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Braidwood Station
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July 28, 2005
BW050067

U.S. Nuclear Regulatory Commission
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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 for 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, "Non-routine Reports," Braidwood Station is submitting this Environmental Non-Routine Event Report on a thermal fish kill that occurred on the Braidwood cooling lake.

Event Description

On June 28, 2005, a thermal fish kill was identified on the station cooling lake. The initial estimate reported that approximately 10,000 fish had been killed, but the fish species were not listed. 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 June 28, 2005, a representative from IDNR performed an onsite assessment of the fish kill.

Analysis and Evaluation

During the period of June 25-28, 2005, 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. Three circulating water makeup pumps were providing approximately 48,000 gallons per minute of makeup water to the cooling lake from the Kankakee River. Circulating water blowdown to the Kankakee River was in service at approximately 5,000 gallons per minute.

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A review of average circulating water inlet temperatures for the period June 25-28, 2005 showed that four temperature peaks occurred:

- 93.0°F on June 25, 2005, between 1740 and 1850
- 95.7°F on June 26, 2005, between 1300 and 1520
- 96.3°F on June 27, 2005, between 1430 and 1550
- 95.2°F on June 28, 2005, between 1530 and 1610

These temperatures are above the upper lethal temperatures for the Thread fin and Gizzard shad living in the lake. IDNR performed a survey of the lake but did not perform an official count of the fish lost.

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 thermal fish kill was attributed to high lake temperatures. Prolonged high air temperatures, high humidity and low wind speeds combined to preclude heat dissipation on the cooling lake, resulting in an increase in temperatures above the upper lethal temperatures for the Thread fin and Gizzard shad living in the cooling lake. At no time did the Braidwood Lake temperature exceed the Technical Specification Limit identified in Technical Specification 3.7.9, "Ultimate Heat Sink".

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.

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Agencies Notified and Preliminary Responses

The IDNR was notified of the thermal fish kill. They performed an initial survey of the lake but did not choose to perform a formal count of the fish that were lost.

The NRC was notified pursuant to 10 CFR 50.72 (b)(2)(xi).

Should you have any questions concerning this letter, please contact Dale Ambler, Regulatory Assurance Manager, at (815) 417-2800.

Respectfully,



Gregory A. Boerschig
Plant Manager
Braidwood Generating Station

Attachment

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