



NRC NEWS

U.S. NUCLEAR REGULATORY COMMISSION

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No. III-06-026

June 30, 2006

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NRC ISSUES A WHITE FINDING TO EXELON FOR THE HANDLING OF UNPLANNED TRITIUM RELEASES AT BRAIDWOOD

The Nuclear Regulatory Commission staff has issued a final white finding to Exelon for multiple failures to properly evaluate the radiological impacts of unplanned releases from a pipe which goes from the Braidwood Nuclear Power Plant to the Kankakee River. The plant is operated by Exelon Generation Co.

On November 30, 2005, Braidwood staff informed the NRC that elevated levels of tritium were found on plant property. The discovery was made as additional monitoring wells were installed by Braidwood staff.

All radioactive discharges into the circulating water blowdown line, which takes non-radioactive water from the cooling lake to the river, were stopped when the contamination was discovered.

Subsequently, Braidwood expanded its sampling beyond the plant boundary, including residential wells. Outside of the plant, tritium was found in one residential drinking water well. The tritium levels there were significantly less than the U. S. Environmental Protection Agency (EPA) drinking water standard of 20,000 picocuries per liter. The remaining residential well samples had no tritium above normal background levels. The plant staff found that the area of contaminated groundwater extended 2000 to 2500 feet north of the plant boundary.

The NRC conducted inspections to characterize and evaluate the tritium contamination on plant property and in the public domain. The inspectors collected independent and confirmatory samples for independent analysis, reviewed plant procedures and records, and observed activities related to the contamination.

The NRC confirmed that unplanned releases from the pipe, which is about 5 miles long and has 11 vacuum breaker valves, occurred between 1996 and 2005. The releases were due to leakage from the vacuum breakers. The inspectors concluded that the largest leaks occurred in 1996 (about 250,000 gallons of water); 1998 and 2000 (about 3,000,000 gallons of water) during the radioactive releases through the pipe and led to the tritium contamination onsite and offsite.

The NRC's findings are not based on the radiological impact of the unplanned releases on public health. The NRC estimated the doses from the contamination to be a small fraction of the NRC's limit for doses to members of the public.

The NRC staff identified three violations of NRC regulations related to significant deficiencies in Braidwood's environmental control programs: failure to perform necessary radiological surveys; failure to adequately implement a program to assess the cumulative dose of the releases; and failure to conduct an adequate monitoring program to provide data on measurable levels of radiation and radioactivity in the environment resulting from the releases.

"We recognize that the radiological impact of these releases on public health is not a concern here," said James Caldwell, NRC Regional Administrator. "However making sure that nuclear material doesn't end up where it's not supposed to be is important. It is also important to analyze the situation and to mitigate it quickly and efficiently when an unplanned release occurs."

Exelon has performed extensive monitoring since the discovery of the contamination and has taken steps to mitigate the impact of the unplanned releases.

The NRC uses color-coded inspection findings and performance indicators to assess nuclear plant performance. The colors start with "green" and then increase to "white," "yellow" or "red," commensurate with the safety significance of the issues involved.

White findings normally result in additional NRC inspections and meetings with the utility. Based on the white finding, the NRC issued a Notice of Violation to Exelon Generation Co. for its failures to perform surveys following the historical leaks, to assess the environmental impacts, and to account for potential impact on the public, and to control licensed material. The company is required to respond to the Notice of Violation within 30 days, describing its corrective actions and steps it is taking to prevent a recurrence of the violation.

The letter notifying Exelon of the white finding will be available from the NRC's Region III Office of Public Affairs or in the NRC's online document library at:
<http://www.nrc.gov.reading-rm/admas/web-based.html> .

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