



## Exelon-Westinghouse Team Wins Top Industry Practice Award for First-of-a-kind Jet Pump Weld Measurement

An Exelon team, supported by Westinghouse people and processes, as well as a state-of-the-art underwater scanning technology supplied by Newton Labs, has garnered a 2012 Nuclear Energy Institute (NEI) Top Industry Practice (TIP) Award. The team was selected for its successful implementation of in-vessel, non-contact measuring technology that paved the way for first-time jet pump weld modifications in the Quad Cities Unit 1 reactor.



*Exelon's Quad Cities Generating Station is a two-unit boiling water reactor (BWR) plant located in Cordova, Illinois (USA).*



*The Newton 3D scanner performing a scan on a Quad Cities Unit 1 diffuser*

The indication was discovered at an RS-2 weld location on the jet pump **13/14** set RS-2 weld in the plant's Unit 1 reactor, one of the more difficult-to-reach areas of the BWR annulus. In addition, it was the first time in U.S. nuclear industry experience an indication had been observed at this specific location on a jet pump riser and the repair would have to be completed during the upcoming outage with a very small window – just four days.

Exelon recognized the need for an accurate, non-contact, underwater measuring process despite the challenges inherent in this part of the BWR reactor: water refracts light so process that works in air may not work in water; high radiation field; tightly constrained work area; heat thermals produced by fuel in the core; turbulence of core cooling water circulation buffets measuring devices during data acquisition. Exelon's search for a solution led to Westinghouse and Newton Labs.

Newton Labs has proven underwater laser scanning technology, and Westinghouse was eager to apply the technology in this unique situation; however, mobilization to site would require a successful mock-up demo. Fortunately, Westinghouse has a full-scale BWR internals mock-up at its BWR Training Center in Chattanooga, Tennessee (USA). Within two days, the company had customized the mock-up to train employees and to test equipment for this specific and unique situation.

The Westinghouse team mobilized to site overnight and completed in-processing, set up and scanning in a 48-hour window. Despite access challenges, more than 20 scans were taken and 90 percent of targeted dimensions were obtained.

"Our team's efforts and Newton's technology resulted in precise, in-vessel measurements," said Westinghouse Program Manager Jim DuBay. "We are pleased that Exelon asked us to lend support for this uniquely challenging project and that NEI selected the project for industry-wide recognition."



*Westinghouse BWR Training Center*

For additional information about Westinghouse's role in this project, please contact Jim at (+1) 408-205-9584.