

Distributed on April 22, 2016

**DOE-ID Operations Summary
For the Period January 1, 2016 –February 29, 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.

Advanced Mixed Waste Treatment Project (AMWTP)

January 13: An air compressor main breaker was found tripped and two line fuses were found blown following unsuccessful post maintenance testing at the Advanced Mixed Waste Treatment Project. It was determined the tripped breaker and blown fuses were a result of an installation error. [EM-ID--ITG-AMWTF-2016-0001]

February 4: The March 2015 work package to replace a broken window on the supercompactor glovebox at the Advanced Mixed Waste Treatment Project did not clearly describe the method by which the hazardous energy sources were controlled for the maintenance portion of the work. While the maintenance personnel were fully aware that Operations had activated the light curtain stopping all mechanical motion in the glovebox, nothing in the work instruction documented that this had occurred prior to maintenance personnel entering the glovebox. The Job Hazards Analysis also required training for operations personnel to use alternative methods but did not address maintenance personnel. [EM-ID--ITG-AMWTF-2016-0002]

February 12: Operations were interrupted in a waste characterization building at the Advanced Mixed Waste Treatment Project when workers observed a propane heater make a loud pop, accompanied by a flash of flame and smoke from the bottom pan. The building was evacuated and the INL fire department was called. The heater was observed via remote camera until the fire department arrived on scene. The INL fire department isolated the propane supply and the heater was placed out of service. There were not any injuries, damage to the building, or waste damage as a result of the event. [EM-ID--ITG-AMWTF-2016-0003]

Notable Accomplishments:

- Final actions were completed by ITG for the transitioned activities to the AMWTP TRU Waste Certification Program from the Central Characterization Project (CCP).
- BWXT Technical Services and Nuclear Energy Group awarded ITG the BWXT Group President's Award for most improved safety performance for calendar year 2015.
- ITG's Infrastructure Improvement Project was featured in the January 2016 edition of the U.S. Department of Energy's EM Update publication. The article included a comment from DOE Environmental Management Assistant Secretary Monica Regalbuto. "This is a special facility within our complex... [and] why AMWTP is so important to the Department's transuranic waste processing program."

Idaho Cleanup Project (ICP)

January 25: A box containing clean HEPA filters fell approximately three feet while being remotely-hoisted into a cell at the Idaho Nuclear Technology and Engineering Center. The filter box came to rest inside of the metal outer container from which it had just been removed. No personnel were in the immediate vicinity of the containers and no personnel injuries or facility damage was experienced. It was determined that the clamps used to secure the wire cable lifting bail to the filter box had failed. [EM-ID--CWI-ICPWM-2016-0001]

Notable Accomplishments:

Electrical Safety Investment Safeguards Employees at INTEC Facility: The Idaho Cleanup Project is using a \$1.8 million DOE investment to safeguard employees from the threat of second- and third-degree electrical arc flash burns.

When an uncontrolled arc occurs, besides intense light and deafening sound, workers can be subjected to extreme heat, flying projectiles, and showered with molten metal. CH2M-WG Idaho, LLC (CWI) aims to reduce such risks from occurring on the Idaho Cleanup Project.

The \$1.8 million investment covers innovative software, development of preventive maintenance work orders for all equipment, and training and equipment to support maintenance and replacement of substation breakers at the [Idaho Nuclear Technology and Engineering Center \(INTEC\)](#).

INTEC was built in the early 1950s to reprocess spent nuclear fuel. After that mission ended in 1992, INTEC became the site's main spent nuclear fuel storage facility and also continued to manage both liquid and solid radioactive waste resulting from its reprocessing operations, still requiring hundreds of megawatts of electricity annually.

Formed in 2008, INTEC Power Operations (IPO) safely operates INTEC's high-voltage electrical system that keeps lights on, equipment operating, and utilities functioning throughout the facility without interruption.

IPO Manager Theresa Axelson said a software program funded by DOE determines arc flash capacities at individual equipment locations based on the electrical system's configuration. The software has been installed for most of INTEC's 13,800-volt outside power distribution system, along with new electrical breakers, but more remains to be done.

"Technology has progressed a lot. This is a very sophisticated way to determine the potential for arc flashes," Axelson said, explaining how the system interprets what could happen in a worst case scenario and then provides the recommended level of personal protective equipment to wear when tackling a project.

Future software enhancements and installation of a new utility control system are anticipated for the rest of INTEC to further enhance safety and efficiency.

The IPO team has completed preventive measures, including the annual cleaning and calibration of breakers, and continues to maintain the complex electrical system.

