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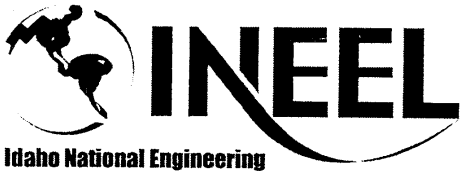
Statement of Work

Treatment for Disposition of INEEL Mixed Low-Level Waste



Idaho National Engineering
and Environmental Laboratory

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1. BACKGROUND

Bechtel BWXT Idaho, LLC (BBWI), a prime management and operating contractor for the U.S. Department of Energy (DOE), requires treatment, transportation and disposal of mixed low-level radioactive waste (MLLW) for the Idaho National Engineering and Environmental Laboratory (INEEL). The INEEL site is located approximately 50 miles west of Idaho Falls, Idaho, and is comprised of several facilities, including nuclear research and development laboratories, and treatment, storage, and disposal facilities.

This Statement of Work (SOW) presents the requirements for the treatment, transportation and disposal of MLLW generated by operations at the INEEL.

All activities associated with treatment, transportation and disposal of the INEEL MLLW, and any residuals generated as the result of the treatment process shall be conducted in accordance with applicable federal, state, and local statutes and regulations.

2. SCOPE

2.1 General

The Subcontractor shall provide both onsite and offsite support in the treatment, transportation and disposal of MLLW generated by operations at the INEEL. The Subcontractor shall currently possess and maintain all applicable licenses/permits, personnel, facilities, equipment, and materials to perform the following activities:

- Onsite facilitation of waste characterization, packaging, acceptance and shipping activities
- Pretreatment of MLLW prior to treatment
- Waste treatment to meet applicable regulatory standards and requirements
- Waste treatment of any treatment residuals to meet applicable regulatory standards and requirements
- Waste characterization of any treated wastes, as required, to verify treatment standards have been met prior to disposal
- Transportation and disposal of the treated waste and any residuals at a permitted and licensed disposal facility.

2.2 Waste Description

This SOW has been prepared for treatment, transportation and disposal of MLLW generated by operations at the INEEL. An estimated 1600 cubic meters of containerized MLLW (approximately 1662 containers) may be available for treatment. Each MLLW stream has unique chemical and physical properties and may require different handling, transfer, blending, processing, and treatment processes. The MLLW has been grouped based on Environmental Protection Agency (EPA) waste code, physical and chemical properties, and/or potential known treatment process(es) to meet disposal standards. A description of each treatment group is presented below. Detailed waste stream information, by treatment group, is found on the attached CD-ROM (Attachment 1). The waste streams presented in Attachment 1 represent the INEEL MLLW backlog as of October 1, 2002. The inventory has been reduced since that time and the estimated amount of waste listed in this SOW reflects the best estimate of the current inventory levels. See MLLW inventory update (Attachment 2) for the latest available inventory information. The inventory is subject to further change.

2.2.1 Stabilization

An estimated 90 cubic meters (approximately 351 containers) of waste may be suitable for stabilization. The waste consists of low-level, contact-handled soil, sludge, liquid, debris, and particulate material. All of the waste streams exhibit the hazardous characteristics of Resource Conservation Recovery Act (RCRA) metals. The predominant waste codes include D004 through D011, F001 through F007, and those listed codes that require similar treatment technology. Any treatment technology used to treat metals must also process organics occurring at very low concentrations to meet applicable Land Disposal Restriction (LDR) treatment standards. Mercury levels do not exceed 260 parts per million. Polychlorinated biphenyls (PCBs), at levels requiring regulation under the Toxic Substances Control Act (TSCA), are not present in this waste. The radioactive component of the waste is categorized as low-level radioactive material. The waste is not categorized as transuranic (i.e., alpha emitting radionuclides with an atomic number greater than 92, half-life greater than 20 years, in concentrations greater than 100 nanocuries per gram) or high-level waste.

2.2.2 Macroencapsulation

An estimated 1465 cubic meters (approximately 1100 containers) of waste may require macroencapsulation and/or an alternate debris treatment method meeting the applicable LDR treatment standards. The waste consists of low-level, contact-handled lead solids, lead-contaminated debris, and mixed waste meeting the alternate debris criteria. The predominant waste codes include D004 through D011 and F001 through F007. Additional codes include D018 through D043 and

those listed codes that need similar treatment technology. Mercury levels do not exceed 260 parts per million. PCBs, at levels requiring regulation under TSCA, are not present in this waste. The radioactive component of the waste is categorized as low-level radioactive material. The waste is not categorized as transuranic or high-level waste.

