Following the recommendations of INL researchers, the Palo Verde Nuclear Generating Station cut the duration of a refueling outage by 40 days, saving $48 million and earning a 2014 Top Industry Practice Award from the Nuclear Energy Institute.

Small changes make a big difference in nuclear plant's productivity

By Casey O'Donnell, *INL Nuclear Science & Technology intern*

Many have been told that "time is money," but perhaps few have heard the cliché and imagined $48 million on the line.

However, the Palo Verde Nuclear Generating Station staff did save $48 million when they avoided extending the duration of a refueling outage by 40 days. They did this with the assistance of several vendors including Westinghouse and Areva, and using collaboration tools developed by researchers from Idaho National Laboratory. This savings of both time and money earned Arizona Public Service the Nuclear Energy Institute's 2014 Top Industry Practice Award for Material, Management Processes, and Support Services in May.

During a refueling outage, nuclear plant workers shut down the reactor to replace used nuclear fuel. Workers take advantage of the shutdown conditions to perform safety inspections and upgrades on reactor equipment. In a 2013 report, INL researchers Shawn St. Germain, Ronald Farris and Heather Medema noted that by using technology to improve outage coordination, costly outage extensions might be reduced.

Left to right, Shawn St. Germain (INL), Ronald Farris (INL), Carlos Williams (APS), Mohammad Karbassian (APS) and Bruce Hallbert (INL).

INL researchers from the Department of Energy's Light Water Reactor Sustainability Program had this idea in mind when they observed a refueling outage at Palo Verde in spring 2013. The researchers were looking for ways to increase the efficiency of the outage work to minimize impacts to the outage schedule. They proposed a program that relied on a greater use of technology to improve communication between response teams and enhance coordination of complex issues.

Although the researchers' goals were ambitious, their suggestions were relatively simple. They proposed that the Palo Verde team keep all of its information in an up-to-date, easily accessible location. To accomplish this, the researchers introduced a network-based program that could hold photos, drawings, schedules and other updates all in one place. By using this program, Palo Verde response teams were able to communicate more effectively during the outage.

INL researchers plan to release a report this year detailing the system that was implemented at Palo Verde. Their recommendations increased efficiency in a way that’s simple and applicable to plants across the U.S. Through small changes such as those carried out at Palo Verde, INL researchers are working toward a safer, more efficient future for nuclear energy.

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Feature Archive