EDi Nos. 246, 248, 253

Sandia National Laboratories

21. Beryllium Decontamination – Bldgs. 809, 970, 981 & 983

22. Year Completed Professional Service:	Year Completed (if applicable) Construction:	Sandia National Laboratories Albuquerque, New Mexico
2008	n/a	Contract Role: ☒ Prime Contractor ☐ Subcontractor
CAGE Code: ID1U3		DUNS Number: 61.680.5073

23 a. Project Owner/Customer:	23 b. Point of Contact Name:	23 c. POC Contact Info.:
Sandia National Laboratories/NM P.O. Box 5800 | Mail Stop 1117 Albuquerque, NM 87185-1117	Lorenzo R. Spangler SNL Hazardous Waste & Decontamination Manager	505.284.1181, voice 505.844.3473, fax lspangl@sandia.gov

Key Personnel:

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Chris Edgmon, Sr. Program Mgr.	ABQ Corporate Office, NM	cedgmon@edi-nm.com	505.341.3578

24. (Include scope, size, and cost) **Brief Description of Project and Relevance to this Contract:**

Awarded Price:	+$726,771.98	**Final/Projected Cost:**	$726,771.98
Award Date:	06.05.2007	**Contract No.:**	Master #430969
Period of Performance:	06.05.2007–05.31.2008	**Final or Projected Schedule:**	05.31.2008
Contract Type:	☒ Firm Fixed Price ☐ Cost Reimbursement ☐ Time and Materials ☐ Cost Plus Fixed Fee ☐ Cost Plus Award Fee ☐ Performance Based		
Type of Work Performed:	562910, Environmental Remediation		
% of Work Self Performed:	80%	**% of Work as Subcontractor:**	20%

Contracting Agency & Address:	Contracting Officer:	Contracting Officer Contact Info.:
Sandia National Laboratories/NM P.O. Box 5800 | Mail Stop 1459 Albuquerque, NM 87185-1459	David M. Keiss SNL Procurement Officer	505.884.3708, voice 505.844.1387, fax dmkeiss@sandia.gov

Background

Title 10 CFR 850 establishes the requirements for the development and implementation of a chronic beryllium disease prevention program (CBDPP). The objectives of the CBDPP are to reduce the number of U.S. Department of Energy/National Nuclear Security Administration (DOE/NNSA) Federal and contractor employees currently exposed to beryllium (Be) in the course of their work at DOE/NNSA facilities, minimize the levels of and potential for exposure to beryllium, and establish medical surveillance requirements to ensure early detection that allows for early treatment of the disease.

As part of the CBDPP, DOE/NNSA facilities are required to identify beryllium hazards through a baseline beryllium inventory, and reduce and minimize exposure though decontamination if surface contamination levels exceed 3 mg/100 cm^2.

Sandia National Laboratories, Albuquerque, NM Campus set against the Sandia Mountains

Scope of Work

To date, EDi has successfully completed more than ten major beryllium decontamination projects at Sandia National Laboratories/ New Mexico (SNL). EDi has supported multiple tasks for the SNL Beryllium Program since its inception. These projects included performance of project planning, decontamination, characterization, and waste management—determining efficient decontamination methodologies; coordinating site operations with existing workers; assisting with equipment release protocols; performing beryllium waste management packaging requirements; and establishing employee monitoring reporting and general safety protocols. In addition, EDi has an established beryllium-monitoring program 10 CFR 850 compliant, which has been approved, implemented, and proven successful at SNL.

Wipe-down decontamination efforts in high bay areas of effected buildings.

Building 809

Based on competitive bid price and past performance, EDi was awarded this firm-fixed-price task order. This complex project involved beryllium decontamination services at the 16,437-square foot building in Technical Area (TA) I. This building houses classified, mission-critical testing activities for the U.S. Department of Defense. This effort involved detection and decontamination of beryllium throughout the entire facility including ventilation ducting, air handling units, fixed equipment, and facility systems and components. Adherence to the facility schedule for the completion of all decontamination activities, to include final verification surveys, was paramount to resuming the facility mission.

Building 809 consists of a central high bay, north and south low bays, a machine shop, and a demilitarization area. EDi decontaminated the entire building using proven methods and engineering controls. L- and Q-cleared personnel were used to conduct decontamination efforts in classified areas. The project included continuous coordination of the decontamination work with the occupants of the building to establish safety and prioritize decontamination efforts during the project. In addition, coordination with Building 809 personnel was required to provide escort duties to the decontamination crew for the duration of the project.

