standard Specification for Steel Bars, Carbon and Alloy, Cold Finished
- **ASTM A123** Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
- **ASTM A143** Standard Practice for Safeguarding Against Embrittlement of Hot-Dip Galvanized Structural Steel Products and Procedure for Detecting Embrittlement
- **ASTM A153** Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
- **ASTM A167** Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip

- **ASTM A193** Standard Specification for Alloy-Steel and Stainless Steel Bolting Materials for High Temperature or High Pressure Service and Other Special Purpose Applications
- **ASTM A194** Standard Specification for Carbon and Alloy Steel Nuts for Bolts for High Pressure or High Temperature Service or both
- **ASTM A234** Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel Moderate and High Temperature Service
- **ASTM A240** Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications
- **ASTM A276** Standard Specification for Stainless Steel Bars and Shapes
- **ASTM A283** Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates
- **ASTM A307** Standard Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength
- **ASTM A312** Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes
- **ASTM A325** Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
- **ASTM A354** Standard Specification for Quenched and Tempered Alloy Steel Bolts, Studs and Other Externally Threaded Fasteners
- **ASTM A384** Standard Practice for Safeguarding Against Warpage and Distortion During Hot-Dip Galvanizing for Steel Assemblies
- **ASTM A385** Standard Practice for Providing High-Quality Zinc Coatings (Hot-Dip)
- **ASTM A403** Standard Specification for Wrought Austenitic Stainless Steel Piping Fittings
- **ASTM A490** Standard Specification for Structural Bolts, Alloy Steel, Heat Treated, 150 ksi Minimum Tensile Strength
- **ASTM A496** Standard Specification for Steel Wire, Deformed, for Concrete Reinforcement
- **ASTM A500** Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
- **ASTM A521** Standard Specification for Steel, Closed-Impression Die Forgings for General Industrial Use
- **ASTM A529** Standard Specification for High-Strength Carbon-Manganese Steel of Structural Quality
- **ASTM A536** Standard Specification for Ductile Iron Castings
- **ASTM A554** Standard Specification for Welded Stainless Steel Mechanical Tubing
- **ASTM A563** Standard Specification for Carbon and Alloy Steel Nuts
- **ASTM A572** Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel, including AISC Technical Bulletin #3, March 1997, Special requirements
- **ASTM A574** Standard Specification for Alloy Steel Socket-Head Cap Screws
- **ASTM A576** Standard Specification for Steel Bars, Carbon, Hot-Wrought, Special Quality
- **ASTM A653** Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
- **ASTM A706** Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement
- **ASTM A709** Standard Specification for Structural Steel for Bridges
- **ASTM A759** Standard Specification for Carbon Steel Crane Rails
- **ASTM A992** Standard Specification for Structural Steel Shapes
- **ASTM A1008** Standard Specification for Steel, Sheet and Strip, Cold-Rolled, Carbon, Structural, High-Strength Low Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened and Bake Hardenable (Material Grade 45 is not acceptable for use.)
- **ASTM A1011** Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength (Material Grade 45 is not acceptable for use.)
- **ASTM B633** Standard Specification for Electrodeposited Coating of Zinc on Iron and Steel.
- **ASTM B695** Standard Specification for Coating of Zinc Mechanically Deposited on Iron or Steel.

- **ASTM F436** Standard Specification for Hardened Steel Washers
- **ASTM F593** Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs
- **ASTM F594** Standard Specification for Stainless Steel Nuts
- **ASTM F844** Standard Specification for Washers, Steel, Plain (Flat) Unhardened for General Use
- **ASTM F879** Standard Specification for Stainless Steel Socket Button and Flat Countersunk Head Cap Screws
- **ASTM F912** Standard Specification for Alloy Steel Socket Set Screws
- **ASTM F959** Standard Specification for Compressible-Washer-Type Direct Tension Indicators for Use with Structural Fasteners, Inch and Metric Series
- **ASTM F1554** Standard Specification for Anchor Bolts, Steel, 36, 55 and 105-ksi Yield Strength
- **ASTM F1852** Standard Specification for "Twist Off" Type Tension Control Structural Bolt/Nut/Washer Assemblies, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
- **ASTM F2280** Standard Specification for "Twist Off" Type Tension Control Structural Bolt/Nut/Washer Assemblies, Steel, Heat Treated, 150 ksi Minimum Tensile Strength
- **ASTM F2329** Standard Specification for Zinc Coating, Hot-Dip, Requirements for Application to Carbon and Alloy Steel Bolts, Screws, Washers, Nuts, and Special Threaded Fasteners.
- **ASTM F3125** Standard Specification for High Strength Structural Bolts, Steel and Alloy Steel, Heat Treated, 120 ksi (830 MPa) and 150 ksi (1040 MPa) Minimum Tensile Strength, Inch and Metric Dimensions
- **ASTM D3359** Standard Test Method for Measuring Adhesion by Tape Test
- **ASTM D3276** Standard Guide for Painting Inspectors (Metal Substrates)
- **ASTM D4228** Standard Practice for Qualification of Coating Applicators for Application of Coatings to Steel Surfaces
- **ASTM D4285** Standard Test Method for Indicating Oil or Water in Compressed Air
- **ASTM D4417** Standard Test Methods for Field Measurement of Surface Profile of Blast Cleaned Steel
- **ASTM D4537** Standard Guide for Establishing Procedures to Qualify and Certify Inspection Personnel Performing Coating Work Inspectors in Nuclear Facilities
- **ASTM D4541** Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers
- **ASTM D5139** Standard Specification for Sample Preparation for Qualification Testing of Coatings to be Used in Nuclear Power Plants
- **ASTM D5144** Standard Guide for Use of Protective Coating Standards in Nuclear Power Plants
- **ASTM D5162** Standard Practice for Discontinuity (Holiday) Testing of Non-Conductive Protective Coating on Metallic Substrates
- **ASTM D5498** Standard Guide for Developing a Training Program for Personnel Performing Coating Work Inspection for Nuclear Facilities
- **ASTM E337** Standard Test Method for Measuring Humidity with a Psychrometer (the Measurement of Wet- and Dry-Bulb Temperatures)
- **DIN 536-1-91** Crane rail: Hot rolled flat bottom crane rails (type A), dimensions, section parameters and steel grades
- **DIN 5901-95** Flat bottom rails - Dimensions, static properties and materials
- **SAE J429** Mechanical and Material Requirements for Externally Threaded Fasteners
- **SAE J995** Mechanical and Material Requirements for Steel Nuts
- **SSPC-AB1** Mineral Slag Abrasive
- **SSPC-PA2** Measurement of Dry Paint Thickness with Magnetic Gages
- **SSPC-SP1** Solvent Cleaning
- **SSPC-SP7** Brush-Off Blast Cleaning
- **SSPC-SP10** Near-White Metal Blast Cleaning
- **SSPC-SP11** Power Tool Cleaning to Bare Metal
- **SSPC-SP15** Commercial Grade Power Tool Cleaning
- **SSPC-VIS 1** Guide and Reference Photographs for Steel Surfaces Prepared by Dry Abrasive Blast Cleaning

## **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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