



# Benchmark

## F&SS News and Progress

May-June 2018

## Just scratching the surface, unearthing surprises

Subsurface investigators help locate buried utilities, buildings

By Paul Menser

Considering that it is home to nearly 70 years' worth of foundations poured and pipes and service lines laid, it should come as no surprise that the U.S. Department of Energy's 890-square-mile Idaho Site is full of hidden surprises that are barely underground.

As Idaho National Laboratory's two subsurface investigators, Rob Meikle and Fred Waymire travel to every corner of the desert Site – as well as the lab's buildings in Idaho Falls on the Research and Education Campus – to find what may be waiting for anyone seeking to dig a trench or open up a wall.

"They're a two-man show, and they're all over INL," said their boss, Project Services Manager Randy Strong.

Basically, anyone who wants to build something new or alter anything that exists goes to INL's Nucleus

home page to fill out a subsurface investigation request, an online form. Depending on urgency, the job is scheduled. Depending on the scope of work, jobs can take as little as an hour or as many as 400.

"It's not a fast process, it's a thorough process," Strong said.

Although there have always been procedures for characterizing ground before it is dug, subsurface investigator didn't become an actual position at INL until Battelle Energy Alliance became the lab's

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At left, Todd Leavitt, INL Fire Department planning officer, and Capt. Jeremy Ropp observe Academy candidate Katlynn Hudson during the timed combat challenge. Right, firefighter Bart Nelson monitors a new hire candidate as he completes the hose drag and shows water.

## INL Fire Department rolls to Facilities & Site Services

By Paul Menser

Regardless of who's in charge of the organization, solid relationships are the key to effective operations, says Eric Gosswiller, chief of the Idaho National Laboratory Fire Department.

Oversight of the department shifted this spring from Lab Protection to Facilities and Site Services, but the firefighters and emergency medical technicians (EMTs) are unlikely to notice anything in the day-to-day operations.

Much is changing with the department, which dates back to the lab's early days in the 1950s. The switch from Lab Protection to F&SS coincided with the retirement of Tom Middleton, Lab Protection director.

"He had a passion for our department and our people," said Gosswiller, who has been fire chief for the last 10 years. "I have a heavy appreciation for the important work Laboratory Protection delivers. It is a priority for me to ensure this split in no way impacts the important collaboration between my team, Emergency Management, Emergency Communications and the Protective Force."

F&SS Director Carlo Melbihess and Chief Operating Officer Ed Anderson have a similar desire to see the department equipped to meet the challenge of protecting the lab. Anderson has past experience as an emergency director. "He knows what it's like for people who are in difficult situations, who have to

make critical decisions fast," Gosswiller said.

The department's response to an April 11 incident at the Radioactive Waste Management Complex is the most recent evidence of the value of relationships and collaboration. When a fire alarm went off late that night at the Accelerated Retrieval Project (ARP 5) containment structure, teams responded immediately from Station 1, across U.S. Highway 26.

The source of the alarm was determined to be a ruptured drum, causing high levels of contamination in the containment structure. The first step was to isolate the drum from other drums in the area, confirm confinement was protected, then stabilize

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FACILITIES AND SITE SERVICES

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# Firefighters

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the situation for teams from Fluor Idaho, the Idaho Cleanup Project Core contractor that operates RWMC, to take over.

“Our team did exactly what they were trained to do,” Gossweiler said. “There weren’t a lot of cues or indications as to the significance of the hazard when they arrived on scene. They demonstrated good situational awareness and decision-making to protect themselves.” In the weeks that followed, INL is supporting Fluor with its investigation and collaborating on lessons-learned evaluation.

The incident also validated the effectiveness of INL Fire Department training, most notably training associated with radiological response. The fire department teams regularly with Battelle Energy Alliance RadCon workers to improve response capabilities.

All across INL, longtime employees are retiring, passing the baton to a new generation. In some ways, the INL Fire Department is a little ahead of the curve. More than half the 85-person department has turned over in the past six years, Gossweiler said. Thirteen new firefighters – 10 men and three women – started their 22-week training academy on May 14 and should be ready to go onboard in October.

