HANFORD TANK WASTE TREATMENT

AND

IMMOBILIZATION PLANT

BIDDER REQUEST FOR INTEREST & PRE-QUALIFICATION PACKAGE

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May be exempt from public release under the Freedom of Information Act (5 U.S.C. 552), exemption number and category: 4, Commercial/Proprietary
Department of Energy Review required before public release
Name/Org: Jose Velasquez/ P&S Date: 12/28/2023
Guidance (if applicable): N/A

Requisition No. 24590-CM-MRA-ESM0-00002

HLW Switchgear Pre-Fabricated Electrical Powerhouse

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COMPANY NAME: _____

BIDDER REQUEST FOR INTEREST & PREQUALIFICATION CRITERIA AND RESPONSE

1.0 Introduction

Bechtel National Inc., herein referred to as Contractor, intends to issue a Request for Proposal (RFP) for a **Plant Equipment** Purchase Order for the Hanford Waste Treatment and Immobilization Plant (WTP) project in Richland, WA. Companies must be pre-qualified by Contractor to be included on the bid list. To support the pre-qualification evaluation process, the prime potential bidder (1st tier subcontractor) must provide the requested information and respond to questions within this document. The Experience Statement should include relevant information for both the prime bidder and any planned lower-tier supplier or subcontractor. Additional supporting documentation such as brochures and company profiles may also be submitted.

***Please note that additional supporting documentation will be required as part of the formal RFP process.**

2.0 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.

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

3.0 Scope of Work

Award Type: ***FIRM FIXED PRICE with Economic Price Adjustment***
Estimated RFP Date: ***March 2026***

A complete manufacturer's standard **1 (one)** prefabricated metal or concrete building, shall include the following:

Entire freestanding superstructure, including exterior envelope and complete interior work with finishing, self-framing insulated metal roof, siding, wall panels, doors, louvers, accessories, painting, penetrations, and penetration seals associated with the design

Complete floor design supported on piers raised 7 ft. (minimum) above grade including floor penetrations as required for cable and water (pre-action fire suppression system and eye wash) entry from below and floor drains.

Designing, furnishing, installation, and testing of lighting (interior, exterior, and emergency egress) system, convenience receptacles, HVAC system, fire detection alarm and suppression system, lightning protection system, and grounding system.

The building shall be seismically designed in accordance with the requirements of applicable building codes to survive the maximum design earthquake of the seismic zone specified.

Equipment specified below shall be inspected and tested by the original equipment manufacturers in accordance with manufacturer's procedures.

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Perform inspections and functional tests for building services, such as HVAC system, lighting, receptacles, BMS, and alarming system, etc.

Perform insulation resistance (megger) tests on each load center, switchgear, and panelboards bus sections, phase to phase and phase to ground using manufacturer's instructions.

Perform continuity tests on any cables and bus bar joints assembled in Seller's facility.

For all power cables installed by Seller, the following shall be performed:

- 100 percent point to point continuity check/test
- Insulation resistance (megger) tests
- Verify all bolted electrical connections within shipping limitations are torqued per manufacturer's specifications.

Fire Detection and Alarm System Testing Requirements

- After installing wiring devices, Seller shall perform tests for ground faults, stray voltage, short circuit faults, loop resistance, circuit integrity per NFPA 72 and compliance with the equipment manufacturer's requirements
- Stray Voltage
- Loop Resistance

Prior to shipment, Seller shall perform an overall field evaluation (FE) by a Recognized NRTL, to perform a NEC compliance inspection for B34, Switchgear Building. The FE report shall be submitted to Buyer for review and approval. Buyer representative will perform an independent field evaluation against applicable UL standards, and NEC compliance inspection at Seller's facility

<u>Equipment and Materials Required</u>

- Two (2) 13.8kV Type 2C arc-resistant switchgear line-ups, each consisting of A and B assemblies (MVE-SWGR-34001/2-A and MVE-SWGR-34001/2B), tied together via cables between tie breakers, with main and tie breakers interlocked to prevent extended paralleling of buses
- One (1) Uninterruptible Power Supply System (rectifier, inverter, mainetannace bypass switch, bypass source transformer, battery bank, battery monitor,
- One (1) 125V DC system to provide control power to the medium voltage switchgear. System shall consist of batteries, battery chargers, and distribution panel boards
- One (1) 480V - 208/120V Distribution Transformer and Distribution Panelboard
- Two (2) 480V Distribution Panelboards
- Design and installation of raceway system for both Buyer and Seller installed power, control and instrument cables, and communication/data cables
- Hydrogen mitigation system
- Design, Procurement, Fabrication, Mounting, installation, and testing for Controller Cabinet
- Furnishing, installation, and testing of fire protection water system (FPW) in accordance with NFPA 13 requirements and this specification. Preaction Fire Suppression System. Pre-action valve and compressor to be located in under-building heated doghouse.
- Furnishing, installation, and testing of fire detection and alarm system (FDE)
- Multipurpose (Type A/B/C), dry chemical fire extinguishers in quantity and location(s) required to meet the NFPA 10, Standard for Portable Fire Extinguishers
- Instant water heater for eyewash station

