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Savannah River Site Manager Jack Craig receives presidential rank award

Aiken Standard

December 27, 2015

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Savannah River Site Manager Jack Craig was recently selected to receive a 2015 Presidential Rank Award.

In a letter that U.S. Energy Secretary Ernest Moniz sent to colleagues, Moniz said the Presidential Rank Awards are the nation's highest civil service awards and are bestowed upon those who have demonstrated sustained, extraordinary performance and achieved notably outstanding accomplishments.

He added that winners must be strong leaders, professionals or scientists that have made significant and lasting contributions to the agency's effectiveness on a sustained basis.

Craig was one of only 11 Department of Energy leaders in the nation's complex to be named as a recipient.

"The accomplishments of this group are truly noteworthy, and each are more than deserving of this prestigious award and recognition," Moniz said.

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Calendar

DOE Consent-Based Siting Public Meeting

January 20, 2016
1 PM - 4 PM EST
Marriott Renaissance
Washington, DC,
Downtown Hotel
999 9th St NW,
Washington, DC 20001

Save the Date:
DOE National Cleanup

Craig took over duties as site manager after Dave Moody retired in June. Craig has 20 years of experience in various technical, management and executive leadership positions within the department.

During his time working in Ohio, Craig was responsible for oversight of 192 federal staff members that support 15 Department of Energy sites with an annual budget of more than \$1 billion.

At the Savannah River Site, Craig previously acted as manager of the site's operations office and oversaw disposition of legacy plutonium and uranium materials, receipt and management of spent nuclear fuels from research reactors and treatment of 37 million gallons of radioactive liquid waste.

Craig said he has experienced personal and professional growth as a civil servant.

Moving forward, Craig said he will use his time as SRS manager to build on the strong legacy of national service.

"I am committed to the safety of every employee, growing and sustaining the important SRS missions, ensuring the viability of Site infrastructure, developing our workforce for the future, and remaining engaged with our regulators, community and stakeholders," he added.

Oak Ridge brings it all together in 2015

Oak Ridger

December 28, 2015

[LINK](#)

The world came to Oak Ridge in 2015 because:

— Our science and engineering is paving new paths for commerce and pure knowledge;

— Our national security programs are essential to enforcing treaties and making our world more secure; and

— Our environmental management and cleanup programs are about to do what no one else in the world has done — successfully decommission and decontaminate a gaseous diffusion plant.

Oak Ridge is setting the pace, defining new standards in all these

Workshop
September 14-15, 2016
Hilton Alexandria Mark
Center
Alexandria, VA

areas and more for the U.S. Department of Energy (DOE) and other federal customers.

And, globally, people are paying attention.

We know that because — as the year began in January — President Barack Obama, traveling with Vice President Joe Biden, came here to announce establishment of a national center of excellence in advanced composite manufacturing: IACMI, the Composites Institute.

We also know that because, as the year ended, Anne Harrington, deputy administrator for Defense Nuclear Nonproliferation for the National Nuclear Security Administration (NNSA), bragged about how the Y-12 National Security Complex, the Oak Ridge National Laboratory (ORNL) and a good home-grown East Tennessee business — Cadre 5 — are assisting her in protecting our nation from the proliferation of weapons.

“You are truly our partners in helping make the world safer,” Harrington said at the annual meeting of the East Tennessee Economic Council (ETEC) in mid-December.

“Just as Oak Ridge was key during the Manhattan Project, Oak Ridge will remain essential in the future.”

Meanwhile, at DOE’s inaugural environmental management conference in September, speaker after speaker rose to commend Oak Ridge for its efforts in cleaning up the East Tennessee Technology Park site, preparing it for new industrial users, and making it ready for new cleanup challenges at Y-12 and ORNL. Forward thinking, looking

Much of what happened within the federal complex this year is “forward looking” — making sure that as new opportunities arise in science and national security ... and, indeed, in private sector manufacturing ... Oak Ridge’s programs are ready to compete for those program dollars.

