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**DOE-ID Operations Summary  
For the Period December 1, 2015 –December 31, 2015**

*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 Operations Office (DOE-ID)***

December 17: The Idaho Department of Energy Office of Environmental Management received a Notice of Violation (NOV) from the United States Nuclear Regulatory Commission (NRC). The United States Department of Energy is the Licensee for three NRC licensed facilities. [EM-ID--GOID-ID\_DIRECT-2015-0002]

***Advanced Mixed Waste Treatment Project (AMWTP)***

Nothing to report

***Notable Accomplishments:***

- ITG Industrial Safety and Industrial Hygiene personnel supported the Safety and Health management at the Hanford Plutonium Finishing Plant (PFP) with setup of their Level B suits including vortex coolers, exhaust hoses, and regulator management. ITG has worked with PFP setting up similar processes and equipment for entering highly radioactive waste cells. This working relationship has provided benefits to both companies in working through similar issues.
- A waste verification surveillance was performed by representatives from the Nevada National Security Site (NNSS) of the ITG macrobag process and associated characterization and processing of the Mixed Low-Level Waste product drum waste stream. No issues or findings were identified during this, or previous surveillances.
- DOE presented ITG with a Commendation for Exceeding Fiscal Year 2015 Strategic Sourcing Initiative (SSI) Goals. The SSI program's goal is to save taxpayers money by using various purchasing strategies established by the EM Supply Chain Management Center. Adhering to these strategies, the Department set a Fiscal Year 2015 savings goal for ITG of \$142K, which ITG surpassed by 34.4%, achieving a savings amount of \$191K. Performance was highlighted for the use of DOE's eSourcing tool, increasing savings from \$6K to \$130K.

### ***Idaho Cleanup Project (ICP)***

December 7: Upon opening an Experimental Breeder Reactor II (EBR-II) fuel bottle in the Fuel Conditioning Facility (FCF) at the Materials and Fuels Complex (MFC) crews discovered that the fuel bottle sent to FCF from the Idaho Nuclear Technology and Engineering Center contained more fuel pins than indicated in the historical fuel bottle loading documents. It was determined that the discrepant condition could lead to the current safety basis being deemed inadequate. The bottles were originally loaded with the EBR-II fuel in the late 1970s at MFC and shipped to INTEC. [EM-ID--CWI-FUELRCTR-2015-0003]

#### ***Notable Accomplishments:***

- CWI Waste Management crews processed 36 of 36 waste boxes of contact-handled transuranic waste from the Advanced Mixed Waste Treatment Project.

### ***Idaho National Laboratory (INL)***

December 7: Crews discovered an Experimental Breeder Reactor II (EBR-II) fuel bottle contained more fuel pins than indicated in the historical fuel bottle loading documents. The fuel bottle had been received from the Idaho Technology and Engineering Center and was opened in the Fuel Conditioning Facility (FCF) at the Materials and Fuels Complex. The increased number of elements in the one bottle exceeded the total fissile limit allowed for a bottle listed in FCF criticality safety procedures. The bottles were originally loaded with the EBR-II fuel in the late 1970s at MFC and shipped to INTEC. [NE-ID--BEA-FCF-2015-0001]

December 10: During diesel firewater pump battery quarterly inspection at the Advanced Test Reactor it was determined that a battery bank had a low specific gravity and elevated temperature. The affected firewater pump was removed from service. [NE-ID--BEA-ATR-2015-0046]

December 10: An employee at the Advanced Test Reactor opened an electrical cabinet without following the hazardous energy control program. At no time was the operator exposed to hazardous energy. [NE-ID--BEA-ATR-2015-0047]

December 14: A worker at the Materials and Fuels Complex (MFC) inadvertently left the key to his personal Lockout/Tagout (LOTO) lock in the lock, which had been hung on the LOTO lock box. [NE-ID--BEA-MFC-2015-0005]

December 16: A fuel hose from the power take off pump on a diesel fuel delivery truck over pressurized the fuel line and ruptured spilling about 1000 gallons of diesel to the asphalt at the Central Facilities Area. Workers contained the diesel fuel to asphalt and concrete, prevented any diesel discharge to drains, and stopped the leak. The contained diesel was pumped back into drums, and crews then applied top soil to absorb any residual liquid. The diesel fuel did not reach

soil, groundwater, or surface water. The fuel truck has been placed Out of Service with a "Hold Card" pending engineering evaluation. [NE-ID--BEA-CFA-2015-0006]

