WASTE TREATMENT PLANT PROJECT REQUEST FOR INTEREST TO DESIGN A PREVENTATIVE MAINTENACNE OPTIMIZATION (PMO) REVIEW OF THE MAINTENANCE ACTIVITIES OF THE WTP SYSEM TO DEFINE AN APPROPRIATE AND EFFECTIVE MAINTENANE STRATEGY FOR ASSETS AND ASSEST GROUPS.

Requisition Number:	24590-CM-SRA-HK00-00001
Submit Interest By:	November 30, 2021
Quality Level:	CM
Award Type:	Labor hour/time and matertial

ESTIMATED SCHEDULE

Issue Request for Proposal:	TBD
Award and Notice to Proceed:	TBD

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.

SCOPE OF WORK

This scope of work will be executed in five Phases. This initial awarded scope will include Phase 1 and 2 only. Subsequent Phases of the work will be addressed by separate proposals provided for review and approval by CONTRACTOR.

SUBCONTRACTOR performs all work necessary to propose an optimum maintenance plan for each asset in each WTP system. This work will be conducted on a system by system basis. The optimum maintenance plan will define appropriate and effective maintenance activities for each asset. It is understood that run-to-failure maintenance may be an appropriate plan for some assets.

SUBCONTRACTOR will also propose Functional Equipment Groups (FEG) within each system. A FEG is a logical grouping of facility assets that can be isolated together. The FEG is usually built around a major asset and includes supporting assets of different asset types. The CONTRACTOR will use FEGs to enhance maintenance scheduling by combining many maintenance activities on different assets into one service outage.

The objective of this scope of work is to optimize WTP maintenance activities such that applicable and effective maintenance is performed at the appropriate frequency to maximize asset reliability and system availability. The FEG implementation will ensure that maintenance is scheduled in a way that reduces the impact on facility operation and increases system availability. A successful Maintenance Program depends on the integration of processes used by Operations, Engineering, Materials Management, Work Control and Maintenance. This scope of work is developed to enhance this integration.

- **Phase 1 - Project Planning Site Visit**

SUBCONTRACTOR shall attend a one week on-site visit at the WTP Project after contract award as agreed to by CONTRACTOR. Phase 1 will be used to support development of a project plan by SUBCONTRACTOR to perform the work of Phase 2. During Phase 1 CONTRACTOR will familiarize the SUBCONTRACTOR with the current state of the maintenance program and review, at a minimum, the following:

- WTP Project status and desired outcome from this scope of work.
- This scope of work, schedule, and SUBCONTRACTOR staffing.

- Visit WTP Project site to view facilities and production assets.
- CONTRACTOR and SUBCONTRACTOR organizational structures.
- Establish interface points to ensure the timely flow of information.
- Discuss the asset data needs of the SUBCONTRACTOR and data format provided by the CONTRACTOR.
- Establish read only access to the WTCC Computerized Maintenance Management System for the SUBCONTRACTOR.
- Review and establish access to other project data (project procedures, maintenance procedures, activity level work control documents, maintenance history, document control, drawings, vendor manuals, maintenance performance metrics, corrective actions reports, asset monitoring data, system health reports, system notebooks, asset specific improvement plans, etc.).
- Review policies, procedures, practices and tools used by the SUBCONTRACTOR (including software tools).
- Review and establish result and report formats for a system optimization report that includes asset maintenance plans, criticality, duty cycle, service condition, FEG recommendations and tabulation results.
- CONTRACTOR will review the first system that has been chosen in Phase 2. The system review will be an overview of the system and an accounting of the maintenance currently planned for the system. The CONTRACTOR System Engineer will be available at this review to answer questions about the system and the basis for the current maintenance activities.

SUBCONTRACTOR will submit, within 2 weeks after Phase 1 visit conclusion, a project plan proposal for Phase 2 work. CONTRACTOR will review and provide comments to the Phase 2 project plan within 2 weeks, for SUBCONTRACTOR resolution. Timely approval of the Phase 2 project plan is mandatory to support start of Phase 2 work by SUBCONTRACTOR no later than 6 weeks from the start date of the Phase 1 visit.

- **Phase 2 - Pilot System Maintenance Optimization**

SUBCONTRACTOR proposes an optimum maintenance plan for assets in the first system. A single system selected by CONTRACTOR will be used to establish and prove out the SUBCONTRACTOR proposed project plan. Performance of a single system will ensure that the optimization process, information gathering, lines of communication, procedures, practices, and resulting outputs used for this scope of work function in a cost effective and efficient manner to perform subsequent system maintenance optimizations. At the completion of Phase 2, the SUBCONTRACTOR will meet with CONTRACTOR and document any opportunities for improvement that will be addressed following the completion of the first system. SUBCONTRACTOR shall:

1. Conduct a review of documentation associated with assets of the single system. Based on this review, the SUBCONTRACTOR will determine each asset's criticality, duty cycle, service condition and propose an optimum maintenance plan for each asset in the system. The optimum maintenance plan will include appropriate and effective periodic maintenance, predictive maintenance, preservation maintenance, preventive maintenance, functional test, and run-to-failure maintenance. The optimum maintenance plan will be based on industry best practices, Electric Power Research Institute data, Institute of Nuclear Power Operations data, national and local codes and standards, maintenance history, etc.