Here are some examples from around the Complex:

- Oak Ridge National Laboratory —

— At ORNL, the Second Target Station (STS), a new facility that the Lab hopes to build and operate by 2025, will complement the two existing neutron sources at ORNL: the first target station at the

Spallation Neutron Source (SNS) and the High Flux Isotope Reactor (HFIR). Combined, these facilities will help the lab study materials of the future.

Materials continue to get more complex and new ways are required to study them, like these neutron sources, which can actually understand that level of complexity. The STS will help answer questions about how to design new materials with the desired properties, and also how to make them.

Additionally, STS will have a performance level that allows us not just to look at the material, but view it being processed or made so researchers can predict how it will perform, what will happen when you use that material many times, how it ages, and also how to make it in the first place.

STS will complement the SNS and HFIR because it adds a new wavelength of neutrons produced. It will emphasize the production of long wavelength neutrons, and it will operate at a much lower repetition rate than the first target station.

What that means is it's going to be very well suited for wide dynamic range questions, and it will look simultaneously across a large range of length and timescales. So it's best suited for those kinds of experiments that exhibit complexity or information, structure and dynamics across that range of length scales.

— Likewise, in supercomputing, the new supercomputer named “Summit” will provide at least a five-fold increase in computational power. It's going to provide significantly greater memory, greater interconnection opportunities and greater performance at the node level.

In other words, scientists are going to be able to do much more realistic work on the new machine than they can do right now on the lab's current supercomputer — Titan. (And Titan is already enabling some pretty amazing things.)

Like Titan, Summit will feature a heterogeneous architecture and will contain 3,400 nodes equipped with IBM Power9 CPUs and NVIDIA Volta GPUs (processors). ORNL expects the peak power consumption will be 10 MW or less (about 10 percent higher than Titan with five times the performance).

This summer, renovations began to prepare for the arrival of Summit in 2018. These renovations are designed to meet the

infrastructure requirements for Summit, as well as future machines.

The biggest change in infrastructure will be a move from cold- to warm-water cooling. This shift is projected to lower costs by more than half ... saving nearly a million dollars per year in operating costs.

Composites Institute

While looking to the future, it is also important to know science and technology programs are taking care of current projects, as well.

Let me use the Composites Institute announced by President Obama as an example.

Since President Obama and Vice President Biden announced The Composites Institute in January and officially launched in June, the Institute has:

- **Developed Partnerships:** More than 122 organizations, representing 32 states, have committed to partner with IACMI, also known as the Composites Institute. The Composites Institute has also partnered with key organizations like ACMA, the premiere composites industry association, and Composites One for workforce training capabilities.
- **Expanded its capabilities and geographic footprint** with a memorandum of understanding (MOU) with the Composites Prototyping Center — expanding IACMI's facility access and footprint in the Northeast. In September, Vice President Biden announced IACMI's Michigan facility co-location with LIFT, the lightweight metals institute in Detroit, and Purdue is building a \$50 million research facility as a result of the institute partnership.
- **Industry applications:** Several industry partners are already engaged with IACMI, the University of Tennessee and ORNL and the collaboration impact is already being realized. A recent example is with the AMIE experiment, which used DowAksa developed carbon fiber in the printed home.
- **Job Growth and Regional Impact:** Even in its infancy, national events such as the carbon fiber conference are being held in Knoxville as a direct result of the access to key IACMI and ORNL facilities and leadership. Several companies have relocated facilities and headquarters to this area as a result of the composites

facilities and expertise in the area. Local Motors, a specialty automotive manufacturer, recently built a microfactory in this area and the end result will be creation of new jobs and innovation in manufacturing for this regional ecosystem. Leisure Pools, an Australian company with ownership of Orion Composites, also announced the relocation of their headquarters to Knoxville. This move will create up to 1,000 area jobs.

- **Workforce:** Through partnerships with local resources like Roane State Community College and Pellissippi State Community College as well as national resources like the Closed Mold Alliance, IACMI will enable workforce training and education training to meet long-term advanced composites manufacturing needs.