The makeup of the group – some local, some from as far away as southern California – reflects a lot of diversity, but they all have a few things in common. To qualify, an applicant has to have at minimum an EMT license and two years’ experience at the volunteer level.

About 400 people applied for the positions. That was whittled down to 105 interviews. Candidates were then subjected to the Firefighters Combat Challenge, and after a second round of interviews, the 13 finalists were selected. “We hired thirteen highly capable new members to our team and I’m excited about the great things they will do in the future.” (See sidebar story: Fired up and ready to go.)

Gossweiler emphasized two things that are of great importance to the department – training and mutual aid agreements with cities and counties surrounding INL.



**During the Firefighter Combat Challenge, a potential new hire candidate begins his ascension up the five flights of stairs at the fire tower, carrying 45 pounds of fire hose.**

While incidents like the one at RWMC require intense focus and quick action, the INL Fire Department doesn’t get the volume of calls that a city department might get.

“We’ve got to be ready, which means we have to have a heightened training mentality,” Gossweiler said. Mutual aid agreements with city and rural departments – Bingham, Bonneville, Butte, Clark and Jefferson all have land lying within the Idaho desert Site’s 890 square miles – allow INL firefighters to enhance their training experiences with additional “train on the job” opportunities. At the same time, INL is providing critical response support to the local community for their most challenging emergencies. The need for mutual aid cooperation could be critical this summer, as Gossweiler expects a busy season on the desert because of “carryover fuels” – grass that got taller last

winter because of the scarce snowpack.

Gossweiler envisions big changes coming. Stations 2 and 3 were built in the late ’80s, and Station 1 in the mid-90s, before such developments as the internet, supercomputers, “intelligent buildings,” and unmanned aerial vehicles. The INL desert landscape is also changing. Naval Reactors Facility’s new spent fuel handling facility is scheduled to open in 2024. About the same time, NuScale Power is planning to start up a small modular reactor at the Idaho Site. Both developments are likely to call for special planning and a possible reallocation of resources in the future.

For all the changes, however, one thing is likely to remain the same: maintaining those critical relationships to ensure INL has a world-class emergency response capability.

## New firefighters join the team at INL

*By Elyse Blanch*

INL’s fire department welcomed 13 new firefighters to the organization May 16 at the conclusion of their three-day orientation.

The fire department leadership team gave the cadets the chance to introduce themselves, learning where they came from and what they’ve done in the past. Many of the new hires are from the Northwest, specifically Idaho, and others are coming to the lab from as far away as southern California. All expressed their anticipation in starting a new chapter of their lives with the INL Fire Department. The team of cadets brings a very diverse experiences to INL.

Deputy Chief of Operations Jim Blair reaffirmed the department’s decision to select the new members of their crew.

“You guys are the best of the best,” Blair said. “We really picked the very best for the lab, and you were chosen out of candidates from all over the country.” He also reminded them of how to best work as a team by respecting one another. “Take pride in your job and treat each other as you would expect to be treated.”

Adding to his deputy’s remarks, Fire Chief Eric Gossweiler emphasized the laboratory’s importance in the world of research and innovation. “We [INL] are producing world-leading science,” he said. “We are securing the energy future of our nation and protecting its vital infrastructure. The



**2018 Firefighter Academy: (from left to right) Christina Pendl, CN Hogge, Fernando Ruiz, Riley Esplin, Brian Hill, Mitch Christensen, Nick Terry, James Jensen, Cody Thornton, Jose Sandoval (INL Fire Department engineer & Academy lead), William Lancaster, Nick Hess, Katlynn Hudson and Stephanie Jenson.**

laboratory is made up by a great team of people and facilities and processes you won’t see anywhere else in the world.”

He told the new firefighters how their jobs contribute to INL’s mission as a premier laboratory. “You are enablers of the lab’s very important missions.”

Ed Anderson, Facilities & Site Services chief operating officer, articulated the importance of trust in their organization.

“You’re in a great organization that’s all about people and trust,” he said. “That’s our management philosophy. I trust you to have my back, and you trust me to have your back.”

In his closing remarks, Anderson outlined three purposes of the laboratory that the fire department upholds.

