

STATEMENT OF WORK

Requisition #: 268160

Title: Refurbish A/AX Exhauster POR126 and POR127

Revision Number: 0

Date: June 4, 2014

Prior SOW or Revision Date: None

1.0 Objective

The objective of this Statement of Work (SOW) is to replace the missing parts, install new upgrades, and test the existing POR126 and POR127 (3,000 cfm) exhausters with the goal of deploying the exhausters at AX and A-Farms.

2.0 Background/Introduction

To support A and AX-Farm retrievals, the ventilation system will use the existing 3,000 cfm exhausters: POR126 (planned for installation at the AX-Farm) and POR127 (planned for installation at the A-Farm). A dual moisture separator will be installed at the exhausters' intake. Ducting and valves will be installed to allow ventilation of one or more tanks of the AX or A- tank farm in support of active waste retrieval or construction activities. A connection point will also be provided to support the installation of an additional 3,000 cfm exhauster at a future date.

Portable exhausters POR126 and POR127 were purchased approximately eight years ago using Specification RPP-21568, *Specification for a Primary Exhaust System for Waste Tank Ventilation*. Both exhausters also were upgraded in 2010 to resolve issues identified during original receipt and testing. The results of testing were documented in RPP-RPT-47707 and RRP-RPT-47708 respectively. The two exhausters are essentially identical in design to the POR107 exhauster recently installed in C-Farm and is currently operational supporting C-105 and C-107 retrieval activities. During POR107 commissioning, several design modifications were required to provide reliable and continuous exhauster operation. Similar modifications are required and planned for exhausters POR126 and POR127 prior to field installation. In addition, upgrades to exhausters to address improvements identified as a result of POR107 operation are addressed.

3.0 Scope

This Statement of Work (SOW) includes:

- Receive exhausters (POR126 and POR127) from Buyer at Marshalling Yard
- Transport exhauster skids (including stacks and all loose components) from Marshalling Yard to Subcontractor's workplace.
- Offload the exhausters at Subcontractor's workplace.

- Assemble exhausters, stack and control systems
- Install missing parts, and any replacement parts as needed
- Replacement of damaged, non-functional parts, installing new upgrades
- Complete fabrication work as needed
- Perform Acceptance tests on assembled units, including:
 1. Exhaust Train Pressure Decay Test and repair as required
 2. fan vibration tests
 3. Stack flow test, correct any deficiencies.
- Dismantle exhauster units for transport
- Load, transport exhausters and all loose components back to Marshalling Yard.

Both exhausters (POR126 and POR127) will be loaded and offloaded at Marshalling Yard by the Buyer. The Subcontractor is responsible to provide transportation. The Subcontractor shall perform all the physical modification and testing using their work control procedures.

Upon turnover to the Subcontractor, an initial assessment of condition shall be jointly performed with Subcontractor and Buyer personnel. This initial assessment shall form the basis for preparation of a specific refurbishment plan for each exhauster.

The Subcontractor shall prepare for Buyer approval a refurbishment plan for each exhauster that identifies all components (supplier-furnished and GFE) and assemblies to be installed. The refurbishment plan shall provide for documented Buyer approval (Engineering) for each item, component, or assembly the Subcontractor provides, including Subcontractor fabrications, prior to installation. Government Furnished Equipment (GFE) does not have to be approved by the Buyer (Engineer) prior to installation. The refurbishment plan may be incorporated into the test plan at the discretion of the Subcontractor, although Buyer recommends that the refurbishment plan and the test plan be separated for documentation purposes. In the case of items discovered to be inoperable after initial assessment, the refurbishment plan may be supplemented on-the-spot upon Buyer (Engineer) documented approval.

Buyer shall be responsible for preparation of Engineering Change Notice(s) (ECN) and drawing revisions as required to support modification and incorporate design changes made under the redline process.

Acceptance testing for all modifications shall be performed by Subcontractor and assisted by the Buyer. All modifications to the exhauster software will be performed by Buyer. Buyer

will also provide a test engineer, and instrument technician familiar with exhauster operation and control to support and direct testing activities.

