

STATEMENT OF WORK

Requisition #: 339912

Title: False Bottom Demonstration and Development Testing

Revision Number: 0

Date: November 24, 2020

1.0 Objective

Demonstrate repairing a storage tank back into service by filling the compromised bottom portion of the tank with an amount of self-leveling material, creating a new bottom of the tank.

2.0 Background/Introduction

There is a need to evaluate the viability of repairing double-shell storage tanks at the Hanford Site. Methods and technology will be used to evaluate methods to fill the compromised bottom portions of tanks with an amount of self-leveling material, creating a new bottom of the tank.

3.0 Scope

The development of this technology will be accomplished in two stages. The first stage is the demonstration of vendors technologies and abilities on scaled demonstration vessels that represent the Double Shell Tanks (DST) at the Hanford side. The second stage is the optimization and further bench testing and development from technologies identified in stage 1 that are capable.

Stage 1

Demonstrate repairing a representative scaled storage tank, by filling the compromised bottom portion of the tank with an amount of self-leveling material, creating a new bottom of the tank.

This demonstration will be accomplished by using materials to repair the scaled storage tank. Materials to be used may include grout/polymer/epoxy or combination of materials. The damaged portions of the tank will be representative of expected conditions within current tanks currently in use at Hanford. The damaged portions will include oxidation and through floor penetrations.

Stage 1 Key Activities:

- Demonstration of False Bottom repair technique.
- Qualification of the repair through hydrostatic testing or other methods.

Stage 2 - OPTION

Stage 2 shall only be authorized after successful completion of Stage 1. It is expected that not all vendors shall be provided authorization for Stage 2. Final selection for Stage 2 shall be based on WRPS evaluation of qualification data and Technical Approach from Stage 1.

Stage 2 scope will include building upon the grout/polymer/epoxy formulation from Stage 1, continue development of formulation and application techniques to evaluate adherence of material to sidewalls. Perform an analysis of failure possibilities to include risk factors and other parameters of potential failure. Continued analysis to assess impacts of factors that affect the application, performance and sustainability of the repair material. These may include, but not limited to radiation exposure, temperature changes, pH changes and optimization of the approach and parameters for deployment of repair techniques.

Stage 2 is to be performed at the subcontractors facilities in the form of laboratory testing and benchtop development. This shall include evaluation and refinement of deployment specifications for effective placement of any repairs. Also, assess the following:

- Radiation resistance
- Adherence to steel
- If more than one material used, strong adherence to other materials that compose the false bottom repair formulation,
- Adherence to layered rust, in varying conditions and forms (e.g., flaky, smoothed),
- Reaction to tank simulants.

4.0 Submittals

In support of the work scope established in Section 3.0 above, submittals are listed on the Master Submittal Register (MSR).

Submittals shall be provided using the TOC Incoming Letter of Transmittal form provided by the Procurement Specialist. All transmittal subject headings shall contain, at a minimum, the subcontract number, submittal number, and submittal description.

Submittals shall be provided in electronic format unless available only as a hard copy. Electronic submittals shall be sent in accordance with instructions provided by the Procurement Specialist. Electronic formats must be non-password protected in one of the formats noted on the Procurement Website located and the following web address:

http://www.hanford.gov/tocpmm/files.cfm/APPROVED_ELECTRONIC_RECORD_FORMATS.pdf

5.0 Acceptance Criteria

Successful demonstration of capabilities for repairing corrosion and penetrations in vessels in Stage 1 and continued development in Stage 2.

6.0 Configuration Management and Standards

6.1 Configuration Management Requirements

There are no specific Configuration Management requirements applicable to this SOW.

6.2 Applicable Standards

None.

7.0 ESH&Q Requirements

7.1 Quality Assurance Requirements

The subcontractor shall follow standard commercial quality practices.

7.2 Price-Anderson Amendments Act Requirements

This 7.2 section and the General Provisions Article 2.11 entitled, *Price-Anderson Amendments Act (PAAA)*, are both determined to be *not applicable*.

7.3 Special ESH&Q Requirements

The requirements & programs identified in the Preliminary Hazard Analysis for requisition number 339912, is to be used for evaluation of performing demonstrations at the Cold Test Facility to repair the bottom of damaged tanks with self-leveling material.

When performing work on site or at TOC Controlled Facilities, the Subcontractor shall work to General Hazards Analysis (GHA) or an approved JHA.

8.0 Verification/Hold Points

Stage 2 work scope shall be only when authorized by WRPS.

9.0 Reserved

10.0 Work Location/Potential Access Requirements

Stage 1 work scope will be performed at WRPS facilities, WRPS Cold Test Facility (Horn Rapids Rd., Richland, WA 99354). It is expected that the demonstration tests will be conducted outside at WRPS facilities.

Stage 2 work is expected to be performed at the subcontractors facilities. Project status meetings may occur at WRPS office facilities.

11.0 Training

No additional training requirements to perform the scope of work.

12.0 Qualifications

Experience working with nuclear or mining industries with sealant systems for in-place equipment and facilities. Experience designing formulas to apply materials for repairs to metal and other sealants for equipment and facilities.

Designated project manager for oversight and technical execution of work scope.

13.0 Special Requirements

Use of Government Vehicles

There is no anticipated need for any Subcontractor employees to use a Government-furnished vehicle in the performance of this statement of work. The Subcontractor's employees, therefore, are specifically prohibited from driving any Government-furnished vehicles under the performance of this statement of work unless this statement of work is formally so modified by the parties and the employee(s) will present a valid driver's license to the BTR for review.

Government Property

Government Property is not anticipated to be furnished to or acquired by Subcontractor under this SOW.

14.0 Reporting/Administration

Monthly cost and schedule reports.

15.0 Workplace Substance Abuse Program Requirements

A Workplace Substance Abuse Program is not required for this SOW.