EDi removed and packaged all equipment, ventilation systems and ducting, light fixtures, ceiling tiles, and other materials designated for disposal. Decontamination work was performed in either Level D modified or Level C personal protective equipment (PPE), with personal breathing zone monitors used at all times to evaluate airborne beryllium concentrations. EDi decontaminated all walls, floor, equipment, piping, baseboard heaters, utility chases, and horizontal surfaces using wipe methods with a non-hazardous solvent and HEPA vacuums. This process included the intricate cleaning of drill presses, saws, lathes, mills, grinders, electronic test equipment, a forklift, overhead cranes, furniture, benches, and any other equipment and materials. EDi also cleaned 60 six-foot storage cabinets filled with hardware, hand tools, and hand-held equipment using a denatured alcohol wash system to increase the efficiency of the decontamination process for this meticulous task. EDi also removed 500 square feet of beryllium-contaminated carpet from the north low bay area. EDi constructed contamination control barriers (wood frame with plastic sheet barriers) in the north low bay area to prevent the airflow and spread of beryllium-contaminated dust. In the high bay, EDi decontaminated walls, floor, horizontal supports, lighting, and utility piping using man-lifts and ladders to clean surfaces to a height of 30 feet.

EDi supported waste management handling activities of 3,245 yards of beryllium waste generated during the project. Waste PPE, decontamination towels, and contaminated equipment were bagged, labeled, and placed in a lined roll-off waste container and then turned over to SNL Hazardous Waste Management Facility. EDi maintained a controlled Resource Conservation and Recovery Act (RCRA) <90-day waste accumulation area and maintained a waste inventory log , which assisted SNL with disposal requests.

Equipment such as scaffolding, and aerial man lifts were cleaned, sampled, and authorized for release prior to returning to rental companies. EDi stored and sampled wastewater generated during the decontamination process (primarily respirator wash

water). As a final step, EDi generated a comprehensive project report providing a description of methods, areas decontaminated, and full documentation of daily field activities.

EDi successfully completed this project ahead of schedule and with no safety violations or worker accidents. All decontaminated areas passed final verification the first time, which was independently conducted by SNL's Industrial Hygiene Group. In recognition of EDi's superior performance and adherence to schedule, the client provided a written commendation for a job well done.

HEPA Backpack-style Canister Vacuums used to decontaminate designated buildings of beryllium dust at SNL/NM .

Building 970 and 981

This project involved the detection and decontamination of beryllium metal contamination throughout the Buildings 970
and 981. SNL required a very aggressive schedule for the completion of this project due to year-end funding obligations.
EDi prepared the Technical Work Document and Health and Safety Plan to include the submittal and approval of the Beryllium Monitoring Program. This work was executed under EDi's prime contract for Decontamination Services. EDi successfully completed this project ahead of schedule and with no safety violations or worker accidents. All decontaminated areas passed final verification the first time, which was independently conducted by SNL's Industrial Hygiene Group. In recognition of EDi's superior performance and adherence to schedule, the SNL Subcontract Technical Representative (STR) was commended by upper SNL Management for "successfully accomplishing the impossible."

Building 970

Building 970, also known as the Sandia Accelerator Laboratory, houses the HERMES III Accelerator (or the High-Energy Radiation Megavolt Electron Source Accelerator—the world's most powerful gamma-ray simulator, Radiographic Integrated Test Stand (RITS) Accelerator; the Laser Cryogenic Lab, a Shop Area, and the PROTO II Welding and Mechanical Shops.

The HERMES uses technology developed by Pulse Sciences, Inc. and Sandia National Laboratories in the joint Defense Special Weapons Agency/U.S. Department of Energy Linear Induction Accelerator Program. HERMES III has both indoor and outdoor test cells, and is used primarily for simulating the effects of prompt radiation from a nuclear burst on electronics and complete military systems. The RITS accelerator was built as a test bed for research and development of pulsed power drivers and radiographic diodes.

EDi performed project planning and beryllium decontamination services at this 11,637-square foot facility. Specific areas of Building 970 were found to exceed the 10 CFR 850 maximum surface-contamination levels. The initial Industrial Hygiene investigation identified removable beryllium contamination in the high bay area of the south office area, the accelerator high bay, the ceiling (including the bridge crane), the basement, the RITS high bay, RITS ceiling (including crane and observation deck), RITS basement, the Laser Cryogenic Lab, a shop area, and the Proto II Welding and Mechanical Shops.

EDi decontaminated all beryllium-contaminated areas. Decontamination was physically performed in either Level-D modified or Level-C PPE, with personal breathing zone monitors used at all times to evaluate airborne beryllium concentrations. EDi decontaminated all walls, overhead cranes, piping, and utility chases using wipe methods with a non-hazardous solvent and HEPA vacuums. All decontamination activities met DOE regulations in 10 CFR 850, in particular, the housekeeping and release criteria requirements for decontamination and surface contamination levels found in 10 CFR 850.30 and 31. This project was completed on time and within budget.