Once all testing is successfully performed, exhausters shall be drained of all liquids, winterized, with inlets and outlets sealed. The exhausters shall be packaged for transport by the Subcontractor.

The Buyer shall provide all test procedures, design and modification documentation (drawings and ECNs) necessary to support testing, modification, and design enhancements of the POR126 and POR127 exhausters. Ventilation design shall conform to requirements identified in RPP-21568, Revision 1, *Specification for a Primary Exhaust System for Waste Tank Ventilation* and TFC-ENG-STD-07, *Ventilation System Design Standard*, shall govern work performed under this SOW.

POR126 shall be upgraded, tested, and returned as a priority. POR127 modification and testing shall follow POR126.

Subcontractor shall procure all required items that are not specifically listed below as GFE and in section 13.0

POR126 known activities addressed by this SOW:

3.1.1 Furnish, Fabricate, and Assemble Stack Extension POR126

Furnish, fabricate, and assemble stack extension POR126 (including labels) in accordance with ECN-14-000373 and H-14-109931

3.1.2 Install CAM In-Line Sampling Head and Applicable Fittings

Install CAM In-Line Sampling Head H-14-106721, item 10 (Tag No. POR126-VTP-RE-554A), and applicable fittings(including labels) in Sample Cabinet POR126-VTP-ENCL-550 in accordance with Drawings H-14-106721 and H-14-106714

Item 10, CAM, In-Line Sampling Head (Eberline) is supplied as GFE.

- Install/mount CAM, In-Line Sampling head into enclosure
- Perform tubing connections.
- Perform electrical connections.

3.1.3 Install Cable In-line Sample Head and Applicable Fittings

Install Cable In-line Sampling Head H-14-106721, item 40 and applicable fittings (including labels) between Sample Cabinet POR126-VTP-ENCL-550 and PLC cabinet in accordance with Drawing H-14-106721

Item 40, Cable In-Line Sampling Head (Eberline) is supplied as GFE.

- Install/mount Cable In-Line Sampling head between enclosures
- Perform tubing connections.
- Perform electrical connections.

3.1.4 Install Mass Flow Control Valves in Sample Cabinet

Install Mass Flow Control Valves FCV-555 and FCV-556 in Sample Cabinet POR126-VTP-ENCL-550 (including labels) in accordance with Drawings H-14-106721, item 4

- Install/Mount FCV-555 and FCV-556.
- Perform tubing connections,
- Perform electrical connections.

3.1.5 Fabricate, Install Filter Compressor Weldment and Gelman Sciences Filter Holder

Fabricate and Install filter compressor weldment item 30, and install Gelman Sciences filter holder item 12 (H-14-106721), and associated fittings (including labels) in Sample Cabinet POR126-VTP- ENCL-550. Perform modifications in accordance with Drawings H-14-106721.

Item 12 Gelman Sciences filter holder is supplied as GFE.

- Furnish and fabricate filter compressor weldment item 30.
- Install/perform tubing connections.

3.1.6 Install Eberline AMS4 CAM H-14-106719 in PLC Cabinet POR126-VTP-ENCL-110

Install Eberline AMS4 CAM item 85 (H-14-106719) in PLC Cabinet POR126-VTP-ENCL-110 (including labels) in accordance with Drawings H-14-106719 and H-14-106717

Item 85 Eberline AMS4 CAM is supplied as GFE

- Install/Mount Eberline AMS4 CAM item 85 Tag No. POR126-VTP-RT-554 in PLC Cabinet
- Perform Electrical connections

3.1.7 Install HMI Computer Monitor in PLC Cabinet POR126-VTP-ENCL-110

Install HMI Computer Monitor item 14 (including labels) in accordance with Drawings H-14-106719 and ECN-14-000374