“This organization enables research for the protection of the U.S., and the well-being of mankind in an environment of trust,” he said. “That is my message to you.”

The fire academy for the new cadets entails 22 weeks of intensive training. It includes structural fire, wildland fire, rescue and additional training specific to INL facilities and hazards. According to Gossweiler, “It’s pretty much all hands on deck to run a successful academy. Our team expects to complete the academy and deploy our new firefighters the first of October.”



# Keeping tabs on the desert Site’s seismic activity

By Paul Menser

The Idaho National Laboratory desert Site, once home to 52 nuclear reactors, is in the middle of one of Earth’s more seismically active areas. With this in mind, since 1972, the U.S. government has employed seismology experts to keep tabs on what’s shaking.

The good news is that the eastern Snake River Plain’s composition – porous basalt, sediment and enough water to fill Lake Erie – acts as a giant sponge, absorbing shock waves much more readily than solid rock would. Two big earthquakes have taken place near the plain’s boundary since 1959. The first was at Hebgen Lake, near Yellowstone National Park, in 1959, and the second, in 1983, occurred at the base of Mount Borah in the Lost River Range, about 60 miles northwest of INL’s Central Facilities Area.

The vibration from the Borah earthquake was great enough to trigger the plant protection systems at the Advanced Test Reactor, automatically scrambling the reactor and safely shutting it down. Inspections of existing INL facilities following the earthquake revealed no structural or component damage great enough to compromise structural integrity at INL facilities.

The magnitude and the proximity of the earthquake nevertheless prompted INL to intensify its monitoring of the region’s seismic and volcanic activity. It also brought Dr. Suzette Payne, who had worked on aftershock surveys for the Borah Peak earthquake. Payne landed the seismologist job at INL and has guided the Seismic Monitoring Network as it has

grown in size and sophistication.

Starting with five monitoring stations, that number has expanded to 33. Most dramatically, the revolution in digital technology has allowed the INL network to gain greater scientific insight into activity of the eastern Snake River Plain as well as the area surrounding it.

Since the early 2000s, INL researchers have been using GPS measurement equipment to study movements of the Earth’s crust in and around Idaho. While seismic monitors detect large, abrupt changes, GPS allows scientists to study smaller and slower events in the crust, including “silent” earthquakes, which can last several hours or days.

With equipment spread out over an area that stretches from Challis to Soda Springs, two people are usually out every day checking on stations and sensors, which are vulnerable to harsh weather and damage from animals – anything from rodents chewing through wires to elk rubbing velvet off their antlers. Perhaps nobody has a better overview of the lab’s operations in the field, said Dr. Blaine Bockholt, one of the members of INL Seismic Monitoring team. “We get to know all the different projects,” he said. In addition to Bockholt, the team includes Dr. Jordan Graw and John Sandru. The combined expertise of Bockholt, Graw, and Sandru is moving the INL Seismic Network into its next phase of advanced digital seismic instrumentation.

One of the Seismic Monitoring Network’s top responsibilities is to coordinate regular seismic hazard

assessments, which evaluate the risk to INL facilities from earthquakes and volcanic activity and make recommendations for building construction. Nuclear facilities have to be built to withstand all manner of natural disasters, from earthquakes to floods to tornadoes. Probabilistic seismic hazard assessments provide the basis for design criteria of new and existing facilities.

The current seismic design levels indicate that most INL facilities were built conservatively to provide safety to workers, the public, and the environment. Older INL facilities that do not meet current seismic design criteria are being decommissioned or structurally upgraded.

Since the late 1960s, investigators have recognized that the eastern Snake River Plain’s subsurface conditions seemed to dampen seismic waves. Alternating layers of basalt and sediments that comprise the subsurface dissipate and attenuate seismic energy to a greater extent than uniform rock. The passage of seismic waves through alternating layers of hard basalt and loosely consolidated (soft) sediments scatter and dampen high-frequency seismic energy, resulting in earthquake ground motions that may be 15 to 25 percent lower than they would be for uniform rock.