CNS/Y-12

At the Y-12 National Security Complex, managed by Consolidated Nuclear Security (CNS), a similar story can be told for 2015. The team there continues to plan for the future — with specific milestones on the Uranium Processing Facility and other infrastructure enhancements met — and to deliver on requirements from military and NNSA customers.

In 2015, CNS continued its important role as the front line of global security by delivering W76-1 Life Extension Program (LEP) requirements to the military and increasing overall global nuclear threat reduction work by 27 percent. CNS consolidated operations for Y-12 and the Pantex Plant in Amarillo, Texas, merging organizations, processes and systems for two geographically and operationally distinct facilities. It put efficiencies in place that are projected to lead to \$1.3 billion in taxpayer savings over the next 10 years.

On the Uranium Processing Facility (UPF) front, the Site Readiness Subproject was completed in February 2015 on schedule and under budget. This subproject included the construction of a haul road, the Bear Creek Road bypass and sediment basin 6; grading; and a potable water line.

Work on the Site Infrastructure and Services Subproject began in March 2015. This subproject involves important site infrastructure activities including building demolition and removal of asphalt from parking lots, which is complete; excavation of the hillside and sediment basin 4, which is in progress; and construction of a concrete batch plant and construction support building. This

Subproject team received an Environment and Energy Award from the Tennessee Chamber of Commerce for environmental sustainability recycling and reuse. In 2015, UPF recycled or reused more than 74.4 million pounds of materials, including 63 million pounds of asphalt, 4.2 million pounds of wood reused for erosion control, and 240,000 pounds of mixed scrap metal.

In July, the UPF project achieved two million hours worked without a lost time injury.

The Conceptual Safety and Design Report was approved in May and Conceptual Design was completed in June 2015, and design engineering continues on schedule in support of the facility's completion by 2025.

Environmental Management

Pictures tell the story of the progress being made at the East Tennessee Technology Park (ETTP) better than words — pictures of buildings on the ground, pictures of now flat industrial spaces ready for new uses.

The demolition of the K-31 Building was completed in June 2015. That marked the removal of the fourth of five gaseous diffusion buildings at the former Oak Ridge Gaseous Diffusion Plant site. Work is under way on the final building — K-27 — scheduled for demolition next year.

Significant progress was made on historic preservation of the K-25 site. Conceptual design was completed for a history center, viewing tower and exhibits. A virtual museum website dedicated to the site's history was also launched during the year.

Some other key milestones were the planning for construction of a new onsite disposal facility for low-level waste. Known as the Environmental Management Disposal Facility, the new facility will expand onsite disposal capabilities when the existing disposal site reaches capacity, and allow for the smooth transition from cleanup of ETTP to new projects at Y-12 and ORNL.

Mercury remediation remains a high priority for DOE-EM in Oak Ridge. This high level of attention stems from large historical losses of mercury within buildings and to soils and surface waters at Y-12. In 2015, planning advanced for a new Mercury Treatment Facility designed to reduce mercury concentrations in water exiting the Y-12 site.

Also this year, DOE's Environmental Management office, with WAI and UCOR developed an innovative solution that allowed us to continue processing our inventory of TRU waste despite the shutdown of the WIPP facility. We developed a uniquely designed cask for remote-handled waste, and worked with WAI and UCOR to identify storage space for the processed waste.

DOE-EM also launched our direct disposition campaign to remove half the inventory of Uranium-233 from Building 3019 at Oak Ridge National Laboratory, and have started preparing for the processing campaign.

Science Education

The science education programs, which have been a building block of this community since its inception, continued to prosper as well. In June of this year, Roane State Community College, working in partnership with Oak Ridge Associated Universities (ORAU), was selected as a designated Center for Academic Excellence in Geospatial Sciences. Roane State was the only community college chosen for this program among the 17 academic institutions to earn this distinction nationwide.

The program is designed to build, strengthen, and cultivate the current and future geospatial sciences workforce that the National Geospatial-Intelligence Agency, the U.S. Geological Survey, and many branches of the U.S. government so desperately need. This center will serve as the regional geospatial hub connecting and interacting with the GIS research community in Oak Ridge, the GIS academic community, including ORAU's consortium of 114 universities that encompasses a 28-member consortium of minority-serving institutions.