Item 14 HMI Computer Monitor is supplied as GFE

- Install/mount HMI Computer Monitor
- Perform Electrical connections

3.1.8 Replace Verabar Flow Sensor with integral RTD and low side isolation valve VTP-V-584

Replace Verabar Flow Sensor with integral RTD item 13 and low side isolation valve VTP-V-584 (including labels) in accordance with Drawings H-14-106704

- Remove existing Verabar flow sensor with integral RTD and low side isolation valve VTP-V-584
- Install new Verabar Flow Sensor with integral RTD item 13 and low side isolation valve VTP-V-584
- Perform Mechanical connections
- Perform Electrical connections

3.1.9 Install Industrial Hygiene (IH) Sampling Port and Isolation Valve on stack

Install IH Sampling Port and Isolation Valve (including labels) in accordance with ECN-14-000375

- Install IH Sampling Port and Isolation Valve

3.1.10 Install RTD Element and Insulation on Glycol Heater

Install RTD Element and Insulation on Glycol Heater (including labels) in accordance with ECN-11-001678

Raise Glycol Reservoir such that the heater core is always submerged in accordance with ECN-14-000376

- Remove existing Insulation
- Install new RTD temperature probe Tag No. POR126-VTP-TE-372, connection head RTD, worm gear hose clamp
- Correct heater core per ECN-14-000376
- Perform Electrical connections
- Install new insulation item

3.1.11 Upgrade Heater Controller POR126-VTP-JC-372. Provide larger enclosure

Upgrade Heater Controller POR126-VTP-JC-372 (including labels) and Provide larger enclosure in accordance with ECN-14-TBD

- Install new solid state relays, and electrical contactors in new electrical cabinet.
- Perform Electrical connections

3.1.12 Add Air Conditioning Unit to Vacuum Pump Enclosure POR126A-VTP-ENCL-551

Add Air Conditioning Unit to Vacuum Pump Enclosure POR126A-VTP-ENCL-551 (including labels) in accordance with ECN-14-TBD

- Install an air condition unit
- Perform Electrical connections

3.1.13 Hard Wire electrical and power control signals to Vacuum Pump Enclosure POR126A-VTP-ENCL-551

Hard Wire electrical and power control signals from Vacuum Pump terminal box POR126-VTP-ENCL-552 to Vacuum Pump Enclosure (including labels) in accordance with ECN-14-TBD

- Remove power cord, add hard wire in conduits
- Perform Electrical connections

3.1.14 Mount Remote Antenna on the top of PLC Cabinet

Mount Remote Antenna (including labels) in accordance with ECN-14-000379

- Install/Mount Remote Antenna
- Perform Electrical connection

3.1.15 Replace the inlet MOV-352 and outlet MOV-361

Replace the MOV-352 item 8 (H-14-106705), and MOV-361 item 8 (H-14-106706) in accordance with H-14-108926 and ECN-14-TBD (including labels)

- Remove the existing MOVs
- Replace the MOVs per ECN-14-XXX
- Perform Electrical connections

3.1.16 Install Analog Output Card in PLC Cabinet POR126-VTP-ENCL-110

Install Analog Output Card, item 50, in accordance with Drawings H-14-106719 and ECN-14-000374 (including labels)

Item 50 Analog Output Card is supplied as GFE

- Install Analog Output Card
- Perform Electrical connections

POR127 known activities addressed by this SOW:

3.2.1 Furnish, Fabricate, and Assemble Stack Extension POR127

Furnish, Fabricate, and Assemble Stack Extension POR127 (including labels) in accordance with ECN-14-TBD.

3.2.2 Install CAM In-Line Sampling Head and applicable fittings

Install CAM In-Line Sampling Head item 10 and applicable fittings in Sample Cabinet POR127-VTP-ENCL-550 (including labels) in accordance with H-14-106746

Item 10 CAM In-Line Sampling Head (Eberline) is supplied as GFE

- Install/mount CAM, In-Line Sampling head into enclosure
- Perform tubing connections.
- Perform electrical connections

3.2.3 Install Cable In-line Sample Head and Applicable Fittings

Install Cable In-line Sampling Head H-14-106746, item 40 and applicable fittings (including labels) between Sample Cabinet POR127-VTP-ENCL-550 and PLC cabinet in accordance with Drawing H-14-106746

Item 40, Cable In-Line Sampling Head (Eberline) is supplied as GFE.