In the basin and range areas of Idaho, Wyoming and Utah, GPS data suggest the Earth’s crust is slowly stretching, producing the nearby mountains and valleys. This stretching can cause earthquakes, as pieces of crust break away from each other. The faster the crust stretches, the faster it builds up massive amounts of strain, and the more frequently earthquakes occur to relieve that strain. This is what happened on the Lost River fault during the 1983 Borah Peak earthquake. In a 2008 paper in the journal *Geology*, Payne and her co-authors wrote that GPS data suggest the mountain region is stretching much faster than the plain, which seems to be deforming at a slower rate.

The team produces a quarterly report on seismic activity around the INL Site, viewable online at [quakes.inl.gov](http://quakes.inl.gov). In the latest, which covers October to December 2017, the INL office reports 1,631 triggers from earthquakes, both within the region and from around the world. Of these triggers, 101 were in the vicinity of INL. Fourteen of the earthquakes recorded had magnitudes from 3.0 to 4.6, each in association with an ongoing sequence or “swarm” southeast of Soda Springs. All of the earthquakes over magnitude 3.0 were felt by local residents.

Faults closest to INL facilities, the Lost River and Lemhi faults, have been studied in detail to estimate their maximum earthquake magnitudes, distances to INL facilities, when the last earthquakes occurred, and how often they happened in the past. Nobody knows whether or when another Borah-Peak-sized earthquake might occur. But INL will be much more prepared than it was in October 1983.

## Raise the roof



**A Pocatello Roofing crew replaced the leaking roof over the Willow Creek badging office early this summer.**

# INL wins 2018 EPEAT Award for computer purchasing

INL was named one of 53 winners nationwide of the 2018 EPEAT Purchaser Award. The Electronic Product Environmental Assessment Tool (EPEAT) awards recognize leadership in the procurement of sustainable electronics. The lab earned the prestigious award the past two years.

Now in the award program’s fourth year, the Green Electronics Council recognized winners for their purchases in three IT product categories: PCs and displays, imaging equipment, and televisions. EPEAT Purchaser awardees represented local, state and national governments; health care systems; research facilities; school districts; higher education institutions; and private enterprise. The council honored 2018 EPEAT winners March 14 at a ceremony in Minneapolis. Six of the 53 award winners represented DOE labs, sites and facilities.

Chris Ischay, Sustainable INL program manager, said the lab cited numerous benefits from its electronics purchases. Over their lifetime, compared to products that do not meet EPEAT criteria, the 3,056 EPEAT registered electronics purchased by Battelle Energy Alliance in the past fiscal year will result in environmental impact reductions including reduction in use of primary materials by 273 metric tons, equivalent



to the weight of eight semitrucks; avoidance of the disposal of 2.5 metric tons of hazardous waste, equal to the weight of 21 refrigerators; elimination of the equivalent of five U.S. households’ solid waste for a year — 10 metric tons; and avoidance of 1.7 metric tons of water pollutant emissions.

Kimberly Scully, INL recycling coordinator, said the products will consume less energy throughout their useful life, resulting in savings of 922,299 kWh of electricity, enough to power 72 U.S. households for a year; reduction of 151 metric tons of greenhouse gas emissions, equivalent to taking 108 average U.S. passenger cars off the road for a year; and \$95,180 in lifetime cost savings.

[Environmental Benefits Report](#) for Battelle Energy Alliance



# INL campus expansion continues at MFC, ATR

Groundbreaking has begun for the first of two new buildings at INL's desert Site.

"We broke ground on utilities distribution at the beginning of March," said Bill Steele, project manager for the new Materials and Fuels Complex Research Collaboration Building. Building construction began a few weeks later.

The two-story structure, located outside of the perimeter fence west of the entrance to MFC, will house offices, laboratories, and collaboration space to facilitate partnering with the nuclear power industry, universities, international organizations and other national laboratories.

The building's location outside of the fence will give MFC scientists the ability to host and work with unbadged research partners.

Construction of the Research Collaboration Building marks the first stage of a strategy to build, expand and sustain DOE-NE research capabilities at MFC, increase access to MFC capabilities by the nuclear research, development, and demonstration community, and revitalize existing MFC nuclear infrastructure.

