news release

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Exelon Employees Win Top Nuclear Industry Innovation Award

Digital Work Packages Revolutionize Nuclear Power Plant Maintenance

WASHINGTON, D.C.—A team of Exelon employees today received the nuclear energy industry's highest innovation award for implementing digital process for managing plant maintenance work. The employees were honored for their Electronic Work Package (eWP), a digital process through which work packages are created, managed, monitored and stored. It replaces paper-based work packages and enhances worker safety, efficiency and productivity during plant maintenance work.

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The Nuclear Energy Institute is the nuclear energy industry's policy organization.

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The B. Ralph Sylvia Best of the Best Top Industry Practice (TIP) Award was presented at the Nuclear Energy Institute's annual meeting. The TIP awards recognize achievements in 12 categories—four reactor vendor awards and eight process awards for innovation to improve safety, efficiency and nuclear plant performance—as well as an award for vision, leadership and ingenuity.

The eWP digital work packages, the first of its kind in the nuclear energy industry, are efficient and user-friendly. Personnel can easily view, revise and approve the latest work package information from any Exelon computer, including tablets, in the field. They can take photos and videos of field conditions for documentation and to improve communications and problem solving.

'This is a step change for the industry," said Tony Pietrangelo, NEI's senior vice president and chief nuclear officer. 'Exelon's eWP increases productivity throughout project execution, and its electronic platform enables real-time engagement by all parties involved. It has fast proven to be far more effective than traditional protocols. The Nuclear Energy Institute is excited to recognize the dedicated Exelon professionals whose innovative thinking and hard work yielded this remarkable accomplishment, which is transferrable across the entire industry."

'Innovation is absolutely key to the ongoing success of our organization," said Bryan Hanson, president and chief nuclear officer of Exelon Nuclear. 'The Electronic Work

Package is an important innovation that will make the performance of work packages throughout Exelon's nuclear fleet even safer and more efficient, and it will benefit the entire organization for years to come. On behalf of Exelon's leadership team, I wish to commend and thank the team members who brought this remarkable innovation to fruition. Well done."

On average, operations and maintenance expenses constituted 56 percent of a nuclear energy facility's electricity generation cost in 2013, according to the Electric Utility Cost Group. Exelon will implement the eWP process at all its nuclear plant sites, allowing the company to improve worker productivity and reduce costs.

The Best of the Best Award honors the late B. Ralph Sylvia, an industry leader who was instrumental in starting the Top Industry Practice program 21 years ago. Details on award-winning Top Industry Practice solutions are as follows:

TIP Vendor Awards

AREVA

Dominion Nuclear employees at the Millstone Power Station earned the AREVA Vendor Award for using a new "soft" chemical cleaning process to remove deposits in steam generators, a key plant component. Dominion Nuclear selected AREVA's deposit minimization treatment, which is simpler, safer, faster and more environmentally friendly than hard chemical cleaning techniques. In its first use, the soft process removed more than five tons of material, produced no hazardous liquid waste, improved steam generator performance and yielded almost $30 million in benefits.

GE Hitachi Nuclear Energy

Employees of **Exelon Generation** at the Clinton Power Station in Illinois were recognized with the GE Hitachi Nuclear Energy Vendor Award. The team was the first to utilize a new method that detects and suppresses periodic power and flow oscillations in boiling water reactors. The GS3 innovation—GE Hitachi Simplified Stability Solution—resulted in a safer, more efficient uranium fuel load design for the reactor core that saved $3.5 million in fuel costs. GS3 is transferable to other boiling water reactors.

Westinghouse

Ameren Missouri team members at the Callaway nuclear station won the Westinghouse Vendor Award for their "Ultimate Heat Sink Re-Analysis." The ultimate heat sink provides cooling capability after a reactor shutdown or loss of coolant to the reactor. Addressing a scenario not previously examined, the Ameren team re-analyzed the system and used the findings to develop new controls and procedures to ensure the system would fulfill its safety function in that instance. The U.S. Nuclear Regulatory Commission subsequently approved the approach.

Westinghouse-Combustion Engineering

Entergy employees at the Palisades nuclear plant in Michigan earned the Westinghouse-Combustion Engineering Vendor Award for their core support barrel project. About every 10 years, a device called the core support barrel is removed from a pressurized water reactor for inspection. Instead of using large water tanks to block radiation emitted from the core support barrel, the team developed a new process that uses compact lead shielding to protect against radiation. The process reduces personnel radiation exposure, increases inspection safety, saves time and reduces costs.

