February 3, 2006

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE -- PNO-III-05-016C

This preliminary notification constitutes EARLY notice of events of POSSIBLE safety or public interest significance. The information is as initially received without verification or evaluation, and is basically all that is known by the Region III staff on this date.

Facility	Licensee Emergency Classification
Braidwood 1 and 2	___ Notification of Unusual Event
Exelon Generation Co.	___ Alert
Braceville, Illinois	___ Site Area Emergency
Docket: 50-456 and 50-457	___ General Emergency
License: NPF-72; NPF-77	_X_ Not Applicable

SUBJECT: POTENTIAL OFF-SITE MIGRATION OF TRITIUM CONTAMINATION (3rd UPDATE)

DESCRIPTION:

On January 31, 2006, the licensee informed NRC Region III (Chicago) that detectable levels of tritium had been found in groundwater in the Braidwood Dunes Forest Preserve located near the plant site. A groundwater sample from a newly drilled shallow monitoring well showed tritium levels of 24,800 picocuries per liter. The well is adjacent to vacuum breaker No. 4, one of 11 vacuum breakers along the five-mile long circulating water discharge line from the plant to the Kankakee River.

The licensee had previously identified tritium in the groundwater adjacent to three vacuum breakers (Nos. 1, 2, and 3) on the plant site, ranging from 6,000 picocuries per liter to 58,500 picocuries per liter. The licensee has also measured tritium levels up to about 247,000 picocuries per liter in deeper onsite and offsite wells in the vicinity of vacuum breakers Nos. 2 and 3. A tritium level of 7,800 picocuries per liter was also measured in groundwater adjacent to vacuum breaker No. 7, which is about 2 miles West of the Kankakee River. Monitoring wells installed near the other six vacuum breakers have shown no measurable levels of tritium. Each of these wells was drilled by the licensee for monitoring purposes and are not used for drinking water.

Previously, samples have also been collected from drinking water wells at residences near the plant. One of the wells has been identified to have measurable tritium above background. Independent laboratory results of a sample collected from this well by the NRC showed 1300 to 1500 picocuries per liter of tritium. This result is a small fraction of the EPA drinking water standard of 20,000 picocuries per liter and, as such, the levels do not represent a health and safety hazard to the public.

CONTACTS:

John House	Steven Orth
630/829-9824	630/829-9827

The licensee believes that the tritium in the groundwater is a result of past leakage from a 42-inch pipe and associated vacuum breakers which carry circulating water discharge to the Kankakee River, about five miles from the site. Several million gallons of water leaked from the discharge pipe in 1998 and 2000, and additional smaller leaks have occurred since 1996.

The circulating water discharge line carries water from the plant's cooling lake to the Kankakee River and is also used for periodic discharges of liquid radioactive effluents. The licensee has suspended liquid effluent discharges while investigating the tritium groundwater contamination and is storing tritium-containing water onsite.

The State of Illinois will be informed of this updated information. The licensee has met with local residents to communicate the situation and the licensee's actions. There has been extensive Chicago area news media coverage of the groundwater contamination, and Region III continues to respond to news media inquiries. There has been interest expressed by local officials and legislators with both the nearby Village of Godley and Will County planning public meetings on the issue.

Region III has an ongoing inspection to review of the circumstances surrounding the elevated measurements and the licensee's activities to characterize and address the elevated tritium levels. The NRC has also split samples with the licensee for both drinking water wells and monitoring wells (onsite and offsite) and sent the samples to an NRC contract laboratory for independent analysis. The analyses by the NRC's independent laboratory have been consistent with those of the licensee.

The information in this preliminary notification has been reviewed with licensee management and is current as of 2 p.m. on February 3, 2006.