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- Grounding System
- Lightning Protection System Design
- Communications Electrical System (CME)
- HVAC System (cooling units included)
- Cable tray and conduit system
- Supplemental Factory Acceptance Tests (FAT)
- Seller is directed to procure the UPS system equipment from GUTOR (Schneider Electric), equipment Switchgear, 125VDC system, panel borads and transformers from EATON corporation, battery monitoring system from Eagle Eye Power Solutions, and pager system from RACO (Remote Alarms and Controls)

Codes

Switchgear Building

- 10 CFR 851 Worker Safety and Health Program.
- 29 CFR 1910 Occupational Safety and Health Standards. Code of Federal Regulations, as amended.
- ANSI/AISC 360 Specification for Structural Steel Building
- ICEA/NEMA Power Cable Ampacities
- AISI S100 North American Specification for the Design of Cold-Formed Steel Structural Members
- ANSI/ASHRAE 15 Safety Standard for Mechanical Refrigeration Systems
- ANSI/NEMA Z535.4 American National Standard for Product Safety Signs and Labels
- ASCE 7, 2022 Minimum Design Loads and Associated Criteria for Buildings and Other Structures
- ASHRAE 52.2 Methods of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particulate Size
- ASHRAE 62 Ventilation for Acceptable Indoor Air Quality
- ASHRAE 90.1, 2022 Energy Standard for Buildings except Low-Rise Residential Buildings
- ASHRAE Handbooks Fundamentals, Applications, Refrigeration, Systems and Equipment
- ASTM A480 Standard Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip
- ASTM C665 Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing
- ASTM C719 Standard Test Method for Adhesion and Cohesion of Elastomeric Joint Sealants under Cyclic Movement (Hockman Cycle)
- ASTM C834 Standard Specification for Latex Sealants
- ASTM C920 Standard Specification for Elastomeric Joint Sealants
- ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials
- ASTM E136 Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C
- AWS D1.1/D1.1M Structural Welding Code – Steel
- AWS D1.3/D1.3M Structural Welding Code – Sheet Steel
- FM 5-11 Lightning and Surge Protection for Electrical Systems
- FM 5-18 Protection of Electrical Equipment Single Phasing and Related Faults
- FM 5-19 Switchgear and Circuit Breakers
- FM 5-31 Cables and Bus Bars

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- IBC, 2021 International Building Code
- IFC, 2021 International Fire Code
- IEEE/ANSI-C2 National Electric Safety Code (NESC)
- IEEE 142 Recommended Practice for Grounding of Industrial and Commercial Power System
- IEEE 242 Recommended Practice for Protection and Coordination of Industrial and Commercial Power Systems
- IEEE 260.1 American National Standard Letter Symbols for Units of Measurement (SI Units, Customary Inch-Pound Units, and Certain Other Units)
- IEEE 315 Graphic Symbols for Electrical and Electronics Diagrams
- IEEE 399 Recommended Practice for Industrial and Commercial Power Systems Analysis
- IEEE 493 Recommended Practice for the Design of Reliable Industrial and Commercial Power Stations
- IEEE 519 Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems
- IEEE 1100 Recommended Practice for Powering and Grounding for Sensitive Electronic Equipment
- IEEE 1187 Recommended Practice for the Installation Design and Installation of Valve-Regulated Lead-Acid Storage Batteries for Stationary Applications
- IEEE 1202 Standard for Flame Testing of Cables for Use in Cable Tray in Industrial and Commercial Occupancies
- IES Lighting Handbook Reference & Application
- IESNA/ANSI RP-7 Recommended Practice for Lighting Industrial Facilities MBMA Metal Building Systems Manual
- NEMA 250 Enclosures for Electrical Equipment (1000 Volts Maximum)
- NEMA ICS 6 Industrial Control and Systems: Enclosures
- NEMA VE 1 Metal Cable Tray Systems
- NEMA VE 2 Cable Tray Installation Guidelines
- NEMA WC 70 Power Cables Rated 2000V or Less for the Distribution of Electrical Energy
- NFPA 10, 2022 Standard for Portable Fire Extinguishers
- NFPA 13, 2022 Standard for the Installation of Sprinkler Systems
- NFPA 70, 2023 National Electrical Code (NEC)
- NFPA 70E, 2015 Standard for Electrical Safety in the Workplace
- NFPA 72, 2022 National Fire Alarm and Signaling Code
- NFPA 80, 2022 Standard for Fire Doors and Other Fire Windows
- NFPA 90A, 2021 Standard for the Installation of Air-Conditioning and Ventilation SystStandards
- NFPA 101, 2021 Life Safety Code
- NFPA 780, 2023 Standard for the Installation of Lightning Protection Systems
- UL 44 Standard for Safety Thermoset-Insulated Wires and Cables
- UL 96 Safety Lightning Protection Components
- UL 96A Safety Installation Requirements for Lightning Protection Systems
- UL 467 Standard for Safety Grounding and Bonding Equipment
- UL 508A Standard for Safety Industrial Control Panels
- UL 1277 Standard for Safety Electrical Power and Control Tray Cables with Optional Optical-Fiber Members
- UL 1581 Safety Reference Standard for Electrical Wires, Cables, and Flexible Cords

