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-MS00-10001

HDH Hot Water Heating Skids

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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 Material 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: ***June 2026***

The scope of work includes the labor, materials, equipment, and services necessary to fabricate **two (2)** Canister Decontamination Handling System (HDH) Hot Water Heating Skids. The Skids utilize heat from an electric heater.

Components provided on each Skid shall include, but not be limited to pump, motor, pressure relief valves, Y-strainer, expansion tank, air separator, start-up strainer with replacement spool, valves, and instrumentation.

The HDH Hot Water Heating Skids shall be designed for service life of 40 years under the following specified conditions:

Quality Level / Seismic Category	CM / SC-III
Ambient Temperature (Normal)	59°F to 83°F
Ambient Pressure (Normal)	-0.40 in-w.c. to 0 in-w.c.
Ambient Pressure (Abnormal)	-6.7 in-w.c. to 1.0 in-w.c.
Environment	HARSH

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For components that have a nuclear safety function, WTP intends to consider both Suppliers with NQA-1-2022 programs and Suppliers that have other QA programs (example: ISO 9001). For cases in which Supplier is not NQA-1 compliant, WTP will provide required testing, oversight, and source verification to demonstrate compliance with NQA-1-2022.

We encourage interested Suppliers to contact WTP (per website contact info/directions) to set up meetings with WTP engineering and procurement staff to ask questions, discuss areas that could be adjusted to simplify the procurement process, resulting in a fit for purpose specification that aligns with what the supply chain produces (buy what they make) and recommendations for how best to develop a mutually beneficial collaborative partnership.

3.1 Work to be Included:

The HDH Hot Water Heating Skids elements shall be designed to satisfy the following parameters:

- The skid(s) connecting piping shall be supported with pipe supporting elements as described in ASME B31.3
- Piping shall have no traps or pockets that can accumulate liquids or solids that are not drained
- The skid(s) shall be capable of being fully drainable and flushable

A. Mechanical Design Data - Hot Water Skid

	Design Temp (°F)	Design Pressure (psig)
Decon. Canister Return Hot Water	210	150
Hot Water Supply to Decon. Canister	210	150
Process Cooling Water Supply	129	150
Discharge Flow to Process Cooling Water	174	150

System Cycling (Design min to max temp.)	18,250 cycles/40 yr
Design Life	40 yrs. (excludes maintenance replaceable items)
Voltage (Available to Skid Pump Motor)	460 Volt, 3-Phase, 60 Hz
Voltage (Available to Electric Heater)	460 Volt, 3-Phase, 60 Hz

B. Thermal/Hydraulic Data - Hot Water Skid

Return Water - Normal	(151 °F @ 79 psig) @ 8 GPM
Return Water - Max	(185 °F @ 79 psig) @ 14 GPM
Hot Water Output - Normal	(180 °F @ 113 psig) @ 8 GPM
Hot Water Output - Max	(185 °F @ 113 psig) @ 14 GPM

C. Construction Data - Hot Water Skid

Overall Skid Dimensions H/W/L	9’/5’/10’ per Skid
Mechanical Connection Location	Located on one end or side
Electrical/Instrumentation Location	Located on one end or side opposite of mechanical connections

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D. Design Data - Electric Heater

Electric Heater Duty Rating Btu/hr (KW)	400,000 (125)
Design pressure (max./min.) psig	150 / FV
Design Temperature (max./min.) °F	210 / -20
Corrosion/Erosion Allowance inch	0.040”
Hydro/Pneumatic Test Pressure psig	Per ASME Sec. VIII Div. 1
Thermal Cycling: cycles (Design min. to max. temp.)	18,250 cycles/40 yr
Fluid Name	Water
Fluid Qualities: Total gpm	14 max. / 7 min.
Temperature (In / Out) °F	73 / 185
Inlet Pressure psia	113
Density lbm/Gal.	8.323 inlet / 8.113 outlet
Viscosity lbm/(ft-hr)	2.4 inlet / 1.0 outlet
Pressure Drop (allowed) psi	3
Pipe Body	SS 316/316L
Water Inlet/Outlet Connection	SS 316/316L
Inlet (Size and Connection type)	1 1/2” CL 150 RF, ASME B16.5
Outlet (Size and Connection type)	1 1/2” CL 150 RF, ASME B16.5

E. Centrifugal Pump

No. Pumps Required	1 /Skid
LIQUID	Process Cooling Water
Pumping Temperature (Normal/Design/Min) °F	151 / 210 / 59
Norm Specific Gravity @ 68 °F	1
Capacity (US GPM)	8 - 14
Disch. Press (psig)	113.2
Suct. Pres. (psig)	79
Diff. Head (ft)	265.5
Max System Design Pres (psig)	180
Site Temp (Max/Min) °F	95 / 50
Altitude (ft)	682
Motor (Phase/HZ/Volts)	3/60/460
Suction Connection	1 1/2" ASME B16.5 compatible RF FLG
Discharge Connection	1 1/2" ASME B16.5 compatible RF FLG
Nuclear Radiation	0.5 mRad/hr

