

of leaks in the plant's steam generator.



Dusek

D&D of the pressurized water reactor began in 1993, and its 10 CFR Part 50 license was terminated in 2005. In laying out some of the challenges of the Trojan decommissioning, Dusek noted that much about the project was unique, requiring original thinking to solve problems. In 1999, Trojan encountered what Dusek described as the first "hiccup" of the D&D project during the first attempt to transfer the reactor's spent nuclear fuel to dry storage. The steel fuel canisters, which had not been fully coated, had begun rusting in the spent fuel pool. The issues with the canisters were resolved, and the fuel transfer to the site's independent spent fuel storage installation (ISFSI) was completed in 2003.

Highlighting one of the successes of the Trojan decommissioning, Dusek noted the removal and disposal of the reactor vessel and internals. Portland General Electric opted to cement the reactor internals and dispose of the reactor vessel at US Ecology's facility at the Hanford Site in Washington. This helped the project come in

under budget, Dusek said, even with the additional costs associated with the spent fuel transfer. In the end, he said, the Trojan project came in more than \$30 million under budget.

Some of the keys to successful large reactor decommissioning outlined by Dusek—gathering an experienced leadership team, employing the existing workforce as much as possible, and working with community engagement panels and advisory boards—



Mellor

were reiterated by the next speaker, Russell Mellor, president of Shipsrock Consulting. Mellor discussed some of the lessons learned during the decommissioning of the Yankee Rowe and Connecticut Yankee nuclear power plants.

In reviewing the cost of decommissioning, Mellor noted that it cost \$608 million to decommission Yankee Rowe and \$871 million to decommission Connecticut Yankee. "The general takeaway is that it is not cheap," he said.

Among what he called the important general lessons of the Yankee experiences, Mellor listed safety first. Poor safety

practices, he said, lead to longer periods of stopped work and increased costs. And, he added, the actions taken after a problem emerges are significant. When faced with a setback, a D&D management team must work to understand the problem, gather as much information as possible, and follow a good decision-making matrix, he said.

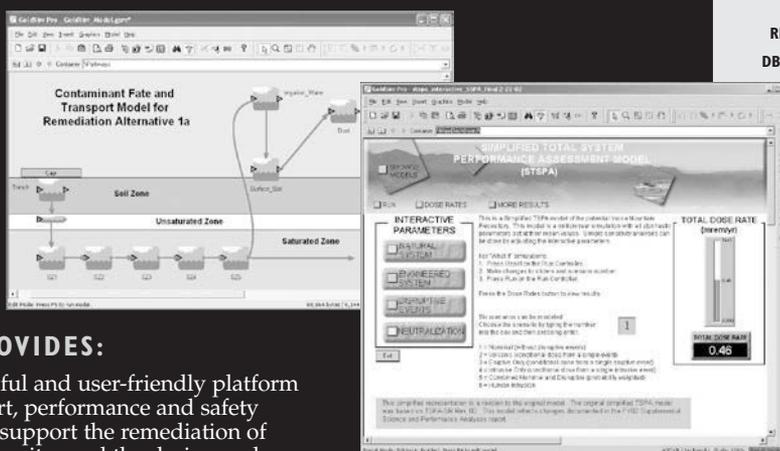
As for lessons specific to the Yankee reactors, Mellor noted the importance of controlling radioactivity and not letting contaminants migrate off-site, as well as the need to do a complete site characterization. He also stressed that proven techniques should be used as much as possible. When there is no other choice but to use new or novel techniques, he said, crews need to exhaustively mock-up test designs and methods to ensure that they will work as intended.

Given its location, fitted snugly between the Pacific Ocean and Interstate 5, the decommissioning of Unit 1 of the San Onofre Nuclear Generating Station presented an unusual challenge. Richard St.Onge, director of nuclear decommissioning projects for Black & Veatch, discussed some of the challenges of working at San Onofre, where limited site space made special demands on planning and operations.

St.Onge characterized the D&D of San Onofre-1, which closed in 1992, as a project in spent nuclear fuel storage. That is

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