2.2.3 Thermal/Non-Thermal Treatment

An estimated 20 cubic meters (approximately 37 containers) of waste may require thermal/non-thermal treatment. The waste consists of low-level, contact-handled soil, sludge, liquid, debris, and particulate material. The waste streams are contaminated with organic constituents alone, or organic constituents and RCRA metals. Mercury levels do not exceed 260 parts per million. PCBs, at levels requiring regulation under TSCA, are not present in this waste. The radioactive component of the waste is categorized as low-level radioactive material. The waste is not categorized as transuranic or high-level waste.

2.2.4 Mercury Treatment

An estimated 2 cubic meters (approximately 18 containers) of waste may require mercury treatment. The waste consists of low-level, contact-handled soil, sludge, liquid, and debris contaminated with RCRA constituents and mercury above 260 parts per million. The predominant waste codes include D004 through D011 and F001 through F007. PCBs, at levels requiring regulation under TSCA, are not present in this waste. The radioactive component of the waste is categorized as low-level radioactive material. The waste is not categorized as transuranic or high-level waste.

2.2.5 PCB Treatment

An estimated 13 cubic meters (approximately 111 containers) of waste may require PCB treatment. The waste consists of low-level, contact-handled soil, sludge, liquid and debris. All of the MLLW in this group is contaminated with PCBs requiring regulation under TSCA. The waste may also contain organic constituents alone, or organic constituents and RCRA metals. The predominant waste codes in this category are D004 through D011 and F001 through F007. Additional codes include D018 through D043 and those listed codes that need similar treatment technology. The radioactive component of the waste is categorized as low-level radioactive material. The waste is not categorized as transuranic or high-level waste.

2.2.6 Dioxin and Furan Treatment

An estimated 10 cubic meters (approximately 45 containers) of waste may require dioxin and furan treatment. The waste consists of incinerator ash contaminated with dioxin and furan underlying hazardous constituents (UHCs). The dioxin and furan concentration in the ash ranges from 0 to 300 parts per billion and requires treatment to below 1 part per billion. The radioactive component of the waste is categorized as low-level radioactive material. The waste is not categorized as transuranic or high-level waste.

3. TECHNICAL REQUIREMENTS

3.1 Onsite Waste Characterization, Packaging and Shipping Support

The Subcontractor shall provide properly trained personnel at the INEEL to support BBWI in waste characterization, packaging, acceptance and shipping activities. A description of the Subcontractor responsibilities, training requirements, and qualifications for each activity is presented below.

3.1.1 Waste Characterization Support

Scope - The Subcontractor shall provide trained personnel to support BBWI in nonfield-related waste characterization/classification activities to ensure the waste meets U.S. Department of Transportation (DOT) and state regulations for manifesting, EPA requirements, and the Waste Acceptance Criteria of the subcontracted treatment facility. BBWI may require the Subcontractor to locate at least two full-time, qualified waste characterization personnel at the INEEL.

The Subcontractor areas of responsibility shall include the following items:

- Review and evaluate existing waste stream information.
- Identify sampling requirements.
- Evaluate sampling strategies.
- Evaluate analytical data.
- Assist in the preparation of treatment facility waste profile forms. The onsite Subcontractor personnel shall have the authority to approve the waste profile forms from the INEEL and shall authorize the treatment of INEEL MLLW at the offsite treatment facility.
- Facilitate waste acceptance at the offsite treatment facility.

BBWI areas of responsibility shall include the following items:

- Assist the Subcontractor in reviewing and evaluating existing waste stream information, identifying sampling requirements, evaluating sampling strategies, and evaluating analytical data.
- Prepare and approve sampling and analysis plans and visual inspection plans.
- Prepare and approve safety documentation.
- Perform field activities including gamma spectroscopy scans, sampling, and visual inspections.
- Revise BBWI waste profile forms.
- Prepare and approve Land Disposal Restriction (LDR) forms.
- Prepare treatment facility waste profile forms.

Training Requirements – Subcontractor waste characterization personnel shall have experience/training in sampling and analysis. Subcontractor personnel shall be able to correctly interpret lab reports from sampling and shall know and use project data quality objectives (DQOs) to ensure representative sampling. Subcontractor personnel shall be able to correctly interpret analytical laboratory's sampling reports to validate satisfaction of DQOs.