MFC provides unique environments to safely study irradiated nuclear fuels and materials. INL is investing in infrastructure to improve historical MFC capabilities that support demonstration-scale nuclear energy activities and construct a new support facility to facilitate partnering with the nuclear power industry and other laboratories, universities and international organizations.

Meanwhile, design work on a new Maintenance Support Building that will be constructed south of the Advanced Test Reactor is nearly complete. Project Manager Mike Patterson expects it to be sent out for bid this fall.

"The Maintenance Support Building will be an 18,400-square-foot building that will consolidate maintenance support functions," Patterson said. "We expect to break ground next spring – construction will be completed in time to support reactor core change-out activities planned for 2020."

The new building will pull together maintenance activities that are currently spread out in old build-



Construction crews lay the groundwork for the Research Collaboration Building at the Materials and Fuels Complex.

## Commercial Build Practices

Both new buildings will be constructed using commercial build practices, similar to in-town INL construction projects. Both construction sites will be securely fenced off from existing facility infrastructure, and access to the sites will be controlled.

"The building standards won't change, just the reporting requirements," Patterson said. "We've done this in the past – it's an efficient approach to construction."

BEA's construction field representatives will provide compliant safe oversight. Requirements for nuclear facility construction, such as the need for the facility manager to approve each day's work package, will be modified. "If the contractor is performing the same work for a week or a month, the FM only needs to authorize the work once for that time period under commercial build practices," said Steele.

Following commercial build practices on the new buildings will serve as a pilot for future construction at the site. Shifting responsibility for daily activities to the contractors is expected to maximize project value by allowing appropriate management of risks in cost and schedule using minimal oversight.

ings across the ATR complex, including offices, a weld shop, kitting/staging area, a tool crib, and storage. Estimated cost of the new facility is \$5 to \$10 million.

The ATR Complex is the focal point for designing,

testing and proving new reactor technologies. The complex hosts one of the world's most versatile materials test reactors – a key capability within the Nuclear Science User Facilities and the Gateway for Accelerated Innovation in Nuclear (GAIN) programs.

# Wildfire season: Seasonal fire restriction program in effect

June has arrived, and with it, a rapidly approaching wildland fire season. The southeast Idaho region experienced two 500-acre fires last week, and there have been several recent large fires in southwest Idaho. The rains of this past week provided temporary relief to the INL Site, which will be short-lived as conditions dry over the weekend.

The INL Site has a significant fuel load for 2018. This is the result of above-average grass growth that occurred in 2017 coupled with little snowpack to compact those grasses down this past winter. Forecasts call for above-normal temperatures with the potential for monsoonal flow, and thunderstorms later this summer contributing to an above-normal potential for significant fire activity. As INL moves into high gear for summer operations, it is important to maintain situational awareness of the associated wildland fire danger. The INL fire danger is moderate today but will transition to high in the very near future.

The nature of fuels, weather and landscape on the INL desert Site present the potential for very large and destructive wildland fires. INL has experienced significant operational interruptions as a result of wildland fire and loss of habitat that seriously threatens sage grouse (please review this video for sage grouse habitat information). Since 1994, the laboratory has experienced an average of five wildland fires involving more than 12,000 acres each year. Our fire experience this year will be dependent on how much lightning INL experiences this summer and the laboratory's attention to fire prevention.



During severe wildfires on the INL desert Site, tanker pilots drop retardant onto the flames as part of fire suppression efforts.

PLN-14401, INL Wildland Fire Management Plan, identifies seasonal fire restrictions in effect from May 1 through the end of the fire season to minimize the potential for human-caused wildland fires. All employees are advised that seasonal Stage 1 fire restrictions are in effect. These include:

1. Curtailment of Site gun range operations involving tracer rounds or other significant fire hazards, unless specifically authorized by the INL fire marshal's office or the INL fire chief.
2. Vehicles used for fieldwork activities are required to carry a shovel or fire extinguisher and a means of communication. Refer to LWP-14101, Field Work (MCP-2725 for ICP) for additional fieldwork requirements, including

**Report any smoke observed at the Site by calling 911 (BEA facilities) or 777 (Fluor facilities) from a landline or 526-7777 from a cellular phone.**

required notifications for activities performed outside of designated Site areas.