- Install/mount Cable In-Line Sampling head between enclosures
- Perform tubing connections.
- Perform electrical connections.

3.2.4 Install Mass Flow Control Valves in Sample Cabinet

Install Mass Flow Control Valves FCV-555 and FCV-556 and applicable fittings in Sample Cabinet POR127-VTP-ENCL-550 (including labels) in accordance with Drawings H-14-106746, item 4

- Install/Mount FCV-555 and FCV-556.
- Perform tubing connections,

- Perform electrical connections.

3.2.5 Install Eberline AMS4 CAM in PLC Cabinet POR127-VTP-ENCL-110

Install Eberline AMS4 CAM item 85 (H-14-106744) in PLC Cabinet POR127-VTP-ENCL-110 (including labels) in accordance with Drawings H-14-106744 and H-14-106739

Item 85 Eberline AMS4 CAM is supplied as GFE

- Install/Mount Eberline AMS4 CAM item 85 Tag No. POR127-VTP-RT-554 in PLC Cabinet
- Perform Electrical connections

3.2.6 Install HMI Computer Monitor

Install HMI Computer Monitor item 14 (including labels) in accordance with Drawings H-14-106744 and ECN-14-TBD

Item 14 HMI Computer Monitor is supplied as GFE

- Install HMI Computer Monitor
- Perform Electrical connections

3.2.7 Replace Verabar Flow Sensor with integral RTD and low side isolation valve VTP-V-584

Replace Verabar Flow Sensor with integral RTD and low side isolation valve VTP-V-584 (including labels) in accordance with Drawings H-14-106729

- Remove existing Verabar flow sensor with integral RTD and low side isolation valve VTP-V-584
- Install new Verabar Flow Sensor with integral RTD item 13 and low side isolation valve VTP-V-584
- Perform Mechanical connections
- Perform Electrical connections

3.2.8 Install IH Sampling and Isolation Valve on stack

Install IH Sampling and Isolation Valve (including labels) in accordance with ECN-14-TBD

- Install IH Sampling and Isolation Valve

3.2.9 Install RTD Element and Insulation on Glycol Heater

Install RTD Element and Insulation on Glycol Heater (including labels) in accordance with ECN-11-001679

Raise Glycol Reservoir such that the heater core is always submerged In accordance with ECN-14-TBD

- Remove existing Insulation
- Install new RTD temperature probe, Tag No. POR127-VTP-TE-372 connection head RTD, worm gear hose clamp
- Correct the heater core per ECN-14-TBD
- Perform Electrical connections
- Install new insulation

3.2.10 Upgrade Heater Controller POR127-VTP-JC-372

Upgrade Heater Controller POR127-VTP-JC-372 providing larger enclosure (including labels) in accordance with ECN-14-TBD

- Install new solid state relays, and electrical contractors in new electrical cabinet.
- Perform Electrical connections

3.2.11 Add Air Conditioning Unit to Vacuum Pump Enclosure POR127A-VTP-ENCL-551

Add Air Conditioning Unit to Vacuum Pump Enclosure POR127A-VTP-ENCL-551(including labels) in accordance with ECN-14-TBD

- Install an air condition unit
- Perform Electrical connections

3.2.12 Hard Wire electrical and power control signals to Vacuum Pump Cabinet POR127A-VTP-ENCL-551

Hard Wire electrical and power control signals from Vacuum Pump terminal box POR127-VTP-ENCL-552 to Vacuum Pump Enclosure (including labels)in accordance with ECN-14-TBD

- Remove power cord, add hard wire in conduits
- Perform Electrical connections

3.2.13 Mount Remote Antenna on the top of PLC Cabinet

Mount Remote Antenna (including labels) in accordance with ECN-14-TBD

- Install/Mount Remote Antenna
- Perform Electrical connection

3.2.14 Replace the inlet MOV-352 and outlet MOV-361

Replace the MOV-352 item 8 (H-14-106730), and MOV-361 item 8 (H-14-106731) in accordance with H-14-108927 and ECN-14-TBD (including labels)

- Remove the existing MOVs
- Replace the MOVs per ECN-14-XXX
- Perform Electrical connections

4 Deliverables:

The following identifies deliverables associated with this Statement of Work.