As part of the partnership, ORAU plans to connect the GIS center to its research university partners, promote NGA and GIS best practices through regional webinars and offer research opportunities through NGA internships programs and the National Labs. ORAU President Andy Page says the plan is to embed ORAU staff in the GIS Center of Academic Excellence to provide technical counsel and assist with planning and the marketing of the Center.

And ORAU is helping Roane State with their outreach programs, particularly to the GIS community in the state of Tennessee and with ORNL's Geographic Information Science and Technology

group. For ORAU this program gives the opportunity to advance opportunities for underserved populations in the intelligence community at all stages in the workforce pipeline. By adding the community college contingent to that effort, ORAU will support research directly related to the NGA's mission at every academic level, from K-12 to undergraduate to graduate to Ph.D. There is much more, of course.

Work continues on a proposal to locate a general aviation airport at East Tennessee Technology Park (ETTP). Industrial developers are working daily with DOE and the contractor community on new opportunities. Educational partnerships in the sciences and engineering are maturing from the grade schools to Ph.D. programs.

The world came to Oak Ridge in 2015. It saw a place where science, national security, energy, environment, education and industry work together. It saw a community investing in its future.

Radioactivity lingers at Oak Ridge sewer plant

Knox News

December 29, 2015

[LINK](#)

OAK RIDGE — In early 2014, evidence of radioactive pollution was discovered in the city of Oak Ridge's sewage treatment facility on the west side of town.

The unwelcome surprise was blamed on technetium-99 that had migrated from a demolition project at the federal government's K-25 uranium-enrichment plant on the other side of the Clinch River.

The radioactive contaminants, which can be mobile in the environment, had infiltrated pipelines leading to the sewer system.

Although the radioactivity reportedly didn't not pose a health threat to workers at the plant or drinking water supplies in the area, it prompted a number of cleanup actions — including efforts to remove the technetium in the sewage treatment systems.

Over the past two years, about 75,000 gallons of radioactive sludge have been removed from the city facility and shipped out west for treatment and eventual disposal. But the Oak Ridge problem still hasn't been resolved fully, and it's not clear when it will be.

"Overall Tc-99 levels continue to decline within the Rarity Ridge Treatment Plant, but it is premature to estimate the exact number of shipments (of sludge) or even the estimated time frame that will be needed to bring the facility back to normal operating parameters," Anne Smith, a spokeswoman for UCOR (URS-CH2M Oak Ridge), the Department of Energy's cleanup manager in Oak Ridge, said in an email response to questions.

On Nov. 5, UCOR made the 15th shipment — each of them 5,000 gallons — from the Oak Ridge treatment plant to a Perma-Fix Environmental treatment facility in Richland, Wash. The next shipment likely will take place in January, according to the DOE contractor.

Smith said the weather, particularly rainfall amounts, can elevate the radioactivity levels at the sewage treatment plant and have an impact on the number of sludge shipments.

"Rain events are similar to a cleansing mechanism and carry more debris through the system, which increases the suspended solids," she said. "The Tc-99 concentrates with the solids and thus increases the levels of Tc-99 being accumulated in the sludge and, as a result, into the tanker."

Lower levels of suspended solids typically occur when rainfall is minimal, she said.

"UCOR and the city of Oak Ridge continue to watch this correlation very closely and adjust the shipment schedules to maximize the amount of Tc-99 being removed (from the sewer treatment system) for shipment," Smith said. Maximizing the radioactive material removed during this process will reduce the number of waste shipments necessary, she said.

Last year, after the problem was discovered, the Department of Energy and its contractor took steps to isolate the pipelines near the K-25 demolition site and prevent them from reaching the lines that lead to the sewage treatment facility.

City officials have generally praised DOE and its contractor for its response to the problem.

UCOR said it is managing the sludge for the city of Oak Ridge until the radioactivity levels "subside back to a level where they can manage it per their normal protocols."

