

NATRIUM™ PROJECTED RFP OPPORTUNITIES

We are excited to release this list of potential supplier opportunities for the Natrium Reactor¹ Demonstration Project and look forward to hearing from interested parties who want to help bring the demonstration plant to fruition. Bear in mind that the details of this list are subject to change, revision, or cancellation.

There is no guarantee that these opportunities will result in a solicitation for products or services. Below is a list of anticipated vendor opportunities for the Natrium Reactor Demonstration Project, separated by Demonstration Plant Equipment and Test and Fill Facility equipment.

TERRAPOWER NATRIUM EQUIPMENT OPPORTUNITIES

EQUIPMENT	DESCRIPTION	RFP TIMEFRAME
Rotating Plug Drive	Design, fabrication, testing, and delivery of a rotating plug drive utilized by the in-vessel fuel handling system. The rotational drive assembly provides motive force to rotate and brake the Rotating Plug Assembly (RPA) safely and accurately through the required motions as prescribed by the refueling plan.	2024 Q1
Fuel Handling I&C System	Design, fabrication, testing and delivery of a control system that integrates motor controllers, field sensor data acquisition equipment, field control device signal output equipment, a local human machine interface, and a programmable controller.	2024 Q1
Nuclear Instrumentation System	Supplier will provide design support, fabrication, testing, delivery, and training of a Nuclear Instrumentation System (XIS). This system monitors neutron flux in a high temperature environment around the core as well as the associated electronics for signal amplification and conditioning.	2024 Q1
Radiation Monitoring System	Supplier will provide design support, fabrication, testing, delivery, and training of a Radiation Monitoring System (RMS). The RMS provides radiation activity indications for use in the protection of plant personnel and the surrounding environment during all foreseeable operating conditions.	2024 Q1
Ex-Vessel Storage Tank	The design, fabrication, testing, and delivery of an Ex-Vessel Storage Tank which will be a sodium filled American Society of Mechanical Engineers Boiler and Pressure Vessel Code Section III pressure vessel with internal rotating carousel for storage of new and spent core components.	2024 Q1
Sodium Processing System - Electromagnetic Pump	Fabrication and testing of a electromagnetic pump primary sodium through a processing system. This pump provides safety related primary pressure boundary features.	2024 Q1

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TERRAPOWER NATRIUM EQUIPMENT OPPORTUNITIES (cont.)

EQUIPMENT	DESCRIPTION	RFP TIMEFRAME
Pool Racks	Design, fabrication, and delivery of racks to store spent fuel within Natrium's spent fuel pool. These pool racks will be like spent fuel pool racks used at pressurized water reactors.	2024 Q1
Sodium Processing System - Sampling and Monitoring Equipment	Design, fabrication, testing and delivery of sodium processing, sampling and monitoring equipment. Within inerted cells to support the primary sodium loop and delivered on skids to support others, the equipment will monitor for and trap impurities, monitor activity levels and allow for the sampling of sodium for further analysis.	2024 Q1
Primary Heat Transfer Flow Meters	Design and manufacture of electromagnetic flow meters in conjunction with a differential pressure flow transmitter.	2024 Q1
Intermediate Heat Transfer Flow Meters	Design, fabrication, testing (TBD), and delivery of an ultrasonic flow sensor. The sensor measures velocity of sodium within 30 inch NPS piping.	2024 Q1
Pool Handling Machine	Design, fabrication, testing, and delivery of a pool handling machine to move spent fuel within Natrium's spent fuel pool. This machine will be like spent fuel handling machines used in spent fuel pools at pressurized water reactors.	2024 Q1
Training Simulator	Supplier will design, fabricate, procure, integrate, test and install a full scope training simulator for the Natrium Reactor Plant.	2024 Q2
Sodium Cover Gas - Sampling and Monitoring Equipment	Design, fabrication, testing and delivery of gas monitoring/ sampling equipment, cabinets, and skids for the argon cover gas. Includes cabinet for concentrating/measuring stable xenon and krypton isotopes, impurity monitoring, and sampling capabilities.	2024 Q2
Sodium Level Instruments	Design, fabrication, testing, and delivery of Sodium Level Instruments. These instruments will be located in drywells passing through the reactor head. The sensing devices will not contact Sodium, but will be exposed to high radiation and elevated temperatures.	2024 Q2
Sodium Cover Gas - Routing and Control Equipment	Design, fabrication, testing and delivery of gas routing and control equipment for the argon cover gas, including gas accumulator skids, overpressure protection skids, a safety isolation valve skid, and an oil bubbler.	2024 Q2
Fuel Transfer Lift	Design, fabrication, testing, and delivery of a fuel transfer lift and associated prototype. This elevator-like lift has three primary functions: charge and discharge core components into and out of the reactor, provide a portion of the primary containment boundary for the reactor vessel during refueling, and provide adequate shielding during normal operations and refueling outages.	2024 Q2

TERRAPOWER NATRIUM EQUIPMENT OPPORTUNITIES (cont.)

