

WASTE TREATMENT PLANT PROJECT REQUEST FOR INTEREST

WTP Glass Former Reagent (GFR) Material Handling Facility

Requisition Number: TBD - GFR
Submit Interest By: 5/10/2024
Quality Level: CM
Award Type: Firm Fixed Price

ESTIMATED SCHEDULE Complete installation, startup, and commissioning by Dec 2026

Issue Request for Proposal: TBD depending upon acquisition approach.
Award and Notice to Proceed: TBD depending upon acquisition approach.

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 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

The WTP project is seeking input on the optimum acquisition approach from suppliers capable of building the GFR material handling equipment and/or facility. The facility will supply glass forming chemicals (GFCs) for two glass waste melter facilities. Handling the GFC powders requires specialized knowledge of powder behavior and related technologies. Currently, the project employs recognized technical experts in powder handling who have supported the development of the technical concepts included in this RFI. It's expected that the experts currently employed will continue as key technical designers/advisors in any acquisition approach considered.

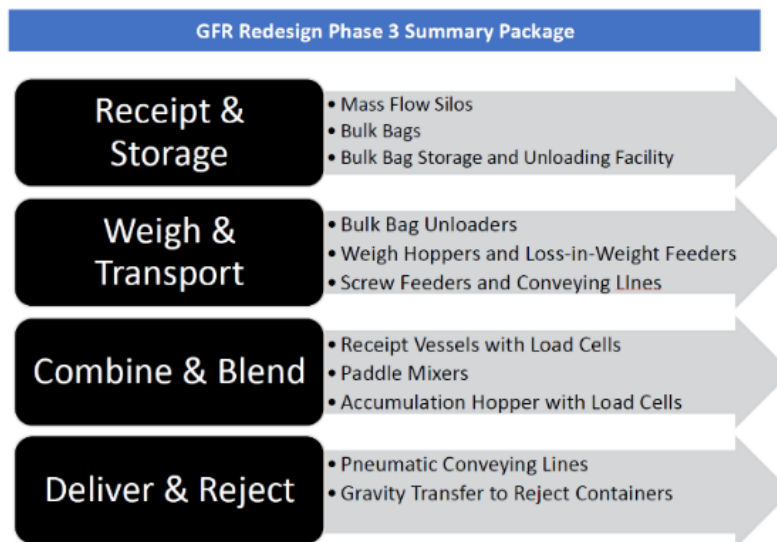
The project is expected to complete the conceptual design report of the GFR material handling facility in summer 2024. At that time, the project will decide upon the acquisition approach. Acquisition approaches could include those listed below but other approaches are welcome.

	Description
1	<ul style="list-style-type: none">• Bechtel self-perform detailed facility engineering and equipment design integration.• Procure as equipment packages from specialty suppliers geared towards a supplier's typical offerings e.g. silos, bag handlers, hoppers, screw-feeders. Equipment packages include detailed design and fabrication.• Bechtel self-performs equipment installation and all other construction.
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3	<ul style="list-style-type: none">• Procure detailed design and procurement.• Bechtel self-perform equipment installation and all construction
4	<ul style="list-style-type: none">• Subcontract design-build all scope

