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**DOE-ID Operations Summary
For the Period May 1, 2015 – May 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.

Advanced Mixed Waste Treatment Project (AMWTP)

April 25: A maintenance technician was struck by a surveillance camera and camera cover when they fell to the floor during replacement activities in the north box line of the Treatment Facility. [EM-ID--ITG-AMWTF-2015-0006]

Notable Accomplishments:

- The Idaho Treatment Group and DOE-Idaho recently signed a partnering agreement that helps to reinforce the basis of the working relationship between the two entities through the end of ITG's current contract. ITG continue to work with DOE-ID to re-evaluate low benefit work to improve operational efficiencies.
- Employees working for the mixed-low-level waste program are cross training are MLLW program personnel to support the transuranic waste program. These activities assist ITG in ensuring that its workforce is being properly utilized to achieve efficient production.
- To improve on legacy waste processing ITG is working on a campaign to characterize "unknown" waste. A year ago, the inventory contained approximately 7,000 "unknown" containers; the project has narrowed that down to about 3,000 containers. "Unknown" waste is waste within a container to which the specific characteristics are not known, due to the lack of Acceptable Knowledge, or correct historical data.

Idaho Cleanup Project (ICP)

May 12: A Safety Analyst at the Radioactive Waste Management Complex discovered that calculated values in a safety document were not consistent with the accompanying Engineering Design File. The Safety Analyst identified an administrative error in transferring consequence analysis results to the safety document. A full review of all values showed that this scenario was the only incidence of incorrect numbers. [EM-ID--CWI-RWMC-2015-0001]

May 14: The facility manager at the Integrated Waste Treatment Unit determined that additional analysis of existing safety processes was needed. Current analyses may not account for the possibility of process material being transferred from process vessels within the confinement area to the sample cell during normal operations. The process confinement area protects workers from exposures to radioactive and hazardous materials in the event of a loss of primary

confinement. The facility was undergoing a maintenance outage at the time of the discovery, and facility conditions were safe. The process is under review. [EM-ID--CWI-IWTU-2015-0002]

May 20: The facility manager at the Integrated Waste Treatment Unit determined further analysis of existing safety processes was needed, when it was determined that the process used to calculate confinement area temperature used in the structural analysis may not be appropriate. The facility was undergoing a maintenance outage at the time of the discovery, and facility conditions were safe. The process is under review. [EM-ID--CWI-IWTU-2015-0003]

Notable Accomplishments: Success in Addressing Challenging Waste Leads to More Cleanup Work: Success last year in treating and packaging 6,000 drums of radioactive and hazardous waste left over from the Cold War weapons program has spawned additional cleanup work for CH2M-WG, Idaho (CWI).

CWI crews recently began treating and repackaging 719 additional drums of sludge material from the Advanced Mixed Waste Treatment Project to enable the waste to eventually be shipped offsite for permanent disposal.

Generated during nuclear weapons production decades ago at the now-closed Rocky Flats Plant near Denver, the waste was sent to Idaho where it was stored on a pad and covered with soil for more than 30 years. In its present form, the waste can't be shipped for disposal because it contains small amounts of liquid from sludge containing both carbon tetrachloride and plutonium that first needs to be removed.

This challenging waste is part of the 65,000 cubic meters of transuranic material that is scheduled to be shipped out of state in accordance with the 1995 Idaho Settlement Agreement between the DOE and state of Idaho.

Crews are opening, treating, and repackaging waste from about 10 drums per day. The drums are being opened within a secondary-containment area by specially designed excavators where operators wear protective clothing with supplied air.

The waste treatment and repackaging effort is taking place within a soft-sided building constructed over the waste disposal cell known as Pit 9, which CWI remediated in 2011, nine months ahead of schedule and millions of dollars under budget. CWI repurposed the Pit 9 waste exhumation facility for treatment of other waste, ultimately saving the DOE millions of dollars over the cost of constructing a new storage and treatment building.