EQUIPMENT	DESCRIPTION	RFP TIMEFRAME
Expansion Tanks	Design, fabrication and delivery of a head tank partially filled with sodium. This tank are designed to ASME BPVC VIII – Division 1.	2024 Q3
Sodium Drain Tank	Design, fabrication and delivery of three sodium drain tanks. Two large tanks are identical, and one is a smaller supplemental tank. These tanks are designed to ASME BPVC VIII – Division 1.	2024 Q3
Physical Security System	The design, fabrication, testing, delivery, and maintenance personnel training of a physical security system (NSC). The NSC shall include supply of necessary cabinets, displays, operator/ engineer stations, and hardware/software including I/O. Equipment would include security computer, video assessment, security communication, access control, intrusion detection, & physical search.	2024 Q3
Plant Security Cyber System	Design, testing, delivery, and training of a plant cyber system (PCS). The cyber defense architecture for the System employs a multilayered approach to ensure robust protection against potential cybersecurity threats. This strategy is built on layers to provide a comprehensive defense mechanism. Equipment would include Security Information and Event Management (SIEM), firewalls, certificate authority, asset monitoring, data diodes, & Portable Media and Mobile Device (PMMD).	2024 Q3
Intermediate Heat Transport Sodium Drains Valves	Design, fabrication, testing (TBD), and delivery of sodium drain valves on small bore piping.	2024 Q3
Rotating Plug Assembly Seals	Design, fabrication, testing, inspection and delivery of Rotatable Plug Assembly (RPA) Seals. These are static and dynamic, provide the seal functions at the pressure retaining boundary in the Reactor Enclosure system to prevent egress of cover gas to out of the Reactor Vessel. These will be a part of the ASME Section III, Division 5 pressure boundary.	2024 Q3
Fixed In-Vessel Shielding	Fabrication, fill, testing and delivery of Fixed In-Vessel Shielding (FIVS) containers filled with powdered neutron shielding material. The FIVS is permanently installed shielding within the Reactor Vessel that must last the lifetime of the plant. This will be a ASME III Div 5 fabrication.	2024 Q3
Bulk Sodium	Sourcing and delivery to site of elemental sodium for use in the Natrium Reactor and the Test and Fill Facility.	2024 Q3
Reactor Head Equipment Removal Cask	Design support, Fab and Test for equipment that will be a set of shielded casks and supporting equipment used to remove, store, and install major reactor head equipment. This includes shielded casks for long-term storage, as well as floor valves, beams, and adapters to support the casks and mate them to the reactor vessel. Design codes applicable to all or parts of this work would be ASME BPVC-III-I, ASME B31.3, ANSI N14.6, IEEE 1290 and AWS D1.6.	2024 Q4

BECHTEL POWER CORPORATION NATRIUM DEMONSTRATION PLANT OPPORTUNITIES

EQUIPMENT	RFP TIMEFRAME
Valves - Desuperheater, Steam Attenuate Valves (Steam conditioning, desuperheaters, spray water)	2024 Q1
Geotechnical Investigation/ Engineering - Borings (Placeholder)	2024 Q1
Circulating Water Pumps (Main)	2024 Q1
Molten Salt Steam Generator	2024 Q1
Settlement/Rebound Monitoring (Placeholder)	2024 Q1
Heater, Deaerating Feed Water Heater (FWH)	2024 Q1
Seismic Monitoring System	2024 Q1
Condenser (and SJAE)	2024 Q1
Heaters, Feedwater	2024 Q1
AKBS - Onsite Buildings - (RFB)	2024 Q1
Crane - Overhead Cranes	2024 Q1
Auxiliary Boiler Package	2024 Q1
Tank, Shop Fabricated, ASME Section VIII	2024 Q1
HRS - CW - Cooling Tower	2024 Q1
CFW Feedwater Pumps	2024 Q1
Condensate Polisher	2024 Q1
Steam Turbine Generator and Auxiliaries	2024 Q1
Analysis, Monitoring and Testing, Soils - Including sourcing, permitting and Mining of Fill Material	2024 Q2
Chiller, Centrifugal	2024 Q2
Compactor, Rad Waste (RWS)	2024 Q2
Precast Concrete Items (Manholes, Duct Bank, Trenwa, Catch Basins, etc.) (NST)	2024 Q2
Precast Concrete Items (Manholes, Duct Bank, Trenwa, Catch basins, etc.) (SR)	2024 Q2
Valves, Ductile Iron, Underground/Buried	2024 Q2
Fire Protection and Detection - Supply and Install	2024 Q2
Filter, HEPA	2024 Q2
Compressor, Air, Screw Type	2024 Q2