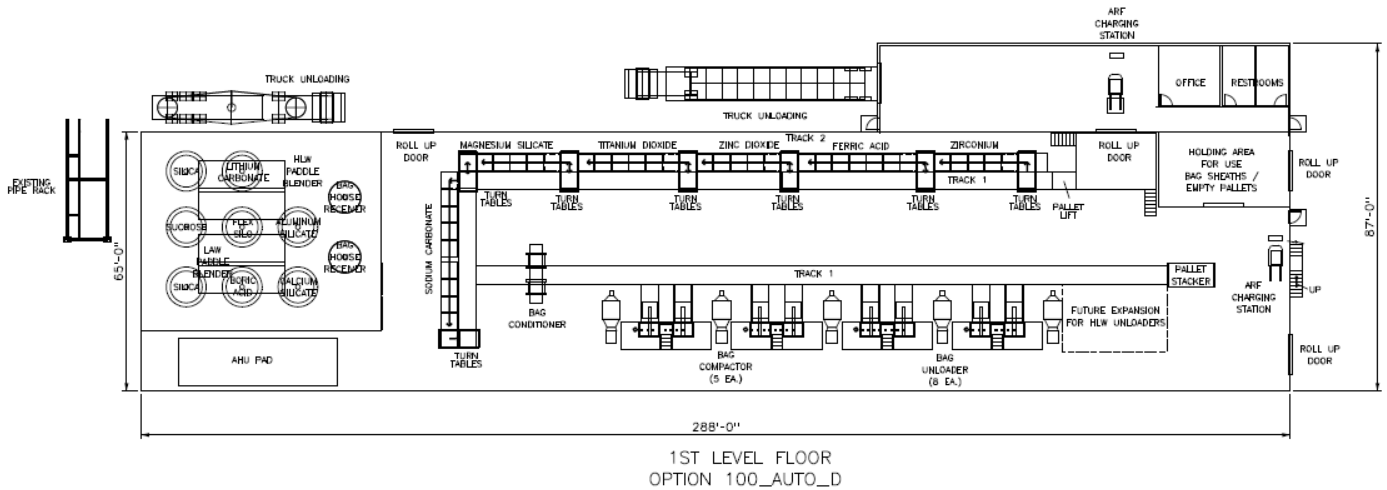
The facility will handle the following GFCs. Special GFC safety considerations, powder flow characteristics, and storage requirements are also noted in the table below.

GFC	Max DFLAW (Lbs/batch)	Max DFLAW/Day 3 batches/Day Lbs/day	Max HLW/Day (lbs/day)	Max total GFCs/Day DFLAW+HLW (Lbs/day)	Storage	Powder Flow Characteristics	Special Safety Considerations
Aluminum Silicate (Kyanite / Al ₂ SiO ₅)	2,414	7,242	1,685	8,927	Silo	Low caking, High ratholing	Respiratory Hazard: 0.025 TWA
Boric Acid (H ₃ BO ₃)	4,138	12,414	0	12,414	Silo	High Caking	
Calcium Silicate (Wollastonite / CaSiO ₃)	3,386	10,158	0	10,158	Silo	High caking, high ratholing	
Ferric Oxide (Iron Oxide / Fe ₂ O ₃)	1,232	3,696	0	3,696	Silo	low caking, high ratholing	
Lithium Carbonate (Lithia / Li ₂ CO ₃)	2,316	6,948	5,322	12,270	Bulk bag	low caking, low ratholing	
Magnesium Silicate (Olivine / Mg ₂ SiO ₄)	1,007	3,021	0	3,021	Bulk Bag	low caking, low ratholing	
Silica (Silicon Oxide / SiO ₂)	8,393	25,179	28,612	53,791	Silo	low caking, high ratholing	Respiratory Hazard: 0.05 TWA
Sodium Carbonate (Soda Ash / Na ₂ CO ₃)	0	0	7,386	7,386	Bulk Bag	High caking	
Sucrose (Sugar / C ₁₂ H ₂₂ O ₁₁)	1,776	5,328	0	5,328	Bulk bag or silo	High caking	Combustible dust
Titanium Dioxide (Rutile / TiO ₂)	329	987	0	987	Bulk bag	High ratholing, sticks to surfaces	
Zinc Oxide (Zincite / ZnO)	824	2,472	1,211	3,683	Bulk Bag	High caking, high ratholing	
Zirconium Silicate (Zinc Flour / ZrSiO ₄)	1,063	3,189	0	3,189	Bulk Bag		
Borax (Na ₂ B ₄ O ₇)	0	0	19,902	19,902	Silo	High caking	
Total	26,868	80,634	64,118	144,752			

The GFR material handling facility is required to receive and store Glass forming Chemicals (GFCs), accurately weigh and transport GFCs throughout the systems, combine and blend individual GFCs into a single batch to then be delivered to the LAW or HLW melter feed systems. The ability to reject a GFCs throughout the system is also required. A summary of the key unit operations for each function is provided below.



The preconceptual layout is provided below. The building is ~25K sq-ft with a silo pad on the west end and bag handling and 7 day storage on the east end. The GFCs in the bag handling area are pneumatically conveyed to the silo pad where they are blended with the GFCs in silos. After blending, they are pneumatically conveyed to each melter feed systems within the facility. The feed systems within the facility not in the scope of this project.



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
X	Commercial Quality - Based on DOE Order 414.1C
	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.

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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