As part of its response, UCOR has taken steps to better contain the radioactive and hazardous contaminants associated with the demolition rubble at cleanup sites.

The contractor said it is applying lessons learned from the K-25 project — one of the biggest demolition projects in history — to upcoming work at the K-27 facility, which also has trace amounts of radioactive technetium in its old equipment.

Smith said UCOR will either remove piping contaminated with technetium-99 before demolition begins or seal the equipment with a foam to keep the contamination in place as the building is torn down.

Most of the demolition rubble will be sent to a local landfill that's designated for Superfund cleanup wastes. However, some of the equipment won't qualify for disposal there because of high levels of radioactivity or other reasons.

Smith said those pieces of equipment will be painted so they can be easily identified and segregated. They will later be chopped up to prepare for disposal and kept until cover to prevent the spread of contamination.

"Components pulled from the demolition debris will be shipped on an expedited schedule to minimize the time they are in the field," Smith said.

This is another attempt to keep rainfall from carrying away loose contamination at a demolition site.

INL's research role will continue in 2016

Idaho Mountain Express: Opinion

December 30, 2015

[LINK](#)

The end of 2015 marks the beginning of a new decade for the Idaho National Laboratory.

Ten years ago, the Department of Energy, with support from Idaho's congressional delegation and state elected officials, separated DOE cleanup actions from the important research and development mission of the lab. INL was tasked with conducting nuclear and other clean energy research, protecting lives through an enhanced national security mission and building partnerships with education institutions in Idaho, the U.S. and around the globe.

Over the past decade, scientific discoveries led by the lab's talented staff have saved lives, helped keep nuclear materials from falling into the wrong hands and improved the world's energy choices. In my two months as INL director, I have been amazed by the excellence of this institution—its people, facilities, equipment and partners.

My career has taken me across the nation, and I've worked in and collaborated with several of the DOE's 17 national labs. Before landing in Idaho, I was familiar with the unique capabilities and talents at INL. I see now how just dedicated the lab is to its research and development mission in nuclear energy, integration of clean energy options and becoming a leader in cyber security, and grid and critical infrastructure protection. INL has invested its dollars wisely to recruit the best and brightest, and built superior facilities that allow great minds to solve our nation's largest challenges.

INL helped power missions to Mars and Pluto. INL is leading development of new nuclear fuels that are safer and more efficient. And INL will help combat climate change by improving energy storage, making manufacturing more efficient and developing advanced nuclear reactors.

INL leads the nation in advanced electric vehicle testing, trains radiological first responders and recently was recognized by the Army for its work in designing and manufacturing tank armor that protects our soldiers in battle.

The work we do at INL makes the world safer and cleaner; it also boosts Idaho's economy.

INL is Idaho's fifth-largest private employer with about 3,900 employees earning an average of \$88,635 annually. In 2015, INL added nearly \$1.6 billion to Idaho's gross economic output. In 2015, it hired 500 people, many graduates from Idaho colleges and universities. INL employed 350 interns and subcontracted more than \$130 million to Idaho's businesses.

As Idaho's leaders have shared with me, the value of INL is not lost on them. They are grateful for INL's many contributions, including our commitment to improving STEM education in Idaho, our charitable giving and our help developing a strong technology culture through corporate grants.

I am confident that INL, the DOE and our state partners appreciate the national and international value of nuclear energy research and embrace the responsibilities that come with being the nation's lead nuclear research laboratory.

INL has earned a reputation for leading important research efforts. Sixty years ago, INL helped build the nuclear Navy. Today, INL stands prepared to help reduce carbon emissions on a global scale.

As we launch this next decade of exciting INL discoveries, we want to do so in partnership with all Idahoans. The journey ahead will be easier and more rewarding if made with our education institutions and the Center for Advanced Energy Studies, a consortium that includes Idaho's three major universities and the University of Wyoming. We will not, in future years, be able to grow without a talent pipeline from which to draw.

We will be transparent, answer tough questions and address concerns head on. Under my leadership, INL will be responsive. If the public has a concern, we will address it.