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Exelon Nuclear

June 4, 2007
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U. S. Nuclear Regulatory Commission
Region III
2443 Warrenville Road
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Lisle, IL 60532-4352

Braidwood Station, Units 1 and 2
Facility Operating License Nos. NPF-72 and NPF-77
NRC Docket Nos. STN 50-456 and STN 50-457

Subject: 30-Day Report – Radiological Release Below Regulatory Reporting Limits

The attached report of a radiological release below regulatory reporting limits is being submitted in accordance with the 30-day requirement per Station procedure LS-AA-1120, "Exelon Reportability Manual RAD 1.34 for Release of Radionuclides at Nuclear Power Plants."

No regulatory commitments are being made in this submittal.

For additional information regarding this report, contact Mr. Dale Ambler, Regulatory Assurance Manager, at (815) 417-2800.

Sincerely,

Gregory A. Boerschig
Plant Manager
Braidwood Generating Station

Attachment: 30-Day Voluntary Report

On May 4, 2007 Braidwood Station made a notification to the Illinois Emergency Management Agency (IEMA) per RAD 1.34 of the Exelon Reportability Manual for an approximate 5-gallon spill of water onsite, which was later determined to contain tritium. On April 23, 2007, during movement, within the protected area, of a Sea/Land container containing drums and bags of radioactive material, a small volume of liquid (approximately 5 gallons) was observed exiting from the back of the container to the ground below. Work was immediately stopped and a soil sample was taken. This initial soil sample identified no gamma emitting radionuclides and there was no reason to believe the liquid was radioactive. However, as a precaution, a soil sample was sent to an offsite laboratory for tritium analysis. On May 4, 2007, preliminary results of the initial soil sample were received indicating the presence of tritium (123,837 pCi/l). Later on May 4, 2007 confirmatory sampling of water within the Sea/Land container validated the presence of tritium at 561,300 pCi/l.

There is no indication that the tritiated water that contacted the soil caused an unmonitored release of radioactive material from the site by traveling either overland or via groundwater. The Station will be tracking this spill under 10 CFR 50.75g and will be characterizing any dose considerations per the Offsite Dose Calculation Manual (ODCM).

Additional soil samples were taken and analyzed along the path that the Sea/Land container took as it was being moved indoors. Shallow ground water samples were taken from around the concrete pad that held the container while it was stored on site. None of these samples indicate the possibility of migration of tritium in detectable concentrations off site. In addition, Exelon has installed two new permanent monitoring wells approximately 200 feet down gradient of the storage pad. These wells are being added to the Radiological Groundwater Protection Program (RGPP) for long-term monitoring.

The Hydrogeologic Investigation Report completed in September 2006 established the groundwater gradients around the Braidwood site. The report concluded that groundwater flows northerly in the area of the spill so the additional down gradient wells will provide adequate and early detection of any tritium migrating out of the Protected Area. These wells are several hundred feet upgradient of the site property line.