Deliverable	Due
Work Plan / Proposal	To be submitted as part of the proposal. The work plan shall address all scope contained within this SOW.
Kickoff Meeting and Joint Initial Assessment	Within one week of contract award.

Deliverable	Due
<ul style="list-style-type: none"> • Provide Fabrication, Inspection and Test Plan to Buyer for approval. 1. Refurbishment Plan 2. Test Plan	Per MSR
<ul style="list-style-type: none"> • Complete modification and testing of POR126. 	August 29, 2014
<ul style="list-style-type: none"> • Submit POR126 Fabrication/Test Documentation to Buyer for Approval (including Redlines, Modification Records and Reports, Completed FIT Plan, and Test Report). 	Per MSR
<ul style="list-style-type: none"> • Package POR126 for layup/transport and ship upgraded exhauster to Buyer. 	September 22, 2014
<ul style="list-style-type: none"> • Complete modification and testing of POR127. 	December 4, 2014
<ul style="list-style-type: none"> • Submit POR127 Fabrication/Test Documentation to Buyer for Approval (including Redlines, Modification Records and Reports, Completed FIT Plan, and Test Report). 	Per MSR
<ul style="list-style-type: none"> • Package POR127 for layup/transport and ship upgraded exhauster to Buyer. 	December 18, 2014

All deliverables shall be prepared electronically using Hanford Site standard format (e. g., Microsoft Office) and delivered in electronic image files and hard copy in quantities as noted in Column 20 of the attached MSR to the Buyers Technical Representative or designee. Electronic copies of other deliverables shall also be provided by the Subcontractor upon request.

All deliverables prepared under this SOW shall become the property of DOE-ORP. Subcontractor information shall be provided using the TOC Incoming Letter of Transmittal (form A-6005-315).

4.1 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 A-6005-315). 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 may be sent to TOCVND@rl.gov or delivered via a Buyer designated File Transfer Protocol (FTP) site. Electronic formats must be non-password protected in one of the following formats:

- Microsoft® Office Compatible
- Portable Document Format (PDF)
- Tagged Image File Format (TIFF)
- Graphics Interchange Format (GIF)
- Joint Photographic Experts Group (JPEG)
- Windows Media Video (WMV)
- Moving Picture Expert Group (MPEG)
- Extensible Markup Language (XML)
- HyperText Markup Language (HTML)
- Comma Separated Values (CSV)
- Text (TXT)

5.0 Acceptance Criteria

All deliverable documentation shall be complete, accurate, legible, and reproducible. Before delivery, design media and documents shall be reviewed by qualified Subcontractor personnel for technical adequacy and appropriate content in accordance with the Subcontractor's Quality Assurance procedures. The Subcontractor shall attest, in writing, to the accuracy and completeness of the information contained in the final deliverables.

Deliverables shall be subject to approval by the BTR. The BTR will determine additional acceptance criteria, or items to be resolved, as necessary. Deliverables shall comply with this SOW and Buyer procedures and project technical basis documents identified in Section 6.2.

Unless otherwise approved by Buyer, All electrical control panels and electrical equipment [a general term including material, fittings, devices, appliances, luminaries (fixtures), apparatus, and the like, used as a part of, or in connection with, an electrical installation] delivered or brought onto the site in performance of this subcontract must be listed or labeled by an organization currently recognized by OSHA as a nationally recognized testing laboratory.

