



*Fact Sheet #1*

# Exelon Braidwood Nuclear Facility

## Tritium Releases and Groundwater Impacts

In working with the Exelon Dresden nuclear power plant in the fall of 2004, where tritium was detected in some on-site wells, Illinois EPA became aware of the potential for tritium contamination in groundwater at this type of facility. At the same time, the Agency was involved in the pending renewal of the industrial discharge permit for the Braidwood facility. Comments received from the Godley Park District alerted Illinois EPA to tritium detected in a shallow sand point well at the Park District.

In the spring of 2005, Illinois EPA contacted Exelon to investigate the storm water ditch that carries water to the west side of the site as a possible tritium source to groundwater. The shallow sand point well at the Godley Park District was sampled again in April of 2005. The result was below the detection limit for tritium (200 picocuries per liter (pCi/L)). At the time, tritium in the surface water in the ditch measured about 600 pCi/L. A picocurie is one trillionth of a curie. By comparison, 20,000 pCi/L is the maximum contaminant level that is allowed in public drinking water by federal regulations. During the summer of 2005, Illinois EPA tested four private wells in Godley west of the ditch. All those results were below the detection limit for tritium.

In discussions with Exelon, Illinois EPA was made aware of a November 2000 release from Vacuum Breaker #2 (VB2) on the pipeline that carries process water east to the Kankakee River. In 2005, three monitoring wells in the area of that vacuum breaker tested clean and one other tested at 400 pCi/liter. The Agency wanted to know whether this might be the source of the tritium found in the storm water ditch. We requested and received, in the fall of 2005, a work plan from Exelon for a complete investigation to define the source of tritium in the ditch.

On November 30, 2005, Exelon informed Illinois EPA that they would be sampling private wells in the area of Vacuum Breaker #3 (VB3) on the north side of the plant, where it was disclosed that another large release occurred in 1998.

On December 16, 2005, Illinois EPA issued a violation notice to Exelon for the release at VB3 where observed contamination levels that either exceeded groundwater standards in some site monitoring wells, or threatened the use of area private wells. The Agency met with representatives from Exelon on December 20<sup>th</sup>. Exelon made a presentation of the information they had developed at that time and future investigation plans to define the extent of contamination from pipeline releases. Exelon indicated that tritium has not been introduced to the pipeline since November 23, 2005 and will not be introduced to the line until the line has been tested for leaks.

A second meeting was held between Illinois EPA and Exelon on January 23, 2006. Illinois EPA asked for information to assess the potential future threat to nearby wells through computer modeling.

On February 2, 2006, Illinois EPA received a report from Exelon as part of the compliance commitment agreement. There will be an official compliance meeting on February 17 to evaluate the results of the investigation and decide on the appropriate course of action.



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**Private wells sampled to date:**

(In most cases, Exelon split samples with the Illinois Emergency Management Agency and the Nuclear Regulatory Commission, and levels of tritium were independently confirmed by those agencies.)

1. 14 private wells tested in December north of the plant along Smiley Road: All were non-detects for tritium except one well that showed 1524 pCi/liter. This is about eight percent of U.S. EPA's comparison value for a safe level in public drinking water, which is 20,000 pCi/liter.
2. In mid-January, Exelon began contacting private well owners within 1000 feet north and south of the pipeline east to the Kankakee River to obtain access to sample their wells. To date, they have sampled 19 of 29 wells, and all results are non-detects for tritium.
3. ( Ditch area on the west side of the plant – Surface water samples in March, April and May 2005 showed levels of 539, 582 and 550 pCi/liter tritium, respectively. This was at the northernmost point of the ditch near a main entrance to the plant. Exelon has sampled standing water in the ditch weekly since early December 2005 – all non-detects. In addition, the Godley Park District shallow well was tested in March 2005 and four private water wells in Godley nearest the ditch were tested in June 2005 – all non-detects.

The Illinois Department of Public Health has been provided with and has reviewed analytical results from private well tests near the Braidwood plant. They have not seen tritium levels in the well tests to date that pose a health hazard. Illinois EPA will continue to work with IDPH to evaluate any potential health impacts and keep area residents informed.

The Illinois EPA is committed to protecting the groundwater of the state as a future drinking water resource. To this end, the Agency will use available enforcement tools, as appropriate, to assure that non-compliance issues are resolved with this site.

**For more information:**

**General questions about the site, Illinois EPA Office of Community Relations:**

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**Health-related Questions:**

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Illinois EPA plans to work with the Godley Park District to establish an Information Repository for the convenience of area residents.

Exelon has more information on a web site about the tritium issue at [www.BraidwoodTritium.info](http://www.BraidwoodTritium.info)

