

Mobile Work Management a Game Changer at Exelon Nuclear Facilities

A digitized work management system for the execution of maintenance activities can increase productivity while lowering costs at nuclear plants.

Exelon Generation and EPRI worked together to develop guidance which allowed for the completion of the first U.S. commercial nuclear industry work package that was planned, executed, and closed out in a completely digital format using a mobile platform. EPRI's mobile work management guidance can now be applied across the entire nuclear industry to:

- Improve worker productivity – An automated electronic work package reduces multiple redundancies and includes controlled document validation, electronic task assignment check-in and check-out, the ability to obtain remote authorizations, automated task status updates, single-point data entries, and digital imaging and video capture to better document field conditions.
- Improve work quality – Electronic platforms provide access to numerous electronic references and resources that previously were not readily available to aid in successful task execution.
- Reduce costs – Paperless processes can save on various resources, including printing, assembly and managing paper binders. EPRI's mobile work management guidance can assist in implementing a solution with a net positive return on investment through this resource savings.

The Maintenance Workflow Challenge at Nuclear Plants

The cumulative effect of multiple checks and balances at nuclear plants – inserted into the work management process over a number of years – have resulted in reduced productivity and increased operating costs. In fact, most nuclear plants' work management systems have become so complex that minor maintenance packages are almost never used, even for the simplest maintenance tasks.

"Those checks and balances have accumulated over the years because in the nuclear industry, there is no room for error," explains Nicholas Camilli, technical leader at EPRI. "As a result, when something works – even when it contains multiple redundancies and inefficiencies – it is difficult to change. There is always risk involved when making a change."

When working an outage a few years ago, he saw firsthand the inefficiencies that were taking place in the workflow process. "At EPRI, we realized there had to be a better way than taking these big three-ring binders into the field," Camilli says. It took nearly a year of brainstorming, researching and investigating workflow at other high-performance industries, such as airlines



The use of tablets and other mobile devices to support plant maintenance activities is increasing across the energy industry, including at nuclear power plants.

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Mobile work management will provide cost savings, better document control and enhanced efficiencies across all aspects of the work process. Since the first application at Clinton, Exelon has implemented the process at a second plant and expects to have six sites up and running by the third quarter of 2015.

and the military, to pull together a game plan for the process. EPRI is now beginning its third year of a three-year initiative to create a customizable mobile maintenance implementation process for the nuclear industry.

Exelon Leads with Innovation Demonstration

Exelon Generation began working with EPRI on a mobile work management system early in the process. A representative from the company's Clinton Station attended an EPRI benchmarking trip to the U.S. Department of Energy's Savannah River Site to witness field use and document lessons learned. As part of the guidance document development process, Exelon participated in an EPRI Technical Advisory Group considering various forms of mobile work management. Exelon provided early lessons learned from the development process of the new technology and valuable input into guidelines that validated the EPRI approach.

On July 29, 2014, Exelon's Clinton Station personnel completed the first U.S. commercial nuclear industry work package that was planned, executed, and closed out in a completely digital format using a mobile platform. Being Exelon's eVWP pilot site and the first to implement such technology was a risk due to the unknown challenges and hurdles that could arise, but the company was prepared with backup plans for every scenario. "The pilot went well by providing valuable lessons learned," says Dale Shaw, senior program specialist, Corporate Main-

tenance, Exelon Generation. "The newer technology that mobile work management brings far exceeds the old paper process. And the ability to communicate digitally, using color, highlights, pictures and video, takes work execution to a whole new level. Everyone is excited about it."

"This is the next step toward ensuring that Exelon remains the leader in industry innovation. Once we're fully implemented, mobile work management will provide cost savings, better document control and enhanced efficiencies across all aspects of the work process."

Exelon since has implemented the process at a second plant and expects to have six sites up and running by the third quarter of 2015, and other utilities are studying the initiative. Both Next Era Energy and Southern Company plan to implement it this year. More on the process can be found in the EPRI report, *Improving the Productivity and Execution of Maintenance with Mobile Work Management* (3002003043).

How Mobile Work Management is a Game Changer

The mobile work package implementation at Exelon sites can revolutionize the way nuclear plants conduct their maintenance, and the savings obtained from this process are important to the safe operation and viability of the nuclear industry.



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