Subcontractor personnel shall have received Resource Conservation Recovery Act (RCRA) training per 40 CFR, Radiological Protection Training (Radiation Worker I or II as applicable) per DOE Order 435.1, Hazardous Waste Operations Training per 29 CFR 1910.120, DOT Hazardous Materials (HAZMAT) Training per 49 CFR 172.700 through 172.704, and Hazard Communications Training per 29 CFR 1910.1200.

Minimum Qualifications – Subcontractor personnel shall have a Bachelor of Science/Engineering degree in Chemistry, Environmental Science, or a related technical discipline and a minimum of four years of experience in waste management, or an equivalent amount of education and experience. BBWI will determine what constitutes equivalent experience. Experience in Treatment, Storage, and Disposal Facility (TSDF) permitting, radiological characterization, RCRA, and Waste Acceptance Criteria (WAC) regulations is mandatory. The Subcontractor shall provide personnel qualification documentation to BBWI.

3.1.2 Packaging and Shipping Support

Scope - The Subcontractor shall provide trained personnel to support the shipment of waste, in accordance with applicable federal, state, and local laws, and in accordance with applicable BBWI contract requirements and procedures. BBWI may require the Subcontractor to locate at least two full-time packaging and shipping support personnel at the INEEL.

The Subcontractor shall be required to provide support in any of the following areas:

- Prepare shipping papers including the Uniform Hazardous Waste Manifest and the NRC Radioactive Waste Manifest (Low Track) - All shipping papers/plans shall be reviewed and approved by the BBWI Packaging and Transportation Department and the BBWI Waste Certification Official (WCO) before the transporter (waste shipment) is allowed to leave the INEEL boundary. BBWI Packaging and Transportation personnel will approve the waste classification, control manifests, and maintain the EPA record.

- Perform DOT container inspections prior to shipment. The Subcontractor shall visually inspect the exterior of the package for regulatory compliance prior to loading, validate the data on the hazardous materials manifests and other required shipping papers, and verify the materials meet applicable (federal and company) requirements.

- Perform DOT truck/trailer and driver inspections.

- Assign shipping descriptions.

- The majority of INEEL waste containers will be DOT compliant shipping containers; however, it is estimated that approximately 25% of all waste containers will need to be replaced. The Subcontractor may propose an alternative shipping strategy to avoid wholesale procurement of new containers thereby resulting in a lower cost to the INEEL.

- Prepare shipment schedules to support the INEEL Packaging and Transportation Department in obtaining shipment approval from DOE-HQ.

- Submit required shipment notifications and documents to the Warning Communications Center and the applicable Indian Reservations.

- Provide marking and labeling instructions.

- Ensure waste transporter has blocked, braced, and secured all raw waste.

- Act as shipping point of contact for specific facilities or projects.
- Schedule shipments with onsite facility operations personnel and the offsite facility, as needed.
- Perform radiological calculation determinations for MLLW shipments as appropriate.
- Determine the mode, routing, estimated time of arrival (ETA), and special handling requirements.
- Support Pre-Release inspection. The Subcontractor shall support radiological surveys and final inspections.
- Support shipping functions for outbound shipments. Obtain LDR notifications from BBWI waste technical specialist. Secure the driver's signature on the shipping paper and furnish the driver with the appropriate copies or required documents.
- Notify the consignee of the in-progress shipment, name of carrier, and ETA on Type B or greater radioactive materials shipments and poison gas.
- Track outbound shipments, expedite delaying factors, and verify that the shipment was delivered to the consignee.
- Notify appropriate parties of final delivery date as well as any deviation from the ETA.
- Maintain records documenting shipment numbers.
- Maintain a file with delivery information after the shipment arrives at its destination.
- Provide copies of shipping documents to BBWI Packaging and Transportation and waste technical specialists.

Training Requirements – Subcontractor packaging and shipping support personnel shall be trained per 49 CFR. In addition, Subcontractor personnel shall have received RCRA training per 40 CFR, Radiological Protection Training (Radiation Worker I or II as applicable) per DOE Order 435.1, Hazardous Waste Operations Training per 29 CFR 1910.120, and Hazard Communications Training per 29 CFR 1910.1200.

Minimum Qualifications - Subcontractor's packaging and shipping support personnel shall have a Bachelor of Science degree in a technical discipline (Engineering is preferred) and a minimum of four years of experience with waste packaging and shipments, or an equivalent amount of education and experience. BBWI will determine what constitutes equivalent experience.