BECHTEL POWER CORPORATION NATRIUM DEMONSTRATION PLANT OPPORTUNITIES (cont.)

EQUIPMENT	RFP TIMEFRAME
Fan-Coil Units	2024 Q2
Excavation Earthwork and Dewatering	2024 Q2
NI Excavation Earthwork and Dewatering (SR)	2024 Q2
Tank, Field Fabricated Tanks, Salt Tanks	2024 Q2
Pumps, Centrifugal	2024 Q2
Water Heaters, Electric	2024 Q2
RWG Filters	2024 Q2
Treatment, Sludge Dewatering and Drying - RWS	2024 Q2
Air Handling/Filtration Units - Ventilation	2024 Q2
Plate and Frame Heat Exchanger - CCW	2024 Q2
Heaters, Superheater, Steam	2024 Q2
Venturi/Flow Tubes	2024 Q2
Electrical Heaters (Immersion, Inline) for NSS Drain Vessel/TSS Tanks	2024 Q2
Pumps, Sump, Vertical	2024 Q2
Oil/Water Separator	2024 Q2
RWL Evaporator	2024 Q2
RWL Demineralizer	2024 Q2
Pumps, Centrifugal, Horizontal, Slurry	2024 Q2
Valves - Severe Service Control Valves	2024 Q2
Standby Diesel Generator	2024 Q2
Dehumidifier	2024 Q2
Tank, HDPE (Acid/Caustic)	2024 Q2
Heat Exchanger, Air to Air	2024 Q2
Filters, Non-Pressure Vessel - RWL	2024 Q2
Demineralized Water Treatment	2024 Q2
Onsite Buildings - Supply and Install	2024 Q2

BECHTEL POWER CORPORATION NATRIUM DEMONSTRATION PLANT OPPORTUNITIES (cont.)

EQUIPMENT	RFP TIMEFRAME
Treatment, Oil/Water Separator	2024 Q2
Chemical Metering Pumps	2024 Q2
Filters, Tubular Ultrafiltration - RWL	2024 Q2
Vertical Turbine Pump (Salt Pumps, ESS, TSS, SGS)	2024 Q2
Sewage Treatment Plant (Extended Aeration Skid)	2024 Q2
Windows, Radiation Shielding	2024 Q2
Tank, Field Fabricated (ESS drain tank, SGS drain tank, Demin tank, Condensate tank, etc.)	2024 Q3
Pressure Vessel (NSS Drain Vessel)	2024 Q3
Valves - (>NPS 2) Gate, Globe, Check, and Needle, Cast (CS/SS)	2024 Q3
Compressors, Recipr., Special Purpose	2024 Q3
Condensate Pumps	2024 Q3
Pumps, Fire Water	2024 Q3
Valves - General Service, Motor Actuated	2024 Q3
Heat Tracing System - Design & Supply	2024 Q3
Reverse Osmosis System - RWL	2024 Q3
Cathodic Protection System - Design & Supply	2024 Q3
Heaters, Immersion	2024 Q3
Cooling Towers - Install	2024 Q3
Communication System - Design, Supply and Install	2024 Q3
Liner Plate	2024 Q3
Valves - General Service, Air Operated	2024 Q3
N ₂ /Argon/H ₂ /CO ₂ /Propane Storage and Supply	2024 Q3
Air Dryer	2024 Q3
Heaters, Inline/Immersion, Electric	2024 Q3
Safety Showers & Eyewash Stations	2024 Q3
Pressure Relief Valves, Stainless Steel	2024 Q3

BECHTEL POWER CORPORATION NATRIUM DEMONSTRATION PLANT OPPORTUNITIES (cont.)

