

Recommend Release

Walked Around to Commission TAs on 12/1/05

~~Recommend Withhold~~

Braidwood Groundwater Tritium Issue

On November 30, 2005, the licensee informed the Braidwood resident inspectors of higher than expected tritium levels identified in on-site monitoring wells. The licensee believes that the higher levels of tritium were due to a historical event related to past vacuum breaker valve leaks in the circulating water blowdown line to the Kankakee River. (The most probable source of the tritium is from planned effluent releases that use the circulating water blowdown line as the path to the Kankakee River.) Specifically, the licensee found tritium levels as high as 58,000 picocuries/liter at the site property line. (The EPA limit for tritium in drinking water is 20,000 picocuries/liter, and the NRC release limit is 1,000,000 picocuries/liter at the unrestricted boundary.) The history of vacuum break valve leaks include:

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- November 1998 \* Vacuum Breaker Valve 3. Approximately three million gallons leaked on to the site property.
- December 2000 \* Vacuum Breaker Valve 2. Approximately three million gallons leaked on to the site property.
- May 2005 \*\* Vacuum Breaker Valve 1. Few gallons contained with the valve pit.

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Based on the groundwater tritium levels, the concentration levels of the planned releases during the 1998 time frame, and the decay rate of tritium (half life 12.3 years) the licensee believes the elevated tritium is associated with the 1998 leakage.

As a result of these indications, the licensee has contacted the following:

IEMA: Asst. Director Wright (and others)  
Corinne Gordon, Illinois District Representative (i.e., State Congresswoman)  
Tom Dahl, Illinois State Senator

Mayor of Braidwood.

They also plan to contact Illinois EPA.

The off-site area in the vicinity of where the elevated tritium levels were found include 3 houses to the west and to the north is a small pond and several undeveloped lots for sale. The licensee planned to contact the homeowners to request drinking water samples and to obtain well samples from the land-owner to the north. These samples are to be analyzed by an independent lab.

Based on the samples and the hydrology, the licensee believes the plume (body of tritiated water) is headed to the north.

Region III will be sending a Senior Radiation Specialist to Braidwood site on Tuesday (December 1, 2005) to assist the resident inspectors in their evaluation of the situation.

\* These leaks lasted several days and most likely included the more than one planned effluent release.

\*\* corrective actions for the early leaks were increased walkdowns of the circulating water blowdown.

~~Planned, No confirmation off site~~

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