Building 981

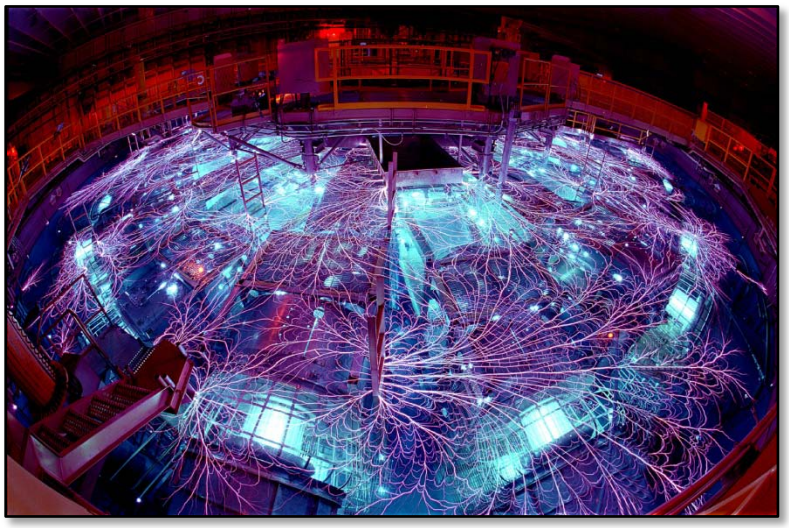
Building 981 houses the Saturn Accelerator—a modular, high-powered, variable-spectrum, x-ray simulation source. The Saturn is used to simulate the radiation effects of nuclear countermeasures on electronic and material components, as a pulsed-power and radiation source, and as a diagnostic test bed.

EDi provided project planning and beryllium decontamination services at this 11,007-square foot facility. Specific areas of Building 981 were found to exceed the 10 CFR 850 maximum surface beryllium contamination levels. The initial Industrial Hygiene investigation identified removable contamination in the high bay area of the Saturn Reactor oil section, piping, conduits, overhead crane original lighting, high bay ceilings, all wall surfaces and associated fixed facility attributes. EDi decontaminated all areas. Decontamination work was executed in either Level D modified or Level C PPE, with personal breathing zone monitors used at all times to evaluate airborne beryllium concentrations.

Using wipe methods with a non-hazardous solvent and HEPA vacuums, ED's decontamination activities met DOE regulations in 10 CFR 850, in particular, the housekeeping and release criteria requirements for decontamination and surface contamination levels found in 10 CFR 850.30 and 31. The project was successfully completed on time and within budget.

Building 983

Building 983 houses the world-famous Z Machine. The Z machine is part of the Pulsed Power Program, which started at Sandia National Laboratories back in the 1960s. Pulsed power is a technology that concentrates electrical energy and turns it into short pulses of enormous power, which are then used to generate X-rays and gamma rays. The Z machine is the Earth's most powerful and efficient laboratory radiation source. Produced in the laboratory, this controlled radiation creates conditions similar to those caused by the detonation of nuclear weapons, which is why from its earliest days pulsed power has been used to study weapons effects.



The Z machine is the Earth's most powerful and efficient laboratory radiation source

The initial Industrial Hygiene investigation identified removable beryllium contamination in the high bay area of Building 983, which included light fixtures, piping, conduits, ducting, overhead crane, high bay ceilings, all wall and floor surfaces, and associated fixed-facility attributes. The facility encompasses approximately 32,044 square feet. EDi decontaminated all areas. in either Level D modified or Level C PPE, with personal breathing zone monitors used at all times to evaluate airborne beryllium concentrations. EDi successfully decontaminated all walls, ceiling surfaces, overhead cranes, piping, utility chases, and all floor surfaces using wipe methods with a non-hazardous solvent and HEPA vacuums. All decontamination activities met the DOE regulations in 10 CFR 850.

The client required a very aggressive schedule for the completion of this project due to a new mission requirement assigned to SNL. EDi prepared the Technical Work Document and Health & Safety Program (HASP), including submittal and approval of the Beryllium Monitoring Program. This work was executed under EDi's prime contract for Decontamination Services. EDi successfully completed this project ahead of schedule and with no safety violations or worker accidents. All decontaminated areas passed final verification the first time, which was independently conducted by SNL's Industrial Hygiene Group. In recognition of EDi's superior performance and adherence to schedule, the SNL Subcontract Technical Representative (STR) assigned additional scope to be completed.

21. SNL/NM Multi-Building Beryllium Decontamination (concluded)

25. Firms/Subcontractors involved with this Project:

	(1) Firm Name	(2) City and State	(3) Role
a.	Aerotek E & E Sean Aiegler sziegler@earotek.com	6700 Jefferson, NE Suite E Albuquerque, NM 87109 505.342.5014	Staff Augmentation
	(1) Firm Name	(2) City and State	(3) Role
b.	Shaw Environmental, Inc. Earl Morse earl.morse@shawgrp.com	5301 Central Avenue,NE Suite #700 Albuquerque, NM 87108 505.262.8800, v • 505.262.8855, fax	Subcontractor
	(1) Firm Name	(2) City and State	(3) Role
c.	Stone Lion Environmental, Inc. Wayne McKenna wmckenna@stonelionenvironmental.com	P.O. Box 44984 Rio Rancho, NM 87174 505.284.4145, v • 505.235.4648, cell	Subcontractor