

July 22, 2002

Mr. John L. Skolds, President
Exelon Nuclear
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3 - GENERIC LETTER 96-06, "ASSURANCE OF EQUIPMENT OPERABILITY AND CONTAINMENT INTEGRITY DURING DESIGN-BASIS ACCIDENT CONDITIONS" (TAC NOS. M96806 AND M96807)

Dear Mr. Skolds:

On September 30, 1996, the U.S. Nuclear Regulatory Commission (NRC) issued Generic Letter (GL) 96-06, "Assurance of Equipment Operability and Containment Integrity During Design-Basis Accident Conditions," which included a request for licensees to evaluate cooling water systems that serve containment air coolers to assure that they are not vulnerable to water hammer and two-phase flow conditions, and to thermally-induced overpressurization.

In letters dated October 28, 1996, and January 28, 1997, Commonwealth Edison Company (ComEd or licensee) submitted its 30-day and 120-day responses to GL 96-06, respectively, for Dresden Nuclear Generating Station, Units 2 and 3. A telephone conference was held on March 6, 1997, between the NRC and the licensee, to discuss the issues relating to GL 96-06. In a letter dated March 28, 1997, the licensee supplemented its response to GL 96-06 for Dresden Station Units 2 and 3, to provide additional details on the work done, and plans and status of work on implementing hardware changes. On May 30, 1997, the licensee sent in another supplemental response to provide additional details on the schedule of modifications to be done.

On November 13, 1997, NRC issued supplement 1 to GL 96-06 to inform the licensees about ongoing efforts and new developments associated with the GL 96-06 and to provide additional guidance for completing corrective actions. On February 6, 1998, a letter was issued to the licensee to indicate that NRC is receptive to licensees revising their scheduler commitments for resolving GL 96-06 issues, if justified. On April 27, 1998, a request for additional information (RAIs) was sent to the licensee.

On May 16, 1998, the licensee provided refueling outage 15 (D2R15) summary for Dresden, Unit 2. It showed the necessary modifications, to eliminate thermally induced overpressurization, were installed. In a letter dated July 24, 1998, the licensee provided the response to RAIs, which were requested on April 27, 1998. On March 29, 1999, the licensee provided refueling outage 15 (D3R15) summary for Dresden Unit 3. It showed the necessary modifications, to eliminate thermally induced overpressurization, were installed. On September 10, 1999, the Region issued Dresden Inspection Reports 50-237/99012 and 50-249/99012.

The inspectors verified that the corrective actions discussed in the LER for each of these penetrations were completed or near completion.

Subsequent to the date of the original correspondence with the licensee on the issue of GL 96-06, ComEd was merged into Exelon Generation Company, LLC (Exelon). By letter dated February 7, 2001, Exelon informed the NRC that it assumed responsibility for all pending NRC actions that were requested by ComEd.

The two requested actions in GL 96-06 were to address: (1) Water Hammer and Two-Phase Flow Conditions, and (2) Thermally-Induced Overpressurization. The following evaluations address these two requested actions.

(1) Water Hammer and Two-Phase Flow Conditions

The licensee provided its assessment of the water hammer and two-phase flow issues for the Dresden units in a letter dated January 28, 1997, and additional information was submitted in letters dated March 28, 1997, and July 24, 1998. Based on the NRC staff's review of the information that was provided, it is our understanding that: (a) the drywell coolers are not required for accident mitigation, and (b) Dresden Abnormal Operating Procedure DOA 3700-01, "Loss Of Cooling By Reactor Building Closed-Cooling Water (RBCCW) System," has been revised to require isolation of RBCCW system flow to the drywell coolers, if a loss-of-coolant accident has occurred and drywell pressure is greater than 2 psig. This eliminates the potential for water hammer or two-phase flow during the event scenarios of interest. The NRC staff finds the licensee's evaluations to be reasonable and acceptable.

(2) Thermally-Induced Overpressurization

In its submittal of January 28, 1997, the licensee identified 12 containment penetrations on Unit 2, and 11 containment penetrations on Unit 3, which were potentially vulnerable to a water solid volume that may be subjected to an increase in pressure due to heating of trapped fluid. In this submittal, the licensee determined that these penetrations were operable but that additional corrective actions would be necessary.

In its submittal of March 28, 1997, the licensee determined that one of these identified penetrations in each of Unit 2 and 3 were actually not vulnerable to thermally-induced pressurization because the measured temperatures during normal operating conditions exceeded the limiting accident temperature conditions.

In its submittal of May 30, 1997, the licensee summarized the long-term actions taken or planned to resolve the thermally-induced pressurization concerns on the remaining penetrations. In its submittals of May 16, 1998, and March 29, 1999, the licensee confirmed that all of these actions had been taken for Units 2 and 3 for all remaining penetrations.

The licensee installed either check valves or relief valves on both units or revised the procedures to relieve the overpressure on the penetrations. The licensee installed a blind flange on Unit 2 to isolate the unused piping from the active part of the control rod drive (CRD) system and drained the water in one penetration to eliminate the potential for thermally induced pressurization. The staff finds that the licensee's corrective actions and evaluations provide

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an acceptable resolution for the issue of thermally-induced pressurization of piping runs penetrating containment.

The NRC staff concludes that the licensee has adequately addressed all the actions requested in GL 96-06. This letter closes out the staff's actions on the generic letter and TAC Nos. M96806 and M96807. If you have any questions, please contact me at 301-415-2863, or by e-mail through the internet at lwr@nrc.gov.

Sincerely,

/RA/

Lawrence W. Rossbach, Project Manager, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-237 and 50-249

cc: See next page

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