F. Expansion Vessel

Pressure (Normal/Min/Max/Design) psig	113 / 0 / 120 / 200
Temperature (Normal/Min/Max/Design) °F	180 / 68 / 185 / 404
Design Volume (Gal.)	10
Specific Gravity (Min/Max)	0.969 / 0.999
Elevation – Floor (ft)	58’
Thermal Cycling: (Design min to max temp.)	18,250 cycles/40 yr
Specific Volume of water at 86.2 °F and 240 °F (ft3/lbm)	0.016085 and 0.016927

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Flow Rate Max. (GPM)	14
Inlet conn. size/type/Mat.	1 1/2” CL 150 RF, ASME B16.5

G. Air Separator

Service/Contents	Water
Elevation – Floor (ft)	58’
Corrosion Allowance (in.)	0.040
Hydro Test Pressure (psig)	225
Thermal Cycling	18,250 cycles/ 40 yr
Required Capacity (Norm/Max/Design) (GPM @ psig)	8 @ 79 / 14 @ 79 / 14 @ 150
Temperature (Norm/Max/Design) (°F)	151 / 185 / 210
Nominal Inlet Pipe Size	1 1/2” Sch 40 NPS
Nominal Outlet Pipe Size / Mat.	1 1/2” Sch 40 NPS
Flange - Rating / End Type	1 1/2” CL 150 RF ASME B16.5

3.2 Equipment and Materials Required:

Pump Case	SS 316
Pump Impeller	SS 316
Pump Shaft	SS 316
Expansion Vessel	SS 316/316L
Air Separator	SS 316L

Fabrication of the two (2) HDH Hot Water Heating Skids shall also include the following:

- Skid connecting piping shall be supported with pipe supporting elements as described in ASME B31.3
- Provide all lifting devices and tooling for performing functional test and demonstration test

3.3 Codes and Standards:

Applicable Codes and Standards include, but are not limited to:

- NFPA 70-1999 National Electrical Code
- ASTM A182/A182M Standard Specification for Forged or Rolled Alloy and Stainless Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High Temperature Service
- ASTM A240/A240M Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet and Strip for Pressure Vessels and for General Applications
- ASME Boiler and Pressure Vessel Code Section VIII Division I, *Rules for Construction of Pressure Vessels,* American Society of Mechanical Engineers (ASME).
- ASME Boiler and Pressure Vessel Code Section II*, Materials, American Society of Mechanical Engineers.*
- ASME Boiler and Pressure Vessel Code Section V*, Nondestructive Examination, American Society of Mechanical Engineers.*

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- ASME B31.3, Process Piping
- *ASME B73.1 Specification for Horizontal End Suction Centrifugal Pumps for Chemical Process*
- *AWS D1.6 Structural Welding Code – Stainless Steel*
- *NEMA MG 1 Motors and Generators*

4.0 Response Submittal

4.1 Submission Due Date: **3/30/2026 (or as extended)**

Submission Method: Submissions must be received no later than the due date provided above 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:	
Address (cont):	
Pre-qualification Contact Name:	
Phone Number:	
E-mail Address:	
DUNS No. (Dun & Bradstreet):	

5.2 North American Industry Classification System Code (NAICS)

The NAICS (North American Industry Classification System code for this work is **333414.** The SBA size standard for this code is **500 employees**. For pre-qualification purposes, you are a small business if your company's number of employees does not exceed **500** employees.

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.

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☐ N/A – Registered as a Large Business

5.3 Quality Assurance Requirements Program

Programmatic Quality Assurance (QA) requirements for this purchase order 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

5.3.1 Does your Company have a written Quality Assurance Program?

☐ Yes ☐ No

5.3.2 Which QA standard(s) does this program meet? _____

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

5.3.3 If **"OTHER"** is selected above, please furnish a copy of its 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
- Control of the Testing Equipment
- Control of Non-Conforming Product
- Corrective and Preventative Actions
- Handling, Storage and Shipping Procedures
- Management Assessment
- Independent Assessment

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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.

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

Date Updated:_____

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

5.4.3 Estimated Delivery Schedule:

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

5.4.4 Long lead items to be aware of? (if yes, please specify

_____

_____

_____

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 describe below or provide as an attachment.

_____

_____

_____

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

_____

_____

_____

5.5 Technical Criteria

5.5.1 Direct Relevant Experience Documentation: Provide a reference list of example projects over the last ten years, on the included Experience Statement, that demonstrate direct relevant project experience. Example projects should be detailed as to both the technical scope of the project and your participation in the project.

6.0 Experience Statement

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

1) Customer Name, Address, Contact Name and Phone No.- We may contact for references as needed.

2) Work Description and Location- Describe work scope and location and indicate if prime or subcontract.

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

4) 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

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CRITERIA AND RESPONSE

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

☐ 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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