DOE-ID Operations Summary
For the Period April 1-April 31, 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)

Notable Accomplishments:

- The Infrastructure Improvement Project to update equipment in the Treatment Facility made significant progress. Improvements included the replacement of obsolete variable frequency drive units that control ventilation fans; a new camera added in the boxline to allow operators to see down into silver overpack drums; and installation of a new lift that makes it safer for employees to work on piping, lighting, and other equipment located near the boxline’s 30 foot ceiling. Two new BROKK robotic arms were ordered and on site by the end of the performance period.

- Two required treatability studies through EnergySolutions for contaminated soils were completed. The treatability studies determined that a portion of the soil inventory, approximately 700 drums, can be permanently disposed at an off-site Treatment Storage Disposal Facility operated by EnergySolutions near Clive, UT.

Idaho Cleanup Project (ICP)

April 5: A vendor authorized inspector at the Integrated Waste Treatment Unit identified that heat exchanger tubes from a heat exchanger required repair. The heat exchanger tubes were removed and shipped to the vendor for repair. [EM-ID--CWI-IWTU-2016-0002]

Notable Accomplishments:

- EM officials shared lessons learned from the 2014 Waste Isolation Pilot Plant underground fire and radiological release with the Nuclear Energy Agency (NEA) Division of Radiological Protection and Radioactive Waste Management in a seminar in Paris recently. Seminar participants sought to further strengthen safety culture and essential management and regulatory elements for continuous safety enhancement throughout the lifetime of nuclear waste management facilities. EM officials included Assistant Secretary Monica Regalbuto, Acting Associate Principal Deputy Assistant Secretary Frank Marcinowski, Carlsbad Field Office Recovery Communications Manager Tim Runyon, DOE Accident Investigation Board Chair Ted Wyka and EM Policy and Strategy Senior Advisor Elizabeth Lisann. NEA officials included William Magwood, Michael Siemann, and Gloria Kwong. Punam Thakur, with Carlsbad Environmental Monitoring Research Center, also participated in the seminar.
April 4: A package shipped to the INL from an off-site non DOE facility containing radioactive material was inadvertently opened in an administrative area located in the Engineering Research Office Building. A radiological controls supervisor and radiological controls technician surveyed the package, personnel, and office area for contamination. No contamination was found. The package was taken to a Radioactive Materials Area. [NE-ID--BEA-INLLABS-2016-0001]

April 10: While responding to a series of smoke alarms at the Research and Education Campus, it was discovered that a movable rack mounted server equipment cabinet in one of the electronics labs had caught fire and then self-extinguished. There was no active fire or smoke coming from the equipment at the time of discovery. The cause of the fire in the cabinet appears to be the failure of a non-industrial fan that had been mounted inside the cabinet to aid in heat removal from the equipment. [NE-ID--BEA-INLLABS-2016-0003]

April 7: An experiment storage rack at the Advanced Test Reactor was damaged during the movement of a Test Train Assembly Station (TTAS) from the canal. While the TTAS was being lifted it caught on the experiment storage rack used to mount the TTAS in the canal. Further movement of the TTAS was stopped and the experiment storage rack was inspected for damage. [NE-ID--BEA-ATR-2016-0006]

April 14: A Lock Out/Tag Out (LO/TO) device was damaged during breaker upgrade work at the Advanced Test Reactor. Following efforts to replace the LO/TO device and tags, the contractor discovered the tags were installed incorrectly. All work was halted and it was verified that the facility was in a safe condition. [NE-ID--BEA-ATR-2016-0008]

April 19: A battery bank for a Plant Protective System (PPS) at the Advanced Test Reactor was declared out-of-service due to a loss of power. The ATR was shut down and defueled and the PPS channel D battery was not required to be operational at the time of this event. [NE-ID--BEA-ATR-2016-0009]

April 19: A valve at the Advanced Test Reactor came apart while performing a valve lineup procedure. The procedure was halted and valves upstream and downstream of the failed valve were shut to ensure isolation. The ATR was in a planned maintenance outage and the system was not required to be operable at the time of this event. [NE-ID--BEA-ATR-2016-0010]

April 26: A firewater pump at the Advanced Test Reactor was determined to be inoperable pending investigation and operability testing. The ATR was in a planned maintenance outage at the time of failure and one of two of the facility’s firewater pumps was operable. [NE-ID--BEA-ATR-2016-0011]

Notable Accomplishments:

Graphic arts to globetrotting, Tyacke helped secure nuclear fuel worldwide: Growing up in Lemhi County, Idaho, Mike Tyacke learned to corral cattle at an early age, but if you had told
him 50 years ago that his career would involve rounding up something a lot different — spent nuclear fuel from every corner of the globe — he might have wondered what you were talking about.

