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September 17, 2001
BW010097

U.S. Nuclear Regulator Commission
ATTN: Document Control Desk
Washington DC 20555

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: Environmental Non-Routine Event Report for4 Exelon Generation Company, LLC-
Braidwood Station

In accordance with the 30 day notification requirements of Facility Operating Licenses NPF-72 and NPF-77, Appendix B, Environmental Protection Plan, Sections 4.1, "Unusual or Important Environmental Events," and 5.4.2, "Nonroutine Reports," Braidwood Station is submitting this Environmental Non-Routine Event Report due to a fish kill that occurred on the Braidwood cooling lake.

Event Description

On August 27, 2001, operators performing routine rounds noticed a large number of dead fish (primarily gizzard shad) at the lake screen house intakes. The Illinois Department of Natural Resources (IDNR) was notified. Pursuant to 10 CFR 50.72 (b)(2)(xi), "Immediate notification requirements for operating nuclear reactors, non-emergency events," an ENS notification was made. On August 28, 2001, an independent lake specialist, at the request of Exelon, performed a lake study to determine temperature, oxygen and pH profiles in the Braidwood cooling lake.

Analysis and Evaluation

During the time period surrounding the discovery of the fish kill, Units 1 and 2 were operating in Mode 1 at full power. Six circulating water pumps were running to provide a circulation in the cooling lake of approximately 1.4 million gallons per minute. Two circulating water makeup pumps were providing approximately 44,000 gallons per minute of makeup water to the cooling lake from the Kankakee River. Blowdown to the Kankakee River was in operation at approximately 12,500 gallons per minute.

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On the day of the fish kill, the lake temperature had increased by about 3 °F. The prolonged high lake temperatures this summer had caused a noticeable reduction in the algae levels in the lake. It is theorized that the relatively sudden rise in lake temperature on this day, coupled with lower oxygen levels in the lake caused by algae depletion, was the main cause of the fish kill. The lake specialist confirmed lower than normal oxygen levels in the lake at the time of his lake study.

The cooling lake is classified by the State of Illinois as a treatment facility for the dissipation of waste heat. The station's National Pollutant Discharge Elimination System, (NPDES) Permit No. IL0048321 issued by the Illinois Environmental Protection Agency contains provisions reflecting this classification. In accordance with the permit, no state or federal water quality standards are applicable to the lake. Effluent standards are applied to the process streams discharging into the lake. Effluent, thermal, and chemical standards are applied to the lake blowdown effluents to the Kankakee River. None of these standards were violated during this period.

Probable Cause of Event

The fish kill was attributed to the sudden increase in the lake temperature, coupled with the depleted oxygen levels in the lake. Most of the fish that were killed were gizzard shad which are extremely sensitive to environmental changes within the cooling lake.

Corrective Actions

There are no specific corrective actions planned to avoid the periodic fish kills due to lake thermal conditions. These are due to environmental factors largely out of station control.

Actions to Prevent Recurrence

There are no specific corrective actions planned to prevent recurrence of events of this type. There are no controllable measures that can be taken to quickly reduce the temperature of the cooling lake in that reduction of the heat input by derating the units would have a negligible short-term effect on the temperature of the cooling lake. The event was due to environmental conditions largely out of station control.

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Agencies Notified and Preliminary Responses

The IDNR was notified of the fish kill. Their preliminary response was to perform a fish count to determine the extent of the kill and the species affected.

Should you have any questions concerning this letter, please contact Amy Ferko, Regulatory Assurance Manager, at (815) 417-2699.

Respectfully,


James D. von Suskil
Site Vice President
Braidwood Station

Attachment

cc: Regional Administrator - NRC Region III
NRC Senior Resident Inspector - Braidwood Station

bcc: Project Manager NRR - Braidwood Station
Nicholas Reynolds - Winston & Strawn
Office of Nuclear Facility Safety – Illinois Department of Nuclear Safety
Director - Licensing - Midwest Regional Operating Group
Regulatory Assurance Manager - Braidwood Station
Manager, Licensing and Compliance - Braidwood and Byron Stations
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