Packaging and shipping support personnel shall have experience in waste characterization and hazardous waste determinations subject to 40 CFR and Idaho Administrative Code IDAPA 58. Experience in waste determinations subject to Idaho IDAPA 58 is preferred. The Subcontractor shall also have experience in the drafting of container procurements, container QA requirements (such as NQA-1 and 10 CFR 71 subpart H), container testing, and container analysis methodologies. The Subcontractor shall provide personnel qualification documentation to BBWI.

3.2 Transportation of Raw Waste

BBWI will procure the services of a licensed shipping company to transport the MLLW to the Subcontractor's facilities. BBWI personnel will load the containerized MLLW onto the transport vehicle. A radiological survey will be performed by BBWI and Subcontractor personnel on all shipping containers to ensure that there is no radioactive surface contamination on the outside of the containers.

3.3 Waste Acceptance

The Subcontractor shall sign and return all radioactive and hazardous materials manifests to BBWI once the MLLW arrives and is accepted at the Subcontractor's treatment facility. Signed copies of all manifests shall be returned to BBWI within 30 days of departure from the INEEL. The Subcontractor is responsible for accepting the INEEL MLLW in accordance with the Subcontractor's Waste Acceptance Criteria.

3.4 Waste Treatment

The Subcontractor shall treat the INEEL MLLW in accordance with applicable federal, state, and local regulations. Hazardous waste and waste residues shall be disposed of in a RCRA Subtitle C landfill or alternate approved landfill if applicable. Upon the Subcontractor accepting and taking possession of INEEL MLLW, to the maximum extent allowed by law, the Subcontractor will assume title, risk of loss, and all other incidents of ownership to the waste.

3.4.1 Cross Contamination

Before initiating any treatment activities, the Subcontractor shall ensure that all equipment to be used will not cross-contaminate INEEL waste with other customer's waste such that it will adversely affect disposal of the treated waste. If the Subcontractor cross-contaminates and adversely affects disposal of INEEL MLLW, the Subcontractor shall pay all costs for reprocessing, transportation, storage, and handling, and any additional or excess disposal costs incurred as a result of the cross-contamination.

3.4.2 Inspections

The Subcontractor must perform all inspections required at the Subcontractor's facilities to ensure proper execution of treatment, and demonstrate compliance to all regulations required by RCRA and TSCA regulations and radiological materials license conditions.

3.4.3 Waste Shipments

BBWI, with Subcontractor assistance, will coordinate waste shipments to ensure that all waste inventory requirements are met and updated in the Integrated Waste Tracking System (IWTS). The Subcontractor must maintain an accurate inventory of all waste at the Subcontractor's facility, including secondary waste generated during treatment.

3.4.4 Secondary Wastes

Any secondary wastes generated as a result of the waste treatment process shall be the responsibility of the Subcontractor. This secondary waste shall be managed, tracked, treated, and disposed of by the Subcontractor as Subcontractor waste.

3.4.5 Containers

All containers of waste selected for treatment must be emptied of their contents, and the contents (including packing materials) treated and disposed. Empty containers must be cleaned (including removal of all labels and tags) and either processed, packaged, and transported for disposal or reuse, at the discretion of the Subcontractor. Any reused containers must be managed in accordance with applicable laws and regulations. BBWI will not accept liability for any further use of the containers beyond transporting the waste to the treatment facility, nor will BBWI accept return of the empty containers unless a reusable container system is proposed.

All materials used for transport (i.e., pallets, blocking, bracing, sawdust, vermiculite, corncobs etc.) either inside or outside of the waste containers shall be dispositioned in accordance with applicable laws and regulations and at the discretion of the Subcontractor. BBWI will not accept liability for any further use of the transport materials beyond their designated use in transporting the waste to the treatment facility, nor will BBWI accept return of the transport materials.

3.5 Waste Characterization

The Subcontractor shall properly characterize the treated wastes and treatment residuals to ensure that all land disposal requirements and Waste Acceptance Criteria have been met.

Laboratories that the Subcontractor intends to use for analytical services must be approved by the INEEL Sample Management Office (SMO). Inspection/assessment of the analytical facility will include INEEL SMO personnel to complete the onsite portion of laboratory approval.

The Subcontractor must sample and characterize all treated wastes in accordance with a random, statistically valid, sampling and analysis plan to demonstrate that all wastes pass the land disposal restriction treatment standards; meet the disposal facility Waste Acceptance Criteria; and are acceptable for disposal. BBWI reserves the right to audit the certification process that the Subcontractor uses for verifying that wastes meet land disposal restriction requirements, meet the disposal facility Waste Acceptance Criteria, and to ensure that the proper certifying documentation has been completed.