December 16: Personnel at the Space and Security Power Source Facility were performing thermal vacuum chamber operations in which a thermal control unit, fed by liquid Nitrogen was operating when personnel noted liquid Nitrogen leaking from piping. Personnel immediately actuated the E-stop, left the room, and isolated the liquid Nitrogen dewars outside of the facility. The remainder of the facility was also evacuated as a precaution. [NE-ID--BEA-SSPSF-2015-0001]

***Notable Accomplishments:***

**INL research partnership leads to discovery of new oxidation technique that could help resolve spent fuel challenges:** A cooperative research partnership between Idaho National Laboratory and university researchers has yielded a new oxidation technique that could help greatly improve technologies available for recycling spent nuclear fuel. Working with colleagues at the University of North Carolina (UNC) Chapel Hill campus, INL chemists have discovered a way to oxidize americium into a form that makes it easier to separate from spent fuel. The technique used by UNC and INL chemists uses special electrodes that collect the americium and then electrolytically oxidize it to a form that is easier to separate. The technique also avoids the need for hazardous reagents often used in chemical oxidation methods.

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**Fiscal Year 2015 INL Economic Summary, Research and Development Report now available:** As one of the largest employers in Idaho, INL has a significant impact on the state's economy. The economic impacts identified in the report include INL operations managed by Battelle Energy Alliance only and do not include other DOE contractors, the DOE itself, or the Naval Reactors Facility at DOE's Idaho site. Combining INL operations with additional indirect and induced impacts, DOE's Idaho site adds nearly \$1.6 billion to the state's total economic output and almost 9,300 positions to the Idaho job market. Other important impacts include the following: INL's total output increased by \$170 million from FY 2014 to FY 2015, a 12 percent increase; INL directly employed 3,771 workers in Idaho while secondary effects in the state accounted for an additional 5,522 jobs for a total of 9,293 jobs—an 8 percent increase from FY 2014; INL brought money into Idaho and generated value-added output of nearly \$942 million; the average base salary of an INL employee in FY 2015 was \$88,635, up from \$87,542 in FY 2014; INL increased personal income in the state by nearly \$703 million; and BEA's corporate office contributed \$622,500 to charitable giving.

**ATR employees recognized for best process improvement:** A team of Advanced Test Reactor (ATR) Complex employees was awarded the prize for INL's FY-2015 Top Game-Changer. To encourage great ideas from great people, INL's Expedition to Excellence team organized and presented the Game-Changer Tournament. As voted by laboratory employees, the best process

improvement was for the use of Reprorubber® nuclear-grade putty to evaluate scratches on ATR fuel elements. The team developed a process that incorporates the use of Reprorubber® in the inspection of fuel elements to determine if they meet standards to be used again. The new technique for determining the extent of damage is much more accurate than a visual inspection and recently saved more than \$1.8 million when 17 ATR fuel elements were kept from the scrap heap to be used again in the reactor. Reprorubber® is a self-curing, pliable epoxy used to capture impressions of scratches on the exposed surfaces of highly radioactive, irradiated ATR fuel elements previously loaded in the reactor core. It can be used under eight feet of water – reducing radiation exposure – and is effective at capturing useful dimensional information, allowing direct visual comparison to known acceptance criteria in the evaluation of scratched fuel elements so that they may be used again in the reactor.

**INL offers first-of-its-kind training to New York state emergency responders:** Instructors from INL’s Homeland Security Emergency Response and Readiness group recently taught first responders about current radiological materials threats and effective response measures. INL presented the advanced “Radioactive Materials Response Training” pilot course at the State Preparedness Training Center (SPTC) in Oriskany, New York. This training course was tailored exclusively to New York state and met state preparedness objectives. The SPTC was chosen for the rollout of the pilot course because of its unique training attributes, including the CityScape training facility. This facility supports a realistic urban training environment to test course participants’ knowledge and ability to respond and mitigate radiation-related events. The three-day course brought together 11 technical experts from the Department of Defense – Civil Support Teams from New York City and Scotia, the state Department of Health, the state Department of Environmental Conservation, New York State Police, and the New York City Police Department.