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13.8kV Switchgear

- ANSI C37.55 Metal-Clad Switchgear Assemblies Conformance Test Procedures
- IEEE C37.04 Standard Rating Structure for AC High-Voltage Circuit Breakers
- IEEE C37.06 Standard for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis – Preferred Ratings and Related Required Capabilities for Voltages over 1000 Volts
- IEEE C37.09 Standard Test Procedure for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis
- IEEE C37.20.2 Metal-Clad Switchgear
- IEEE C37.20.7 Guide for Testing Metal-Enclosed Switchgear Rated up to 38 kV for Internal Arcing Faults
- IEEE C37.90 Relays and Relay Systems Associated with Electric Power Apparatus
- IEEE C37.100.1 Standard of Common Requirements for High Voltage Power Switchgear Rated Above 1000 Volts
- IEEE C57.13 Requirements for Instrument Transformers
- NEMA LA –1 Surge Arresters
- NEMA SG-4 Alternating-Current High-Voltage Circuit Breakers
- NEMA SG-6 Power Switching Equipment
- UL 467 Grounding and Bonding Equipment
- UL 869A Safety Reference Standard for Service Equipment

Uninterruptible Power Supply (UPS) Systems

- CSA C22.2 No. 66.1/ Low Voltage Transformers – Part 1: General Requirements UL 5085-1
- CSA C22.2 No. 66.2/ Low Voltage Transformers – Part 2: General Purpose Transformers UL 5085-2
- IEC 62040-3 Uninterruptible Power Systems (UPS) – Part 3: Method of Specifying the Performance and Test Requirements
- IEEE 485 Recommended Practice for Sizing Lead-Acid Batteries for Stationary Applications
- IEEE 1184 Guide for Batteries for Uninterruptible Power Systems
- IEEE 1187 Recommended Practice for the Installation Design and Installation of Valve-Regulated Lead-Acid Storage Batteries for Stationary Applications
- IEEE 1188 IEEE Recommended Practice for Maintenance, Testing, and Replacement of Valve-Regulated Lead-Acid (VRLA) Batteries for Stationary Applications
- IEEE 1189 Guide for Selection of Valve-Regulated Lead-Acid (VRLA) Batteries for Stationary Applications
- IEEE 1491 Guide for Selection and Use of Battery Monitoring Equipment in Stationary Applications
- NEMA 250 Enclosures for Electrical Equipment (1000 Volts Maximum)
- NEMA PE1 Uninterruptible Power Supplies
- NEMA PE 5 Utility Type Battery Chargers
- UL 94 Standard for Safety Test for Flammability of Plastic Materials for Parts in Devices and Appliances
- UL 1778 Standard for Safety - Uninterruptible Power Systems