3. Construction laydown areas, fieldwork parking and similar operational sites in vegetated areas are required to be provided with sufficient defensible space to minimize spread of fire to adjacent rangelands.

Any additional fire restrictions will be communicated later this summer as fuel and weather conditions warrant.

Your attention to wildland fire prevention plays a significant role in minimizing human-caused fires at the Site. Be cautious with any off-road activity. If you are working off of paved roads, avoid vegetation because it can accumulate and be ignited by hot surfaces under vehicles. Proper disposal of cigarette butts is critical in preventing fire ignitions.

Report any smoke observed at the Site by calling 911 (BEA facilities) or 777 (Fluor facilities) from a landline or 526-7777 from a cellular phone. Fires observed while traveling off site or away from landlines should be reported by dialing #fire or 911 on your cellular phone.



# Maintenance leaders share best practices at forum

At the Energy Innovation Laboratory in early June, Facilities & Site Services and INL maintenance leaders hosted nearly 100 attendees at the fourth annual international Maintenance Managers Working Group (MMWG) forum. Maintenance managers and staff compared best maintenance practices from across the DOE complex and other government agencies.

MMWG attendees came from 18 national labs throughout the DOE complex and as far away as the United Kingdom, where managers from the Atomic Weapons Establishment (AWE) are participants in the organization. Many participants took the opportunity to tour INL desert Site facilities (EBR-1, CFA Power Dispatch, ATR and MFC) or INL town facilities (Biofuels, Fabrication Shop, 3D CAVE, Grid Stability Lab, and Advanced Vehicle Testing Lab).

Dary Newbry, DOE-Idaho Operational Performance & Assurance director, welcomed participants and said their collaboration in sharing ideas and best practices is an asset to the DOE and maintenance industry.

Carlo Melbihess, INL F&SS director, advised attendees to take advantage of opportunities to drive operational maintenance improvements throughout the DOE complex. Sean O’Kelly, associate lab director for the Advanced Test Reactor, told those attending that while each DOE lab has different high-level research missions, maintenance and operations are the foundation and important to all research work. He noted that with the aging infrastructure at most DOE labs, it’s vital that the maintenance leaders work together to find ways to extend the lives of facilities while accomplishing work efficiently. Kevin Pace, ATR Maintenance Division director, said the MMWG organization offers a great chance for participants to gather and share experiences common to their work settings, and network with peers.

INL senior leadership took the time to attend and collaborate with participants. Each represented national laboratory was invited to provide a brief presentation to describe their mission, size and maintenance organization as well as notable best maintenance practices, maintenance challenges, and lessons learned, and 15 labs shared updates.

At the conclusion of the conference, Mike Auble, F&SS Sitewide Utilities director, said INL leaders “shined in sparking conversations” to urge participants from various DOE labs to share knowledge, learned lessons, processes and procedures.

Among the examples are INL experts sharing experience with arc-rated switchgear with Los Alamos National Laboratory, and Lawrence Livermore National Laboratory sharing subsurface location



**At the fourth international Maintenance Managers Working Group forum in INL’s Energy Innovation Laboratory, managers from throughout the DOE complex and Great Britain shared best practices and lessons learned. Participants departed with a renewed sense of camaraderie, and plans for further collaborative initiatives.**

processes and procedures with INL.

“We’re bringing in ideas and exporting our best practices,” Auble said. “I have a much better understanding of who my peers are, how I can help them and how they can help me.”

Four subcommittees were formed to pursue 1) maintenance metrics to be used by all DOE labs (led by INL), 2) technology deployment, 3) training and performance, and 4) planning. DOE is rewriting the order for maintenance management (DOE 433.1B Guide) and will confer with the MMWG before it is implemented. INL’s Kyle Albritten, a work control subject matter expert in Lab Operational Excellence, and Craig Richins, DOE-Idaho, are on the review committee.

At group feedback forums, participants offered positive and constructive comments.

“I could see large-scale applications of various maintenance systems, what works, problems and solutions,” said Gregory Christiansen of Oak Ridge National Laboratory. “It made me aware of several ways to improve my program and applications.”

