

June 10, 2009

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE -- PNO-III-09-004

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

Dresden 2 and 3  
Exelon Generation Co.  
Morris, IL  
Docket: 50-237 and 50-249  
License: DPR-19; DPR-25

Licensee Emergency Classification

Notification of Unusual Event  
 Alert  
 Site Area Emergency  
 General Emergency  
 Not Applicable

SUBJECT: TRITIUM LEAKAGE

DESCRIPTION:

On June 5, 2009, Exelon's Dresden Station informed the NRC Region III staff that it had found elevated levels of tritium (the radioactive isotope of hydrogen) during routine sampling of onsite monitoring locations. These locations are designed to detect changes in the level of radioactive material in the groundwater and in the plant's storm drain system. The sampling program was developed in response to the nuclear industry's Groundwater Protection Initiative.

Tritium is a naturally occurring radioactive form of hydrogen that is produced in the atmosphere when cosmic rays collide with air molecules. As a result, tritium is found in very small or trace amounts in groundwater throughout the world. It is also a byproduct of the production of electricity by nuclear power plants.

The tritium leakage discovered at Dresden had no negative impact on members of the public or plant workers. The leak is located on plant property with no indications of tritium moving towards any residential areas. The plant maintains a groundwater monitoring program which consists of routine water sampling from 71 onsite monitoring locations, as well as several offsite locations. The results of monitoring the wells located between the leak and the public have not shown elevated levels of tritium.

The onsite elevated tritium is suspected to be the result of an active leak in underground piping associated with the Condensate Storage Tank (CST) system which holds water for use in the plant. The suspected piping leak is located near the center of the plant site. In 2004 and 2006, other underground piping associated with the CST system had also leaked and was replaced.

Samples collected by the utility on June 2 - 6, 2009, showed tritium concentrations of 3.2 million picocuries per liter (pCi/L) from an onsite groundwater testing well near the suspected leak location and 500,000 pCi/L in an adjacent storm drain line. No other radioactivity has been detected in the water. Routine sampling performed in May 2009 did not identify any indication of leakage.

The storm drain system in the vicinity of the suspected leak has been plugged to prevent impacted storm drain water from migrating offsite. Water that collected in the storm drain

system and in adjoining areas that are being excavated to examine underground piping is being pumped into storage containers. The collected water will eventually be processed through the plant's waste processing system.

Excavation of the area near the condensate storage tank continues as part of the plant's efforts to identify and then isolate the leak. The plant is also performing tests to assess piping integrity.

NRC Resident inspectors and Region III staff are monitoring the utility's activities.

Exelon reported the leak to the State of Illinois and the NRC on June 6, 2009, and issued a news release on June 7, 2009. The information in this preliminary notification has been reviewed with licensee management and is current as of 11:30 a.m. Central Time on June 10, 2009.

CONTACTS:

Wayne Slawinski  
630/829-9820

Steven Orth  
630/829-9827