TIP Process Awards

Communications

The winners of the Communications Award are **Pacific Gas & Electric** (PG&E) employees for their Diablo Canyon seismic safety outreach. PG&E released an in-depth seismic report to federal and state officials and the public, using a multi-faceted outreach strategy to communicate complex seismic issues to regulators, government officials, the media and the public. With an emphasis on person-to-person communication among diverse stakeholders, the effort addressed the information needs of a variety of audiences and generated significant media coverage.

Operate Plant

Duke Energy team members at the Robinson nuclear facility in South Carolina earned the Operate Plant Award for the industry's first large-scale application of a product called Never Wet. Produced by Rustoleum, Never Wet prevents materials suspended in water from sticking to submerged objects and equipment. After lab testing, the team had Never Wet applied to a container used to transfer uranium fuel from the reactor to the used fuel storage pool. Never Wet's use eliminated the need to decontaminate the container, reduced time and costs, and lowered personnel radiation exposure. Never Wet can be used industrywide for similar applications.

Equipment Reliability

Tennessee Valley Authority employees won the Equipment Reliability Award for their solution for open phase faults. An open phase fault is a problem with the quality of the electricity that comes into a power plant to run equipment. It has the potential to affect the operability of a nuclear plant's safety equipment. TVA's team found a solution that provides complete open phase fault protection for safety systems and safety-related equipment. The solution, which is transferrable to other nuclear plants, is projected to save TVA more than $17 million compared to alternative remedies.

Maintenance

American Electric Power employees at the Cook nuclear plant in Michigan won the Maintenance Award for their use of a bridge crane for heavy lifts in the turbine building of an operating nuclear plant. The project included lifting components weighing as much as 110,000 pounds and 88 feet in length, 60 feet above the turbine floor. The innovative approach used multiple telescoping gantry systems and a hydraulic turntable to safely lift and rotate components. Using the crane during normal operation, as opposed to during a maintenance outage, saved $18 million. Throughout the rehearsal and installation processes, there were no safety or human performance incidents.

Materials, Management Processes and Support Services

Tennessee Valley Authority employees captured the Materials, Management Processes and Support Services Award for their development of the Cyber Security Assessment Tool to meet federal cyber requirements. TVA identified 7,800 critical digital assets, each of which must be evaluated against 670 cyber security controls, for a total of 5.2 million interactions. The team developed a system that evaluated all of the interactions at TVA's seven nuclear plants in less than a year and provides assurance that digital assets are protected. The assessment tool can be customized for use by any nuclear energy facility.

Plant Support

Employees at **Exelon Generation** captured the Plant Support Award and the B. Ralph Sylvia Best of the Best Award for its Electronic Work Packages entry that revolutionizes the way maintenance work is managed at its nuclear energy facilities.

Training

Entergy Operations employees were recognized with the Training Award for their earthquake simulation at the Indian Point Energy Center's control room simulator. Designed in response to the Fukushima Daiichi accident, the earthquake simulator uses innovative techniques to replicate earthquake vibration effects on the contents of liquid storage tanks at the site and the control room. High-power subwoofers under the simulator floor produce low-frequency sounds that simulate seismic vibrations. These, in turn, enable reactor operators to observe, diagnose and respond to the effects of a seismic event in realistic conditions. The simulation improves nuclear safety through enhanced reactor operator training.

Nuclear Fuel

Exelon Generation team members were honored with the Nuclear Fuel Award for their 'Optimum Power Coastdown Strategy." The strategy increases fuel efficiency during 'coastdown,"—the end of a nuclear reactor's two-year operating cycle when it no longer maintains full power. The strategy considers a range of factors to determine the optimum coastdown length. The information is used to reduce the number of new fuel assemblies that will be needed, resulting in significant cost savings. Transferable to other nuclear facilities, the fuel cycle savings range from $1 million to $3 million per plant.

TIP Vision, Leadership & Ingenuity Award

Employees of **Duke Energy** won the Vision, Leadership & Ingenuity Award for their 'Excellence in Cost Management" program. The objective of the program is to maintain low growth in annual spending through 2018 without simply cutting costs. The program improves performance and efficiency without compromising safety or plant reliability. For example, in 2014, refueling outages at six Duke Energy reactors each were successfully and safely completed an average of $1.5 million under budget, compared to outages for the previous three years being an average of $5 million over budget. In all, the program saved Duke Energy more than $35 million in 2014. The program increased worker safety, innovation and employee engagement.