1. For any system or completed assembly containing electrical systems, the Subcontractor shall provide evidence of NRTL listing along with labeling. If a category for the assembly does not exist, e.g. custom-made equipment, the Subcontractor shall provide information necessary for Buyer evaluation based on compliance with the provisions of the NEC containing the following information:
 - A. Provide a complete list of components/parts used in the fabrication of the assembly along with the UL file number associated with each part number.
 - B. Provide a summary of conditions of acceptability for any "Recognized" components used in the fabrication of the assembly.
 - C. For any unevaluated component, provide descriptive literature to verify the use of the unevaluated component, including product specification and a description of its intended application.

Buyer will then evaluate and approve by inspection before equipment is released for field use by completing Non-NRTL Electrical Equipment Evaluation Form (A-6004-086) and Non-NRTL Electrical AHJ Approval Form (A-6004-085).

2. For any system or completed assembly containing electrical systems, the Subcontractor shall provide evidence of NRTL listing along with labeling. If a category for the assembly does not exist, e.g. custom-made equipment, the Subcontractor shall perform an independent NEC inspection providing an NEC Inspection Report upon delivery. Buyer will then approve by inspection before equipment is released for field use by completing Non-NRTL Electrical AHJ Approval Form (A-6004-085).

Custom-made Industrial Control Panel assemblies must comply with the provisions of UL508A. Include the following applicable requirements for custom-made assemblies:

For Industrial Control Panels, the Subcontractor shall fabricate and certify the control panel in accordance with the provisions of UL508A and affix his label to completed assembly.

6.0 Configuration Management and Standards

6.1 Configuration Management Requirements

The fabricator change control process is applicable per TFC-ENG-DESIGN-06 (section 4.7). This can be either a fabrication change control process (e.g., redline process) that is established and controlled by the fabricator, or the Buyer process prescribed per TFC-ENG-DESIGN-06 (section 4.7, steps 3 through 11). If the fabricator's change control process is to be used, Buyer (engineering) approval is required of each change prior to commencement of work and status recording of each change.

Configuration management requirements for this Release are based upon the types of engineering services being procured and include the Tank Operating Contractor (TOC) standards listed in Section 6.2 *Applicable Standards* and the statements below.

The Subcontractor is responsible for performing constructability review(s). The constructability review(s) shall include a check for interferences and fit-up and consider the as-installed configuration as well as interim configurations during the installation process. In the event that the Subcontractor cannot adequately perform a constructability review due to incomplete or inadequate as-built or field walk-down information, the Subcontractor shall notify the Buyer's Technical Representative to determine an acceptable alternate technical approach.

6.2 Applicable Standards

The following codes and standards, including documents referenced therein, form a part of the Basis for the work addressed by this SOW. The most current revisions shall be used. Exceptions to any of these codes/standards or any portion(s) thereof shall be allowed only as provided and approved by the Buyer.

ANSI N42.18-2004	Specification and Performance of On-Site Instrumentation for Continuously Monitoring Radioactivity in Effluents
ANSI/ASHRAE 52.2-2007	Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size
ANST-SNT-TC-1 A	American Society for Non-Destructive Testing
ASME NQA-1	Quality Assurance Program Requirements for Nuclear Facilities
ASME AG-1-2012	Code on Nuclear Air and Gas Treatment
ASME N510-2007	Testing of Nuclear Air Treatment Systems
ASME N509-2002	Nuclear Power Plant Air Cleaning Units and Components