EQUIPMENT	RFP TIMEFRAME
Architectural Walls, Finishes, Doors, & Windows - Supply	2024 Q3
Bulk, CS, SS, Alloy Pipe and Fittings (NST)	2024 Q3
Valves - Ball, Metal Seat, Air Actuated	2024 Q3
Louvers and Vents	2024 Q3
Cable Bus and Isophase - Installation and Test	2024 Q3
Humidifiers	2024 Q3
Sewage Lift Station	2024 Q3
Steam/Water Analysis System	2024 Q3
Switchyard, Design, Fabricate and Deliver	2024 Q3
Nuclear / Energy Island Security System (NST)	2024 Q4
Load Center Transformers	2024 Q4
Transformers, MSU, UAT, and RAT	2024 Q4
Isophase Bus	2024 Q4
Generator Circuit Breaker	2024 Q4
RWG Charcoal Absorber Beds, ASME Section VIII	2024 Q4
Physical Model Testing, Cooling Tower CW Pump Intake	2024 Q4
Variable Frequency Drive MV & LV	2024 Q4
Hydrants	2024 Q4
Pipe, Circulating Water (Concrete Pipe)	2024 Q4
Excavation of Shafts (includes Rock Blasting if required)	2024 Q4
DC/UPS Equipment (NST)	2024 Q4
DC/UPS Equipment (NSRST)	2024 Q4
Basket/Concial Strainers (NST)	2024 Q4
Structural Steel, Misc. Steel, Detailing, Supply and Fabrication (SR/Non-ASME)	2024 Q4

BECHTEL POWER CORPORATION TEST AND FILL FACILITY OPPORTUNITIES

EQUIPMENT	RFP TIMEFRAME
General Services (incl.:Waste Management, Field Office Trailers, Janitorial, Temporary Power and/or Fueling, Sanitation, Provision of Potable Water, Snow Removal)	2024 Q1
PSP Variable-Frequency Drive (VFD)	2024 Q1
Sodium Cooler	2024 Q1
Standby Diesel Power Generator Package (including fuel storage)	2024 Q1
Sodium-Air Heat Exchanger	2024 Q1
Foundations/Concrete (Civil Works)	2024 Q1
Shop Fabricated Atmospheric Tanks	2024 Q1
Harsh Environment Winch	2024 Q1
In-Sodium Core Assembly Support Structure	2024 Q1
ASME Section VIII Code Calculation for Test Vessels	2024 Q1
Security Services	2024 Q1
AC Switchboards	2024 Q1
25kV outdoor switchgear (MV)	2024 Q1
Electromagnetic Pumps	2024 Q1
Instrument Air Skid	2024 Q1
Field Fabricated Tank	2024 Q1
Heat Exchangers, Sodium-Sodium (Shell and Tube) (SPS)	2024 Q1
Load Center Transformers	2024 Q2
Water Treatment Skid	2024 Q2
Glove Bags	2024 Q2
Cover Gas Treatment Equipment Skids	2024 Q2
Basket, Tee, Conical Strainers	2024 Q2
Severe Service Control Valves	2024 Q2
Flowmeters, Magnetic	2024 Q2
Flowmeters, Sonic/Ultrasonic	2024 Q2

BECHTEL POWER CORPORATION TEST AND FILL FACILITY OPPORTUNITIES (cont.)

EQUIPMENT	RFP TIMEFRAME
Pressure Transmitters (Gauge/Differential) (Sodium Only)	2024 Q2
Shop Fabricated Pressure Vessels STE (PSP) (Tank in Tank)	2024 Q2
Shop Fabricated Pressure Vessels STE (Small)	2024 Q2
Shop Fabricated Pressure Vessels STE (Test)	2024 Q2
Inline Heaters	2024 Q2
Immersion Heater	2024 Q2
Cryogenic Liquid Storage and Vaporization Skids	2024 Q2
Pressure Relief Valves (Section VIII)	2024 Q2
Metal Expansion Joints	2024 Q2
Pressure Transmitters (Gauge/Differential)	2024 Q2
Temperature Transmitters/Thermocouples Assembly	2024 Q2
Fire Protection /Detection - Design, Supply and Install	2024 Q2
Radar Level Transmitters	2024 Q2
Inductive Level Transmitters	2024 Q2
General Purpose On/Off Ball Valves – Soft Seated	2024 Q2
CCTV System	2024 Q2
Insulation - Design/Supply	2024 Q2
Electric Heat Tracing - Design/Supply	2024 Q2
Conductivity Level Switches and Leak Detectors	2024 Q3
MEP (Mechanical, Electrical and Piping) Contractor - Supply and Install	2024 Q3
CRD Loop Modules (Integrator)	2024 Q3
Prefabricated Module (Electrical Equipment Room)	2024 Q3
AC Power Distribution Panel Board - 480V, 65kA Switchgear	2024 Q4