Idaho National Laboratory (INL)

January 2: A channel on a log count rate instrument at the Advanced Test Reactor failed a routine functional test. Another log count rate instrument was in service as required by the Limiting Conditions for Operations. The failed instrument was placed out of service for repair. [NE-ID--BEA-ATR-2016-0001]

January 4: During an annual inspection, the specific gravity for a battery on a firewater pump at the Advanced Test Reactor was found to be low and out of specification, indicating battery failure. At the time of discovery, the reactor was shut down and defueled. [NE-ID--BEA-ATR-2016-0002]

January 7: A gate at the Materials and Fuels Complex (MFC) experienced a ground fault following an attempt by MFC personnel to open the gate using a manual release mechanism. An investigation determined the fault was the result of a loose power cord to the heater contacting the heating plate. [NE-ID--BEA-MFC-2016-0001]

January 14: Crews at the Transient Reactor Test (TREAT) determined that the condition of a lock-out/tag-out locking device did not adequately prevent the operation of a breaker. When fully closed the locking device did prevent operation of the breaker. However, due to slight play in the locking device a configuration could result in a condition that would allow the breaker to be shut with the locking device in place. [NE-ID--BEA-TREAT-2016-0001]

January 19: A deep well pump discharge check valve was found to be stuck open during testing at the Advanced Test Reactor (ATR). At the time of discovery, ATR was shut down and defueled. [NE-ID--BEA-ATR-2016-0003]

January 20: A fuel oil spill of approximately 6.6 gallons was reported at the Advanced Test Reactor Complex. The spill was the result of a leak from a fuel oil fill line. The leaking fuel line was isolated and clean-up of the spilled oil was commenced. [NE-ID--BEA-ATR-2016-0004]

January 30: A Battelle Energy Alliance subcontracted technician was performing battery maintenance on an uninterruptible power supply (UPS) unit in the Information Operations Research Center, when a tray tipped forward causing batteries to fall to the floor. There was visible damage to one of the battery cases. The technician was able to step out of the way and was not injured. [NE-ID--BEA-STC-2016-0001]

Notable Accomplishments:

Third Way Advanced Nuclear Summit and Showcase: Third Way, in partnership with Idaho National Laboratory, Argonne National Laboratory and Oak Ridge National Laboratory, recently hosted the first Advanced Nuclear Summit and Showcase. INL Director Mark Peters moderated the initial panel of the summit, "Is Advanced Nuclear Technology Real?" Following this session, Peters participated in two additional panels: one that addressed the role of private capital and another that looked at the federal government's role in nuclear innovation. The summit provided an environment where conversation can be focused on the importance of national labs, and the

federal government and industry working together to foster growth in the advanced nuclear energy sector. INL is already supporting this conversation by leading the [Gateway for Accelerated Innovation in Nuclear \(GAIN\)](#) initiative. GAIN will provide the nuclear community with access to the technical, regulatory and financial support necessary to move new or advanced nuclear reactor designs toward commercialization while ensuring the continued safe, reliable and economic operation of the existing nuclear fleet.

Sen. Crapo introduces Nuclear Energy Innovation Capabilities Act: On Jan. 14, Sen. Mike Crapo, R-Idaho, introduced a bipartisan bill, the Nuclear Energy Innovation Capabilities Act, to provide a path forward for improved partnerships between the national labs and the private sector in developing advanced nuclear reactor technologies. The NEICA requires the U.S. Department of Energy (DOE) to carry out a program enabling the testing and demonstration of new reactor concepts proposed by nuclear innovators in the private sector. As the nation's lead nuclear lab, INL is expected to be home to such a demonstration facility. The DOE would also report to Congress on the mission need for a versatile neutron source, including fast neutron spectrum irradiation capability. The Crapo bill – co-sponsored by Sen. Jim Risch, R-Idaho; Sen. Sheldon Whitehouse, D-R.I.; and Sen. Cory Booker, D-N.J. – directs DOE to create a gateway for entrepreneurs and investors to use the nuclear capabilities of the national labs. The U.S. Senate approved the legislation on Jan. 28.

Grid Modernization Initiative brings 15 new projects to INL: INL will lead several projects over the next three years as part of the \$220 million Grid Modernization Initiative recently announced by the U.S. Department of Energy. INL researchers are leading four projects that received DOE funding, and will collaborate with other national laboratories on 11 others. The INL-led projects are: 1) Smart Reconfiguration of Idaho Falls Power distribution network; 2) Systems Research Supporting Standards and Interoperability; 3) Diagnostic Security Modules for Electric Vehicles to Building Integration; and Weather Data to Improve Capacity of Existing Power Lines.

Idaho National Laboratory supports Your Future in Technology program in eastern Idaho: INL's Partnerships, Engagement and Technology Deployment Directorate is supporting the Your Future in Technology (YourFIT) program through a Technology Based Economic Development (TBED) grant. YourFIT is designed to provide high school students the opportunity to learn more about high-tech, high-wage jobs requiring only a two-year degree or certification. The program will help build INL's talent pipeline in eastern Idaho by revealing achievable education and training opportunities regionally. INL speakers will participate in seven innovative, hands-on experiential learning sessions in the region this spring.