Dwight Squire of Lawrence Livermore National Laboratory said the forum renewed his motivation to implement change with available technology to

foster success in overcoming maintenance challenges and roadblocks. “Don’t let perfect be the enemy of good, do something with continuous improvement in mind.”

Martin Bentivengo of Fermi National Accelerator Laboratory valued the chance to network with others in the maintenance management field. “I recognize that we have similar opportunities or problems in our respective facilities.”

“The 2018 MMWG was exciting with synergy and passion for maintenance excellence in every discussion,” INL’s Kevin Pace. “The group is looking forward to many exciting challenges as well as collaborative solutions in 2018 and 2019. The MMWG subgroups departed with a renewed level of energy and excitement toward positive change in their respective organizations.”

Mark Zulim of the National Nuclear Security Administration Lawrence Livermore Field Office, said, “I fully intend to inform my NNSA management about the success with the MMWG -- particularly in its subgroups in actually accomplishing improvements, and best management practices.”

Ed Keith of Los Alamos National Laboratory summed up the forum: “Idaho National Laboratory took the MMWG to a completely new level. Superb week.”

# Bus dispatcher recalls bizarre circumstances of lightning storm

By Elyse Blanch

It was a strange occurrence, the kind that sends goosebumps running down your spine.

A gaggle of dead snow geese rained down on Idaho National Laboratory’s park-and-ride lot off Yellowstone Highway on the evening of April 7.

Joe Roach, INL bus dispatcher, witnessed this phenomenon firsthand from his office in the dispatch building by the parking lot.

“I could see dark, low clouds coming in, the kind that you’d see in a movie,” he said. “There was thunder and lightning, and it sounded like it was getting closer to the back of the building.”

Roach explained that the loud bangs he thought to be thunder were actually the dead geese dropping from the sky.

“It sounded like someone was hitting the outside of the back wall,” he said. “I looked out the window and saw geese dropping from the clouds.”

Char Bain, INL building and facility specialist, received a call from Roach just as she was pulling in

to Las Vegas.

“Joe called me and said, ‘You’re not going to believe this, but it sounds like someone’s shooting at us,’” she said. “He told me he looked outside and could see birds dropping everywhere.”

Bain said it was hard to imagine such a storm happening as she was entering the sunny 90 degree weather in Las Vegas.

“Sometimes I get bizarre maintenance calls, but this was an exceptionally unusual call,” she said.

A fierce hail storm followed shortly after the geese were killed, pummeling the Idaho Falls area for several minutes. The golf ball-sized hail from this wind, rain and hailstorm caused millions of dollars in damage to homes and automobiles in and around Idaho Falls.

Roach said that the storm was so intense that it blew hail underneath the office door, drenching the entryway carpet.

“The hail piled up so badly against the outside of the main door that I had to take another exit just to get

out,” he said.

Despite the destructive hail, conservation officers from Idaho Fish and Game determined that the geese were most likely struck by lightning, observing that the birds had experienced only internal damage rather than external.

Roach said the Fish and Game officers came back the next day and found more geese lying on the roof of the building.

Determining an exact number of how many geese fell is a bit of a wild goose chase. However, Roach estimated there were around 80 to 100 birds in the area’s parking lots and roofs that had fallen prey to the deadly storm.

“It was like something eerie you’d see in a sci-fi movie. They weren’t floundering or flapping when they fell – they just dropped straight down.”

Needless to say, these geese fell faster than greased lightning, or, in this case, geese lightning.

[Geese footage from security camera](#) at Yellowstone park-and-ride lot on April 7, 2018.



# Digging

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management and operations contractor in 2005. Waymire, a former heavy equipment operator, and Meikle, a former land surveyor, are the latest people in the position (their immediate predecessor was Shawn Williams, who is now in the Safety office).

The Atomic Energy Commission began moving dirt on the Snake River Plain in 1949 to build the first Experimental Breeder Reactor (EBR-I). In the years that followed, more than 50 reactors were built at the Site. Today, four remain.

The locations of old reactors may have been fairly well-documented, but service buildings, trenches, culverts and concrete pads have long since vanished from sight. Few were concerned with keeping very detailed records.