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125 Vdc System

- IEEE 485 Recommended Practice for Sizing Lead Acid Batteries for Stationary Applications
- IEEE 946 Recommended Practice for the Design of DC Auxiliary Power Systems for Generating Stations
- IEEE 1187 Recommended Practice for Installation Design and Installation of Valve – Regulated Lead-Acid (VRLA) Storage Batteries for Stationary Applications
- IEEE 1188 Recommended Practice for Maintenance, Testing and Replacement of Valve-Regulated Lead-Acid Storage Batteries for Stationary Applications
- IEEE 1189 Guide for Selection of Valve-Regulated Lead-Acid Storage Batteries for Stationary Applications
- NEMA 250 Enclosure for Electrical Equipment
- NEMA CC 1 Electric Power Connection for Substations
- NEMA PB 1 Panelboards
- NEMA PE 5 Electromagnetic Interference (EMI)
- IBC, 2021 International Building Code
- AWS D1.1 Structural Welding Code – Steel

Panelboards and Dry Type Transformers

- NEMA PB1 Panelboards
- NEMA ST 20 Dry-Type Transformers for General Applications
- NEMA 250 Enclosures for Electrical Equipment (1000 Volts Maximum)
- UL 50 UL Standard for Safety Enclosures for Electrical Equipment
- UL 67 UL Standard for Safety Panelboards
- UL 94 Standard for Safety Test for Flammability of Plastic Materials for Parts in Devices and Appliances
- UL 1561 UL Standard for Safety Dry-Type General Purpose and Power Transformers – Third Edition

Preaction Fire Suppression System

- ASTM A53 Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinccoated, Welded and Seamless.
- ASTM A182 Standard Specification for Forged or Rolled Alloy and Stainless-SteelPipe Flanges, Forged Fittings, and Valves and Parts for High Temperature Service.
- ASTM A312/A312M Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless-Steel Pipes.
- ASTM A403/A403M Standard Specification for Wrought Austenitic Stainless Steel Pipe Fittings.
- ASTM A795/A795M Standard Specification for Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless Steel Pipe for Fire Protection Use.
- ASME B16.3 Malleable Iron Threaded Fittings: Classes 150 and 300.
- ASME B16.4 Gray Iron Threaded Fittings: Classes 125 and 250.
- ASME B16.5 Pipe Flanges and Flanged Fittings: NPS 1/2 Through NPS 24 Metric/Inch Standard.
- ASME B16.42 Ductile Iron Pipe Flanges and Flanged Fittings: Classes 150 and 300.
- AWS B2.1/B2.1M Specification for Welding Procedure and Performance Qualification

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- IBC (2021) International Building Code (IFC).
- IFC (2021) International Fire Code (IFC).
- FM Approval Guide.
- FM Data Sheet 2-8 (2017), Earthquake Protection for Water-Based Protection Systems
- Washington Administrative Code (WAC) Chapter 212-80 Fire Protection Sprinkler System Contractors.

Fire Detection and Alarm System

- Factory Mutual (FM) - FM Fire Protection Approval Guide
- Factory Mutual Data Sheet 5-40, Fire Alarm Systems, Sept. 2007 edition.
- Factory Mutual Data Sheet 5-48, Automatic Fire Detection, Oct. 2021 edition.
- International Building Code (IBC), 2021 edition
- International Fire Code (IFC), 2021 edition
- NFPA 70 National Electrical Code, 2023 edition.
- NFPA 72 National Fire Alarm and Signaling Code, 2022 edition.
- NFPA 90A, Standard for the Installation of Air-Conditioning and Ventilating Systems, 2021 edition.
- NFPA 101 Life Safety Code, 2021 edition.
- NFPA 170 Standard for Fire Safety and Emergency Symbols, 2021 edition.
- Underwriters Laboratories (UL) - Fire Protection Equipment Directory

Please note that this solicitation may result in material procurements and proposals greater than $10,000 and must comply with FAR 52.225-11 Buy American Act – Construction Materials Under Trade Agreements (SEP 2010). If you cannot comply or foresee any issues with compliance, please provide a detailed explanation.

If your company is **interested** in this solicitation, please **proceed to Section 4.0** and complete the below sections as requested. The BNI Acquisition Services Purchasing group is responsible for collection, evaluation, and internal publication of potential bidders' information for the purpose of pre-qualification for all solicitations.

4.0 Response Submittal

4.1 Submission Due Date: **4/30/2025**

Submission Method: Submissions must be received no later than the due date to the Purchasing Representative, Andrea Riste, via email at adriste@bechtel.us. For questions, call (509) 430-9055.