ASME N511-2007	In-Service Testing of Nuclear Air Treatment, Heating, Ventilating, and Air-Conditioning Systems
ASME B31.3-20012	Process Piping
ASME STS-1-2011	Steel Stacks
ANSI/ABMA, 11-2008	Load Ratings and Fatigue Life for Roller Bearings
AWS D1.1-2010	Structural Welding Code
AWS D1.2-2008	Structural Welding Code – Aluminum
AWS D1.3-2008	Structural Welding Code – Sheet Steel
AWS D1.6-2007	Structural Welding Code-Stainless Steel
AWS D9.1-2012	Specification for the Welding of Sheet metal
AWS QC-1-2007	Standard and Guide for Qualification & Certification of Welding Inspectors
IEEE 112-2004	Test Procedure for Polyphase Induction Motors and Generators
ISO-1940-1-2005	Mechanical Vibration – Balance Quality Requirements of Rigid Rotors
MICA	Midwest Insulation Contractors Association
EPRI NCIG-01 Rev 2, 1987	Visual Weld Acceptance Criteria for Structural Welding at Nuclear Power Plants
NEMA MG-1-2009	Motors and Generators
NFPA 70-2014	National Electrical Code
NFPA 77-2007	Recommended Practice on Static Electricity
NFPA 79-2012	Electrical Standard for Industrial Machinery
ISO 1940/1-2005 (rigid) state	Mechanical vibration — Balance quality requirements for rotors in a constant (rigid) state
SMACNA, 1481-1997	HVAC Duct Construction Standards Metal and Flexible
SNT-TC-IA-2006	ASNT’s Guideline to Personnel Qualification and Certification in NDT
UL 508A-2014	UL Standard for Safety Industrial Control Equipment
40CFR52	Protection of Environment
DOE-RL-92-36	Hanford Site Hoisting and Rigging Manual
DOE-HDBK-1169-2003	Nuclear Air Cleaning Handbook
International Building Code (IBC), International Mechanical Code (IMC), and International Plumbing Code (IPC). ASME Boiler & Pressure Vessel Code- 2011 and ERRATA 2012, Section IX, “Qualification Standard for Welding and Brazing Procedures, Welders, Brazers, and Welding and Brazing Operators.”	

7.0 ESH&Q Requirements

7.1 Quality Assurance Requirements

This scope of work is designated as Quality Level 3, General Service.

The Subcontractor shall have an implemented Quality Assurance Program. The program is required to be reviewed, evaluated, and approved by Buyer. The program shall be equivalent to the following requirements from the American Society of Mechanical Engineers, NQA-1-2004, *Quality Assurance Requirements for Nuclear Facility Applications*, including NQA-1a-2005 and NQA-1b-2007 Addenda, or later version.

NQA-1 Criteria	Title	All Sections	Specific Sections
Part I, Req. 1	Organization	ALL	
Part I, Req. 2	Quality Assurance Program	PART	All Except Section 303
Part I, Req. 3	Design Control	PART	100

Part I, Req. 4	Procurement Document Control	ALL	
Part I, Req. 5	Instructions, Procedures, and Drawings	ALL	
Part I, Req. 6	Document Control	ALL	
Part I, Req. 7	Control of Purchased Items and Services	PART	All Except Sections 506 and 700
Part I, Req. 8	Identification and Control of Items	ALL	
Part I, Req. 9	Control of Processes	ALL	
Part I, Req. 10	Inspection	PART	All Except Section 604 and Addenda 1b-2007 Req 10 Section 700 "Inspection During Operations"
Part I, Req. 11	Test Control	PART	All Except Sections 400 and 602
Part I, Req. 12	Control of Measuring and Test Equipment	ALL	
Part I, Req. 13	Handling, Storage, and Shipping	PART	All Except Section 200
Part I, Req. 14	Inspection, Test, and Operating Status	PART	All Except application to operating status of facilities
Part I, Req. 15	Control of Nonconforming Items	PART	100, 200, 300
Part I, Req. 16	Corrective Action	ALL	
Part I, Req. 17	Quality Assurance Records	PART	All Except Sections 400, 600 article b, 700, and 800
Part I, Req. 18	Audits	ALL	
Part II, Sub Part 2.2	Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Nuclear Power Plants.	NONE	
Part II, Sub Part 2.4	Installation, Inspection, and Testing Requirements for Power, Instrumentation, and Control Equipment	NONE	
Part II, Sub Part 2.7	Computer Software for Nuclear Facility Applications	NONE	
Part II, Sub Part 2.8	Installation, Inspection, and Testing of Mechanical Equipment and Systems	NONE	
Part II, Sub Part 2.18	Maintenance	NONE	
Part III, Sub Part 3.1	Quality Assurance Programs	NONE	
Part III, Sub Part 3.2	Quality Assurance Programs	NONE	

Part III, Sub Part 3.3	Collection of Scientific And Technical Information For Site Characterization of High-Level Nuclear Waste Repositories	NONE	
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7.1.1 Supplier Quality Assurance Program

The Subcontractor's Quality Assurance Program shall be subject to review at all times, including prior to award.