At age 66, Tyacke retired this May from Idaho National Laboratory, where he had worked for more than 40 years. He has flown millions of miles to every continent save Antarctica and South America, overseeing the transport of spent nuclear fuel and highly enriched uranium to make the world safer. He estimates he has 2.5 million Delta SkyMiles. He has forged friendships in the former Soviet Union and the People’s Republic of China. In the United States, he made arrangements for Three Mile Island’s damaged reactor core to be brought to Idaho for research that has resulted in enhanced reactor safety.

“I was always a sponge for knowledge,” he said. “It was fun to be around people who were smarter than I am. It’s been a great opportunity.”

Tyacke came to what was then called the Idaho National Engineering Laboratory in October 1975 as a graphic artist. After a stint in Vietnam, where he was a military police officer, he had gone to University of Idaho and received a bachelor’s degree in fine arts. He was one of four graphic artists hired that fall, in the days before desktop publishing, when slides for presentations were hand lettered. Before long, however, he found himself taking on more project management duties — and enjoying it. “I was never much of an artist to begin with, but I discovered I liked engineering and logical, systematic thinking. I like working that way. It was easy for me to be programmatic.”

Tyacke eventually transitioned to the low-level waste program. At the time, INEL was the R&D lab for both the Nuclear Regulatory Commission and the commercial nuclear power industry. At projects like the Power Burst Facility, Loss-of-Fluid Test Reactor and Semiscale, the guiding principle was to push materials to extremes in controlled circumstances and document the results, which were used to validate reactor accident codes that enhance reactor safety.

After the 1979 Three Mile Island accident near Harrisburg, Pennsylvania, the data to understand what happened resided at INEL. By studying the core debris and comparing it with the lab’s data, scientists could understand the cause and recommend safety enhancements. “Idaho was a shoo-in,” Tyacke said. Congress appropriated $180 million, and the work got started. “They had to get pieces of the core to find out what happened. At the very end, they could tell you exactly what happened.”

Tyacke was assigned the job of planning, scheduling and eventually managing TMI core debris shipments to the Department of Energy’s Idaho site. For nearly two-dozen shipments, he had to coordinate with the National Transportation Safety Board, states, railroads and assorted other agencies. “What this allowed me to learn was operations,” he said.

Once the TMI project was finished, Tyacke’s attention and expertise were directed toward coordinating spent nuclear fuel shipment from West Valley, New York, the largest single shipment of commercial spent nuclear fuel to be made in the United States at that time. The effort demonstrated that such shipments could be made safely and securely, setting the stage for significant R&D programs to improve nuclear energy safety and reliability. The 15-year West Valley shipment process wrapped up in 2001, Tyacke said.
After the terrorist attacks of Sept. 11, 2001, the presence of highly enriched uranium around the world jumped to the top of the list of national security concerns. Under the Atoms for Peace program started by President Eisenhower in the mid-1950s, scientific reactors all around the world were using uranium sufficiently enriched to be considered bomb grade. Concerned about such material falling into the hands of terrorists, DOE consulted with the U.S. State Department to start the Foreign Research Reactor Spent Fuel Acceptance program. The goal: help nations like Taiwan, South Korea, Indonesia and Pakistan swap such material for low-enriched fuel. Tyacke was involved in site assessment, qualifying fuel assemblies, staging, shipment and disposition.

When that was finished, his expertise was called on for a similar effort in former Soviet Bloc countries — the Russian Research Reactor Fuel Return Program. He has been to several former Soviet republics and Eastern Bloc nations, and everywhere from Poland to Vietnam to Kazakhstan. The last program Tyacke has lent his institutional knowledge to was the Miniature Neutron Source Reactor program, a Chinese initiative under which small reactors were built in Ghana, Nigeria, Pakistan, Syria and Iran.

In all the travel he’s done, and despite cultural differences, he has gained tremendous respect for Dr. Igor Bolshinsky, the Russian Program lead, and counterparts like Poland’s Wlodzimierz Tomczak. Their work is detailed in a section of “The Partnership,” Philip Taubman’s 2012 book. Getting ready to head home and live the rancher’s life in Salmon, Tyacke looks at the lab as it is now with a sense of wonder. “We’re getting all those brilliant young people who are incredibly qualified,” he said. “I doubt I could get a job here today.”