

Issued on August 14, 2017

**DOE-ID Operations Summary
For the Period September 1- October 1, 2016**

***EDITOR'S NOTE:** The following is a summary of contractor operations at the Idaho National Laboratory Site, managed by the DOE- Idaho Operations Office. It has been compiled in response to a request from stakeholders for more information on health, safety and environmental incidents at DOE facilities in Idaho. It also includes a brief summary of accomplishments at the Site. POC: Danielle Miller, (208) 526-5709.*

Idaho Cleanup Project (ICP)

September 6: Idaho Cleanup Project contractor, Fluor Idaho was notified by a manufacturer of organic vapor high efficiency particulate air filter cartridges that some cartridges in Fluor Idaho's inventory may be defective due to improper packaging. Fluor Idaho personnel performed inspections and testing of their inventory. No defective filters were found. [EM-ID--FID-AMWTF-2016-0007]

September 13: An electrician at the Integrated Waste Treatment Unit was observed potentially entering an arc flash boundary during annual preventative maintenance on the IWTU Uninterruptable Power Supply system without proper arc flash Personnel Protective Equipment. No potential electrical exposure or personnel injuries resulted from this discovery. [EM-ID--FID-IWTU-2016-0002]

September 14: A DOE review of respirator events during the 12 month period of September 2015 through September 2016 identified three events which had occurred since Fluor Idaho assumed the Idaho Cleanup Project (ICP) on June 1, 2016. The events raise concern that initial training on use of some of the respirator used by the Idaho Cleanup Project lacked sufficient emphasis, detail and specificity. [EM-ID--FID-INLPROGM-2016-0001]

Notable Accomplishments: Idaho Site Crews Complete Buried Waste Cleanup

Accomplishment: The Idaho Cleanup Project and contractor Fluor Idaho have completed a significant cleanup accomplishment that further protects the underlying Snake River Plain Aquifer, the primary drinking and irrigation water source for more than 300,000 Idahoans.

Workers recently satisfied a provision of a 2008 agreement among the DOE, state of Idaho and Environmental Protection Agency (EPA) by packaging a total of 7,485 cubic meters of exhumed hazardous and radioactive waste generated at the Rocky Flats nuclear weapons production plant near Denver and buried in Idaho in the 1950s and 1960s. The amount of waste exhumed is equivalent to nearly 36,000 55-gallon drums of material.

Per the agreement, crews will continue to remove radioactive and hazardous waste from a combined area of 5.69 acres of the unlined 97-acre landfill called the Subsurface Disposal Area (SDA) at the Radioactive Waste Management Complex. To date, Fluor Idaho and two previous contractors have exhumed waste from 4.24 acres, and the project remains about two years ahead of schedule. Fluor Idaho will continue exhumation until all of the 5.69 acres are exhumed.

Once exhumed, characterized and repackaged, the waste is shipped out of Idaho for disposal. Following completion of waste exhumation, a soil cap will be installed over the entire SDA.

To complete the 2008 agreement between the DOE, state of Idaho the EPA, just two of nine different areas within the 97-acre SDA are left to be exhumed.

The waste exhumation project, which began in 2005, targets removal of the highest concentrations of solvents and transuranic radionuclides, such as plutonium and americium, buried in the landfill. Currently, crews are 56 percent complete on the eighth area, and are working to remove hazardous and radioactive buried waste within a steel-framed, fabric-sided building. Waste exhumation in that building is expected to continue into 2017. Construction of the building over the ninth and final area within the SDA began in July of 2016 and should be complete in 2017.

Waste exhumation will begin post-construction and is expected to be completed in 2020.

Idaho National Laboratory (INL)

September 1: A buried electrical cable was discovered during excavation activities at the Materials and Fuels Complex. There was not detailed subsurface investigation performed in this area. No personnel were exposed to an energized electrical hazard. Excavation activities were stopped and management was notified. [NE-ID--BEA-MFC-2016-0010]

September 1: The State of Idaho Department of Environmental Quality issued a Warning Letter for two violations noted during an inspection of Materials and Fuels Complex Resource Conservation and Recovery Act permitted facilities in May. The Violations were: 1) the Department of Energy/Battelle Energy Alliance (DOE/BEA) failed to maintain eye wash stations in accordance with manufacturer's instructions, and 2) DOE/BEA failed to comply with the requirement to barcode and track a regulated container in Integrated Waste Tracking System. [NE-ID--BEA-MFC-2016-001]

September 6: While performing functional checks of the Advanced Test Reactor (ATR) confinement system, an isolation damper failed to close. The ATR was in a maintenance shutdown at the time of discovery. The functional testing procedure was exited, and a maintenance work request was initiated. [NE-ID--BEA-ATR-2016-0026]

September 6: The Lobe Power Calculating and Indicating System was declared inoperable at the Advanced Test Reactor after a System Engineer discovered several wires with degraded insulation due to aging. The ATR was in a maintenance shutdown at the time of discovery. A maintenance work request was initiated. [NE-ID--BEA-ATR-2016-0027]

September 6: The Emergency Firewater Injection System at the Advanced Test Reactor was taken out of service due to a failed comparator. The ATR was in a maintenance shutdown at the time of discovery. A maintenance work request was initiated. [NE-ID--BEA-ATR-2016-0028]