In late 2012, CWI began treating 6,000 drums of sludge-bearing transuranic waste in the building and completed the project in a little over 18 months.

Idaho National Laboratory (INL)

May 1: A discharge check valve failed to shut on a primary coolant pump during check valve response surveillance activities at the Advanced Test Reactor. Primary coolant pump check valves on non-isolated pumps are required to be operable when the reactor is fueled. At the time

of discovery ATR was in pressurized shutdown and defueled. A maintenance work request was submitted to troubleshoot and repair the valve. [NE-ID--BEA-ATR-2015-0020]

May 9: A flow isolation valve failed shut during a flow calibration check at the Advanced Test Reactor. A maintenance work request was submitted to troubleshoot and repair the valve. [NE-ID--BEA-ATR-2015-0022]

May 19: During material shipment activities, nuclear safety personnel at the Hot Fuels Examination Facility determined that the amount of material stored in the HFEF may exceed the amount allowed by the nuclear safety requirements for the facility. The material is packed for shipment and in a safe configuration. Further evaluation will be performed by the Nuclear Safety Organization. [NE-ID--BEA-HFEF-2015-0002]

May 22: During post-maintenance testing at the Advanced Test Reactor, it was determined that an instrument used to calculate coolant system levels had been installed incorrectly. Alternate instrumentation was used calculate coolant levels. A maintenance request was submitted. ATR was not operating when the issue was identified. [NE-ID--BEA-ATR-2015-0023]

May 22: One of two count rate instrument recorders was determined to be inoperable at the Advanced Test Reactor, due to a broken wire. In accordance with operating requirements, the second count rate instrument remained in service at all times while the facility was in pressurized standby. [NE-ID--BEA-ATR-2015-0024]

May 23: A confinement door at the Advanced Test Reactor was found to not latch closed. The ATR was not operating at the time of discovery. Confinement was not required to be Operable. [NE-ID--BEA-ATR-2015-0025]

Notable Accomplishments: Neutron Radiography Reactor successfully restarts- An important and unique research tool at Idaho National Laboratory — the Neutron Radiography (NRAD) Reactor — was restarted recently after the completion of a nearly 14-month overhaul-and-upgrade project. This important milestone will enable final calibration of key components and a resumption of radiography.

NRAD is a 300-kilowatt TRIGA research reactor that first went online at INL in 1977. (TRIGA stands for Training, Research, Isotopes, General Atomics.)

“The overhaul project was essentially a life-extension for NRAD that ensures we’ll be able to sustain its capabilities for several more decades, with greater reliability and capacity,” said Mark Henry, director of MFC’s Post-Irradiation Examination facilities. “The NRAD operations team has done an amazing job.”

NRAD provides INL researchers with a critical non-destructive tool for conducting post-irradiation examination of nuclear fuel and material samples. Neutron radiographs can significantly reduce the time and cost for conducting examination of irradiated samples by allowing researchers to see inside samples to evaluate their performance and identify features or flaws that may require further study.

A second, longer beam line to a second radiography station will be returned to operation in the near future, further expanding the capability NRAD provides to include radiography of non-irradiated specimens. The second radiography station can accommodate larger diameter and longer specimens.

The overhaul and upgrade project included a complete replacement of the control panel with a modern digital system, replacement and upgrade of most of the sensors used for operation of the reactor, replacement of the control rod drive systems, and an update of the reactor's Documented Safety Analysis — the safety documentation that governs use of the reactor and defines its operating limits. The overhaul builds on previous improvements — including a conversion to low-enriched fuel in 2010 and a core expansion in 2013 to increase operational durations, providing more time to support radiography for users.

“The new control systems, sensors and instruments give us a much clearer picture of how the reactor is operating,” said Fred Gholson, NRAD operations manager. “It feels great to have it back online and ready to support radiography again.”

Further upgrades are planned to continue to expand INL's neutron radiography capabilities, including a conversion to higher-resolution digital image processing, computed and digital radiography, and 3-D tomography.