5.0 Pre-Selection Criteria

5.1 Company Response

Prime Subcontractor Company Name: _____

Address: _____

_____

Pre-qualification Contact Name: _____

Phone Number: _____

E-mail Address: _____

DUNS No. (Dun & Bradstreet): _____

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COMPANY NAME: _____

BIDDER REQUEST FOR INTEREST & PREQUALIFICATION CRITERIA AND RESPONSE

5.2 North American Industry Classification System Code (NAICS)

The NAICS (North American Industry Classification System code for this work is **335314**. The SBA size standard for this code is 750 employees . For pre-qualification purposes, you are a small business if your company's employees do not exceed **750**.

Business Size Classification (according to U.S. Small Business Administration Criteria)	☐ Small
	☐ Small Disadvantaged Business
	☐ Woman Owned Small Business
	☐ HUBZone Business
	☐ Veteran-Owned Small Business Concern
	☐ Service-Disabled Veteran-Owned Small Business Concern.
	☐ N/A – Registered as a Large Business

5.3 Quality Assurance Requirements Program

Programmatic Quality Assurance (QA) requirements for this purchase orders will be in accordance with Supplier QA program, please mark as applicable:

	Commercial Quality - Based on DOE Order 414.1C
	Nuclear Level Quality - Based on ASME NQA-1 2022

A. Does your Company have a written Quality Assurance Program?

☐Yes ☐ No

B. Which QA standards does this program meet? _____

☐ DOE/RW/0333P ☐ ASME NQA-1 ☐ ASME Section VIII ☐ ISO-9000 ☐ Other

C. If selected "other" above, please furnish a copy of your QA Program Table of Contents and a brief summary identifying each of the requirements listed below. The level of rigor applied to the elements shall be commensurate with the risks associated with the Work.

- A description of the organizational structure, functional responsibilities, levels of authority, and interfaces for those managing, performing, and assessing the Work.
- Personnel Training and Qualifications
- Quality Improvement
- Control of Documents and Records
- Work Processes
- Design
- Procurement
- Product Identification and Traceability
- Inspection and Acceptance Testing

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- Control of the Testing Equipment
- Control of Non-Conforming Product
- Corrective and Preventative Actions
- Handling, Storage and Shipping Procedures
- Management Assessment
- Independent Assessment

D. Your company has the option to submit their full Quality Assurance Plan with this interest.

5.4 Commercial Data

Potential bidders are required to register on the Bechtel Supplier and Contractor Portal: https://www.Bechtel.com/supplier/ in order to be considered.

Date your company registered or updated its information on the Portal?

Date Updated:_____

A. Rough Order of Magnitude for Scope of Work (USD): $_____

B. Estimated Delivery Schedule:

i. Engineering/Design: _____ weeks ARO
ii. Material Procurement: _____ weeks ARO
iii. Fabrication: _____ weeks ARO
iv. Delivery: _____ weeks ARO

C. Are there any long lead items to be aware of (if yes, please specify)?

_____
_____

D. Does your company have a suggested alternate offering/product that offers an improvement, is more cost effective, or offers shorter delivery (i.e. “buy what you make”)?

☐ No, we will supply an identical or similar product.

☐ Yes, we have an alternate offering. If so, please provide.

_____
_____
_____

E. What risks do you foresee with this procurement that BNI should be aware of and possibly help mitigate?_____
_____
_____

5.5 Technical Criteria

A. Direct Relevant Experience Documentation: If the Respondent has answered “yes” to the foregoing questions, provide a reference list of example projects over the last ten years, on the included Experience Statement, that demonstrate direct relevant project experience to support

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each “yes” response. Example projects should be detailed as to both the technical scope of the project and your participation in the project.

Column completion notes for the below, Experience Statement, to be completed by the Prime contractor:

A. Customer Name, Address, Contact Name and Phone No.- So that we may contact as a reference as needed.

B. Work Description and Location- Describe work scope and location, and then indicate if prime or subcontract.

C. Original/ Final Contract Value- Original award value and final closeout contract value.

D. Commencement/ Completion Dates- Provide starting date and actual completion (or forecast if still in progress) by month/year format (e.g., Jan 2006/ Sept 2007)

Customer Name, Address, Contact Name and Phone No.	Work Description and Location	Original/Final Contract Values	Commence/ Complete Dates

6.0 Pre-Qualification Document Checklist

Companies are encouraged to use this checklist to ensure their submittal is complete.

☐ Interest & Prequalification Criteria and Response Package (this document)

☐ QA Program Table of Contents and summary *or* a copy of QA Plan

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☐ Additional supporting documentation such as brochures and company profiles.

☐ Direct Relevant Experience Documentation (included in this document or provided as attachment)

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