September 6: A review of the Specific Manufacturing Capability (SMC) facility Lockout/Tagout (LOTO) program determined that a standard SMC practice had not been followed resulting in a violation of a required element of the LOTO program. [NE-ID--BEA-SMC-2016-0003]

September 7: During confinement door surveillance checks at the Advanced Test Reactor it was discovered that an exit door leading out of the ATR confinement area, would not latch without operator intervention. The ATR Shift Supervisor declared the confinement function of the door inoperable. The ATR was in a planned maintenance outage at the time of failure and the confinement system was not required to be operable. [NE-ID--BEA-ATR-2016-0029]

September 7: Personnel at the Advanced Test Reactor (ATR) determined that an indicator in the chamber flow system had failed. The ATR was in a planned maintenance outage at the time of failure. A maintenance work request was initiated to troubleshoot and repair the flow indicating system. [NE-ID--BEA-ATR-2016-0030]

September 8: Personnel at the Advanced Test Reactor discovered that an Outlet Temperature and Quadrant Differential Temperature logic module had failed. The ATR was in a planned maintenance outage at the time of failure and the affected channels were not required to be operable.[NE-ID--BEA-ATR-2016-0031]

September 13: A Differential Pressure Low alarm at the Advanced Test Reactor was determined to be working improperly. The ATR was in a planned maintenance outage at the time of failure and differential pressure instruments were not required to be operable. As a preventative maintenance measure, plans have been put in place to replace differential pressure transmitters in all four reactor quadrants with latest generation hardware. [NE-ID--BEA-ATR-2016-0032]

September 19: A lockout tagout device was removed from an electrical breaker prior to a work area being secured. The breaker was still in the open/off position and the workers had completed work and were in the process of securing the work area. [NE-ID--BEA-MFC-2016-0012]

September 28: An Idaho National Laboratory employee fell down the stairs in the Center for Advanced Energy Studies (CAES) auditorium. An X-ray was performed and determined that the employee had fractured their foot. The employee was referred to an off-site orthopedic specialist. [NE-ID--BEA-STC-2016-0007]

Notable Accomplishments: Over 300 INL interns bring fresh global perspectives to eastern Idaho: Considering that one of the main challenges facing Idaho National Laboratory is attending to the “talent pipeline” – attracting talented younger people to pursue careers at the U.S. Department of Energy facility – the value of a strategic and engaging summer intern program is obvious.

This summer, nearly 350 students came to INL to do everything from cybersecurity to rare earth extraction to building a process control loop out of junked spare parts. In all, students from 94 universities around the United States and overseas participated as interns.

“The quality of projects is exciting to the students and more employees are wanting to be mentors in broader areas of our laboratory,” said Michelle Thiel Bingham, INL University Partnerships manager.

The annual Intern Expo and Poster Session Aug. 11 at the Energy Innovation Laboratory building had about 100 displays, a dozen more than 2015. “The students not only participate in

developing a technical poster but they showcase their project by developing models, digital and visuals tools, and delivering their projects in oral presentations,” Bingham said.

From the lab’s perspective, it isn’t just about attracting and developing future talent but spreading awareness of what INL has to offer. “That could result in more collaboration with industry, academia and other partners,” Bingham said.

From a researcher’s point of view, interns offer some key advantages, said Tedd Lister, an INL group lead specializing in electrochemistry. He has had summer interns for three years straight. “Having a fresh perspective allows you to think about the research you’re doing,” he said. “You can do things you normally wouldn’t do on projects.”

Lister mentored two interns this summer. “Both of these guys are high level,” he said. “Both had a great summer. They got to do a lot of work in the laboratory, and got to see a lot of the West.” One of them, Mitchell Juneau, an undergrad from the University of New Hampshire, focused his attention on the topic of his poster, “Demonstration of Strategic Materials Recovery from Redundant Electronic Devices.” Juneau worked on developing an electrochemical cell to extract gold and silver from smartphones. For the economy and the environment, it could be important work, he said. “There are 1.4 billion cellphones,” he said. “Even if the gold is on .03 percent, that’s significant.”

The biggest project on display at the expo came from Jed Otto, Jacob Ivie and Brandon Wavra, all electrical engineering undergraduates in Idaho State University’s Energy Systems Technology & Education Center (ESTEC) program. Their mentor, David Almgren, gave them a pile of metal, tubing, tanks and instrumentation and told them to make a process control loop.

“Our budget was zero,” said Wavra. Yet they were encouraged to use surplus or excess parts and equipment and were able to construct a system that circulates water, and is capable of monitoring pressure, level, flow and temperature. “We were excited to see what we could do with all these parts,” Ivie said.

They ended up with an instrument 7 feet long, mounted on a rack with casters. The work did not go unnoticed. “We had the guidance of well-seasoned technicians,” Otto said.

In addition to career perspective, the summer intern program offers opportunities to form new friendships and embark on adventures, taking full advantage of the hiking, fishing and mountain biking opportunities in the region.

“Not only did INL see great benefit from hosting students from across the country, our community took notice as well. More people from the area wanted to offer housing, and many said they enjoyed the energy the students brought to downtown events and local giving programs and volunteer opportunities,” said Amy Lientz, director of INL Partnerships, Engagement and Technology Deployment. She also said that many community leaders can’t wait until next year when the students come back and they hope the lab hosts more.