

Oyster Creek reactor shut down for refueling and critical inspections

Excellent description of the value of a refuelling outage.

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The Oyster Creek Generating Station was shut down safely by its operators on Monday in a planned outage, as workers prepared to conduct inspections related to the plant's bid for a 20-year renewal of its operating license.

While the main purpose of the planned outage is to replace about one-third of the reactor's uranium fuel, the biennial event takes on greater importance this year, as it might be the second-to-last-time operators will have an opportunity to inspect critical areas before beginning the proposed period of extended operations.

To enter that period, plant operator AmerGen Energy Co. needs a license renewal from the U.S. Nuclear Regulatory Commission. Without it, the plant will close in 2009.

Among the most-watched inspections is that of the drywell liner, a radiation barrier that rusted — and became thinner because of that — during the early 1980s.

Shaped like a light bulb with its stem facing up, the liner surrounds the chamber in which atoms are split to make heat. During a serious emergency, the liner would contain highly radioactive steam and push it down into a water-filled cooling pool.

Renewal opponents say the 100-foot-tall steel liner could collapse if rust is again allowed to eat away at its lower portion. Such a collapse, they say, would rip down safety components and cause a serious radiological accident.

The liner's condition — and whether AmerGen has effective plan to find signs of aging on it before a problem arises — is also being looked at by three separate departments within the NRC.

AmerGen officials hope to ease those concerns during the refueling outage with measurements of the liner's thickness. Using ultrasound, workers will take samples of the thinnest areas in the lower region to determine the vessel's overall thickness.

According to AmerGen, the measurements should show that corrosion has not occurred in the sand bed region since the early 1990s, when workers brushed off the rust and coated the outside of the liner with an epoxy coating.

Workers also will check the entire surface of the coating for signs of deterioration.

Both the measurements and the coating inspection will be scrutinized by the NRC, which will decide whether the plant is safe enough to operate under a 20-year renewal.

Considering the infrequency with which nuclear power plants are shut down, operators plan thousands of maintenance jobs around the refueling event. Oyster Creek brought in 1,200 additional workers to help perform about 9,000 jobs.