All sampling, sample handling, analysis, data management, and QA/QC procedures must be in accordance with the current revision of the EPA document, SW-846, "Test Methods for Evaluation of Solid Waste, Physical/Chemical Methods," unless applicable state law or permit provisions impose different requirements that are inconsistent with SW-846. The Subcontractor must ensure that all documentation and analytical procedures employed meet applicable requirements of this SOW.

3.6 Transportation and Disposal

The Subcontractor shall arrange for the transportation of all treated MLLW from the Subcontractor's treatment facility to the disposal facility, as necessary. Before the treated MLLW leaves the Subcontractor's facility, the Subcontractor shall verify compliance to all federal, state, and local regulations for waste transportation. The Subcontractor shall provide BBWI with copies of all applicable shipping manifests prior to shipment from the Subcontractor's treatment facility and shall also provide copies of the manifests signed by the

receiving facility within 30 days of receipt at the disposal facility. The Subcontractor shall provide Certificates of Disposal after disposal is accomplished, or Certificates of Destruction, if applicable, within 30 days of disposal/destruction.

4. SAFETY AND HEALTH

The waste characterization labor support services, and the packaging and shipping labor support services that the Subcontractor is providing on the INEEL site are defined as "staff augmentation" type services. Therefore, the Subcontractor is performing all work under the auspices of, and in accordance with the requirements of, BBWI's Integrated Safety Management System (ISMS) and Voluntary Protection Program (VPP).

5. SCHEDULE

Based on projected funding, approximately 90 cubic meters of macroencapsulatable waste and 9 cubic meters of liquid waste must be transported offsite by September 30, 2003. The liquid waste is comprised of flammable liquids, PCB contaminated liquids, and other liquid waste streams requiring thermal/non-thermal treatment for organic contaminants. The remaining volume of approximately 1501 cubic meters of MLLW, included in this SOW, must be transported offsite by September 30, 2004.

The Subcontractor shall support BBWI in meeting the required milestones and shall provide 24-hour a day / 7 day a week support and/or additional staffing, as necessary. BBWI's normal work week is 4 x 10 hours (7:00 a.m. to 5:30 p.m.) Monday through Thursday.

6. DELIVERABLES

The Subcontractor shall provide shipping manifests, onsite waste acceptance notices, certificates of disposal/destruction, and personnel qualification/training documentation, during performance of the tasks described in this SOW.

7. SPECIAL CONSIDERATIONS & MISCELLANEOUS INFORMATION

BBWI, with Subcontractor support, will accurately and completely characterize the MLLW to be treated and disposed. BBWI will apprise the Subcontractor of hazards and risks known to be associated with the waste material. If BBWI receives information indicating that the waste material or components of the waste material present or may present a hazard to a person or the environment not disclosed in the waste profile documentation, BBWI will promptly inform the Subcontractor.

Nonconforming waste (that is, waste not in accordance with the descriptions, limitations, or specifications stated in the waste profile documentation AND not conforming to the Subcontractor's Waste Acceptance Criteria) shall be identified at the INEEL by the Subcontractor. The Subcontractor assumes responsibility for treatment and ultimate disposal of INEEL MLLW prior to shipment to the Subcontractor facility.

8. APPENDICES

Appendix A, Acronyms

9. ATTACHMENTS

Attachment 1 – CD-ROM, Treatment for Disposition of INEEL Mixed Low-Level Waste

Attachment 2 – MLLW Inventory Update

APPENDIX A

ACRONYMS

BBWI	Bechtel BWXT Idaho, LLC
CD-ROM	compact disc-read only memory
DOE	Department of Energy
DOT	Department of Transportation
EPA	Environmental Protection Agency
INEEL	Idaho National Engineering and Environmental Laboratory
ISMS	Integrated Safety Management System
IWTS	Integrated Waste Tracking System
MLLW	mixed low-level waste
NRC	United States Nuclear Regulatory Commission
OSHA	Occupational Safety and Health Administration
PCBs	polychlorinated biphenyls
QA	quality assurance
QC	quality control
RCRA	Resource Conservation and Recovery Act
SMO	Sample Management Office
SOW	Statement of Work
TSDF	Treatment Storage and Disposal Facility
VPP	Voluntary Protection Program
WAC	Waste Acceptance Criteria