

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

July 15 2014, by Casey O'donnell

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

However, by following the recommendations of researchers from Idaho National Laboratory, the Palo Verde Nuclear Generating Station did save \$48 million when it cut the duration of a refueling outage by 40 days. 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 minimizing the duration of refueling outages, significant gains could be made in the energy output of [nuclear power plants](#).

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 so the plant could start back up sooner. They proposed a program that relied on a greater use of technology to improve communication between response teams and quicken the refueling process.

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.

Provided by Idaho National Laboratory

Citation: Small changes make a big difference in nuclear plant's productivity (2014, July 15)
retrieved 25 April 2024 from

<https://phys.org/news/2014-07-small-big-difference-nuclear-productivity.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--