7.1.2 Supplier Quality Assurance Program Changes

The Subcontractor shall, during the performance of this subcontract, submit proposed changes to their approved quality assurance program to the Buyer for review and concurrence prior to implementation.

7.1.3 Quality Assurance Oversight

Buyer personnel will co-ordinate with the supplier to conduct scheduled and periodic oversight of activities or products associated with this scope of work.

7.1.4 Procurement Quality Clauses Invoked

Procurement quality clauses are invoked as delineated below:

- B13 Fabrication, Inspection, Test Plan (for refurbishment and test plans)
- B16 Source Inspection
- B22 Nonconformance Reporting
- B52 Inspection and Test Reports (for completed test plans)
- B61 Certification of Calibration (for new calibrated devices on exhausters supplied by fabricator)
- B65 NRTL Labeled or Listed
- B73 Control of Graded Fasteners
- B76 Procurement of Potentially Suspect or Counterfeit Items
- B79 Certificate of Conformance
- B85 Shipping, Storage, or Handling Plan

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 N/A.

7.3 Special ESH&Q Requirements

Access to the Hanford Site is required for pick-up and delivery of items only.

8.0 Verification/Hold Points

Hold points, if used, will be identified by Buyer in Subcontractor's refurbishment and/or test plans.

9.0 Reserved

10.0 Work Location/Potential Access Requirements

Work on this task will primarily be conducted at the Subcontractor's place of business but access to the Hanford Site access may be needed to interact with Buyer (engineers). This access will be done at 2704HV.

11.0 Training

Individuals reporting to the Hanford Site to perform work in accordance with this SOW are required to pass Hanford General Employee Training (HGET).

12.0 Qualifications

Contractor Personnel and all lower tier Subcontractors shall have performed similar work and provide personnel with qualification commensurate with their work assignments.

13.0 Special Requirements

There are no additional Special Requirements identified for this task.

Use of Government Vehicles

There is no anticipated need for any Subcontractor employees to use a Government-furnished vehicle in the performance of this SOW. The Subcontractor's employees, therefore, are specifically prohibited from driving any Government-furnished vehicles under the performance of this SOW unless this SOW is formally so modified by the parties and a copy of any applicable driver's license provided to the BTR.

Government Property

The following Government property that will be provided as part of this task:

POR126 Exhauster

- Item 10 (H-14-106721) CAM, In-Line Sampling Head and Cable
- Item 12 (H-14-106721) Gelman Sciences filter holder
- Item 85 (H-14-106719) Eberline AMS4 CAM
- Item 40 (H-14-106721) Cable In-Line Sampling Head (Eberline)
- Item 50 (H-14-106719) Analog Output Card
- Item 14 (H-14-106719) HMI Computer Monitor

POR127 Exhauster

- Item 10 (H-14-106746) CAM, In-Line Sampling Head and Cable
- Item 85 (H-14-106744) Eberline AMS4 CAM
- Item 40 (H-14-106746) Cable In-Line Sampling Head (Eberline) Item 14 (H-14-106744) HMI Computer Monitor

14.0 Reporting/Administration

The Subcontractor shall:

- Provide weekly and monthly status reports.
- Attend schedule status meetings on a regular basis or as requested by the Project manager or his designee.
- Document all technical communications in writing (e. g., via email, reports, or letters).
- Provide meeting minutes, teleconference minutes, email exchanges, and other written records of communication related to this SOW when requested by the Project manager or his designee.
- Accruals are required to be reported in accordance with the General Provisions as well as notification of 75% expenditure.

15.0 Workplace Substance Abuse Program Requirements

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