

August 17, 2010

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE – PNO-III-10-014

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.

|                           |                                                        |
|---------------------------|--------------------------------------------------------|
| <u>Facility</u>           | <u>Licensee Emergency Classification</u>               |
| Braidwood Units 1 and 2   | <input type="checkbox"/> Notification of Unusual Event |
| Exelon Generation Co.     | <input type="checkbox"/> Alert                         |
| Braceville, IL            | <input type="checkbox"/> Site Area Emergency           |
| Docket: 50-456 and 50-457 | <input type="checkbox"/> General Emergency             |
| License: NPF-72; NPF-77   | <input checked="" type="checkbox"/> Not Applicable     |

SUBJECT: SHUTDOWN OF BRAIDWOOD REACTORS UNIT 1 & 2

DESCRIPTION:

On August 16, 2010, Exelon's Braidwood Station informed the NRC headquarters operation center, the resident inspectors, and Region III (Chicago) that Unit 2 automatically tripped as the result of a main generator fault that occurred at approximately 2:00 a.m. CDT. Following the Unit 2 reactor trip, the reactor shut down as designed. All safety systems functioned normally except for a failed open auxiliary feedwater flow control valve. Operators quickly detected this problem and manually utilized a redundant valve in the flow path to control auxiliary feedwater flow to the Steam Generator.

Thirteen minutes later, Unit 1 automatically tripped on a turbine trip due to a loss of main condenser vacuum. The loss of main condenser vacuum was caused by the tripping of two of the three main condenser circulating water pumps. The main condenser removes turbine heat via lake water. During the summer, three circulating water pumps are used to cool the main condensers at the Braidwood Station. The degraded main condenser vacuum on Unit 1 caused plant operators to utilize the Unit 1 Steam Generator Atmospheric Power Operated Relief Valves to maintain reactor coolant temperature. The steam release created a loud noise, which could be heard by plant neighbors. The steam contained tritium at concentrations lower than the regulatory limit for the public.

The NRC resident inspectors and specialists in the NRC's Region III office in Lisle, Ill., are closely evaluating the situation. Agency resident inspectors, who are stationed at the plant, are verifying that the utility is addressing the causes of both reactors being shut down; and the utility's repair plans. They will continue to monitor the plant's activities.

The licensee notified the State of Illinois on August 16, 2010. The information in this preliminary notification has been reviewed with licensee management and is current as of 10:00 a.m. on August 17, 2010.

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