2. Compare the proposed optimum maintenance plan with the existing maintenance plan in the WTCC Computerized Maintenance Management System. The results of this comparison will include, at a minimum, the following for each type of maintenance (periodic maintenance, predictive maintenance, preservation maintenance, preventive maintenance, functional test, and run-to-failure maintenance) and a grand total for the system:
   - The total number of maintenance activities revised.
   - The total number of maintenance activities to be added.
   - The total number of maintenance activities to be deleted.
   - The annual cost of parts and materials to be added.

- The annual cost of parts and material to be deleted.
- The annual hours of labor to be added.
- The annual hours of labor to be deleted.
- Identify any tools, supplies, and spare parts not currently owned by the WTCC Project.

3. Develop FEGs for each appropriate asset. A FEG is a logical grouping of facility assets that can be isolated together. The FEG is usually built around a major asset and includes supporting assets of different asset types. For example, an air compressor FEG might include the compressor, drive motor, control system, cooler, relief valve, etc. The use of FEGs enhances the organization's ability to schedule maintenance by combining many maintenance activities on different assets into one service outage. This minimizes downtime and reduces the number of times systems/assets are taken out of service. The CONTRACTOR will implement the use of FEGs.

4. Develop a system optimization report, using the format from Phase 1, that includes the asset's optimum maintenance plan, criticality, duty cycle, service condition, FEG (as appropriate), tabulation results and highlights any proposed changes to the current maintenance plan. This report will include a documented technical basis for each proposed maintenance activity change. A system optimization report shall be completed for the system and submitted to the CONTRACTOR for review, approval, and implementation as appropriate.

- **Phase 3 – Chemical Safety and Permit Assets**

As WTP has no active Safety Systems, the SUBCONTRACTOR shall complete steps 1 – 4 above for each of the WTP Systems that contain Chemical Safety and Permit Assets. In addition to the comparison results for each system in step 2, the SUBCONTRACTOR will maintain a Project total as each system is completed.

- **Phase 4 – Remaining DFLAW Systems**

SUBCONTRACTOR shall complete steps 1 – 4 above for each of DFLAW's remaining systems. In addition to the comparison results for each system in step 2, the SUBCONTRACTOR will maintain a Project total as each system is completed.

- **Phase 5 – HLW and PTF Systems**

SUBCONTRACTOR shall complete steps 1 – 4 above for each HLW and PTF system. In addition to the comparison results for each system in step 2, the SUBCONTRACTOR will maintain a Project total as each system is completed.

- **WORK LOCATION**

Work is to be completed both on site at the WTP Project and at SUBCONTRACTOR's offices. SUBCONTRACTOR shall comply with Project Security Program requirements. CONTRACTOR will establish access to project procedures and system information for SUBCNTRACTOR through remote access to minimize the number of on-site visits to perform Phase 2 and subsequent work phases. On-site project access must be coordinated through CONTRACTOR.

- **WORK SCHEDULE**

SUBCONTRACTOR shall work in accordance with CONTRACTOR'S work schedule to comply with all applicable safety and access requirements as defined in Exhibits "B" and "G" respectively. Schedules for each work phase will be agreed to through proposals as requested.

- **RELATED WORK (IF NECESSARY)**

As a future option, the SUBCONTRACTOR may be asked to support additional activities such as implementation support (loading FEGs in the Computerized Maintenance Management System, writing or editing work documents,

writing Periodic Maintenance and Surveillance (PM/S) Task Form (PMTF), etc.). Any additional support will be negotiated by future revisions to this Scope of Work.

○ SAFETY

SUBCONTRACTOR will be visiting a construction site with systems that are energized and pressurized in support of testing. SUBCONTRACTOR will be required to comply with all safety and access requirements and will be escorted on-site at all times. SUBCONTRACTOR will adhere to all applicable safety and access requirements as defined in the Subcontract.

○ TECHNICAL CAPABILITY

SUBCONTRACTOR personnel supporting this scope of work shall be highly qualified with experience performing similar work for DOE, commercial nuclear or chemical industrial sites with the same level of complexity as WTP and have demonstrated ability in timely and effective performance of this type of work with little guidance to scope. Work is expected to meet recognized industry standards of quality for professional work of a similar nature. Personnel performing the analysis shall be registered Professional Engineers, have an advanced Engineering degree or possess a minimum of 15 years of Maintenance and/or Operational experience at DOE, commercial nuclear or chemical industrial sites with the same level of complexity as WTP.

○ QUALITY ASSURANCE 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.

○ DELIVERABLES, SUBMITTAL, AND ACCEPTANCE CRITERIA

SUBCONTRACTOR submittals will include the following:

Phase 1 – Proposed project plan to perform Phase 2 single system optimization. The proposed project plan will include the detail cost, schedule, staffing and proposed result/report formats.

Phase 2 – Single system optimization report that includes the asset's optimum maintenance plan, criticality, duty cycle, service condition, FEG (as appropriate), tabulation results and highlights any proposed changes to the current maintenance plan. This report will include a documented technical basis for each proposed maintenance activity change. A system optimization report shall be completed for the system and submitted to the CONTRACTOR for review, approval and implementation as appropriate.

Deliverables for subsequent work Phases and the number of systems will be added through subsequent contract changes following completion of Phase 2 work.

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

Bechtel National, Inc.
2435 Stevens Center Place
Richland, WA 99354
Attn: Pamela Webb
Phone: 509-942-8010
Email Address: pawebb@bechtel.com
Mailstop: MS10-E