“It was a big trend over the years to ‘abandon in place,’” Meikle said. “We’ve run across several old projects built during the ‘cowboy days’ in the ’50s and ’60s. Those things can be tricky for us.”

Waymire said the heightened awareness of buried things can be stressful. “We have some great equipment and great success at what we do, but there are too many variables for it to be an exact science,” he said.

“I was always very cautious around utility markings when I was operating dozers, scrapers, road graders, and excavators, but I never had the full respect for a utility locator as I do now,” he said. “I used to have such a strong passion for operating heavy equipment, but now I get butterflies in my stomach when I see an excavator roll onto a project. It is a very stressful job when dealing with so many scenarios on the INL Site.”

Even what looks simple can be puzzling. In May, scoping out a site proposed for a new maintenance building at the Advanced Test Reactor, they found an unexpected Romex wire running to the National Oceanic and Atmospheric Administration tower. “You start with the big picture,” Meikle said. “Are there things coming out of the building? Where do they go?”

On a Tier 1 job, they will use a pipe and cable locator and ground-penetrating radar, but a lot of the work is done with the naked eye. “You learn what different things look like, how to identify soil conditions,” Waymire said.

On more challenging Tier 2 jobs, more sophisticated equipment, such as the EM61 magnetometer may be required. This is a time-domain metal detector, capable of detecting a 55-gallon drum buried deeper than 3 meters.

Some older things elude detection, however. When the Department of Energy first started laying fiber-optic cable in the mid-1980s, it was so new and untried that no one thought to lay copper tracer cable along with it. “There’s fiber all over, and most of it is nondetectable,” Meikle said.

They recognize that a lot of past Site workers who might have known where things were buried are now gone. “From time to time, we run into someone with valuable legacy information,” Meikle said. “I’m very interested, not only for my job but from a historical standpoint.”

The greatest concern is always the possibility of a backhoe hitting a buried high-voltage line resulting in injury or death. Even a noninjury incident can be expensive, considering all the people who have to be paid investigating it, Strong said.

Battelle Energy Alliance has made a significant investment in equipment and talent, he added. “There’s a real art to it. It used to be done in a slow, methodical way, with heavy equipment, and we still used to have trouble. Our subsurface (incidents) are few and far between now.”



**At the Supervisors Forum on June 18, participants broke into groups outside of the CFA Big Shop to explore subsurface concerns in a Dynamic Learning exercise designed to push their technical and human performance improvement techniques.**

## Service Anniversaries

### F&SS service anniversaries for May, June

40 Years: Tim Beseris, David Fry, Charles Strong  
30 Years: Connie Andersen, Louis Guillen,  
25 years: David Start

15 years: Travis Burns, LeAnn Capson, Aaron Taylor  
10 years: Douglas Anderson, Todd Jenkins, Donald Jones, Joseph Roach, Joseph Whipple  
5 years: Jerry Cloward, Maryl Fisher

## Financial experts offer INL budgeting overview

At the Managers Forum for F&SS managers on May 24, Bryan Larson, Rachel Burch and Debby Tate offered a financial overview of Business Management practices and policies.

Larson described indirect budget structure and investments, including sources of INL funds by type, pools, cost recovery based on revenue, and INL business volume and projections. He explained how to read INL financial reports for such matters as full-time equivalents (FTEs), business volume and funds in – the total amount of funding the lab has at a specific time (which includes previous year carryover funding and new funds received this fiscal year), indirect over- and under recovery, and baseline budget changes. He and Burch described

“colors of indirect money,” which entailed a group activity in which Burch gave teams examples of a cost, and they brainstormed in which indirect pools the cost belongs.

Burch elaborated on topics including labor versus nonlabor costs, and planning to peaks and valleys, and stressed that managers must not mix direct and indirect funds. She described how variances occur, and what managers should look for from their planning and financial controls specialist. Tate reviewed short-term and long-term integrated priority list (IPL) planning and budgeting, and advised managers to use mid-year release of funds for items that meet emergent needs and help achieve long-term goals.

## Benchmark

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Benchmark highlights news and achievements of the Facilities and Site Services Directorate at Idaho National Laboratory.

