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ComEd

June 19, 1998

JMHLTR: #98-0173

U. S. Nuclear Regulatory Commission
Attn.: Document Control Desk
Washington, D. C. 20555-0001

Subject: Response to Request for Additional Information Regarding the Response to Generic Letter 97-04, "Assurance of Sufficient Net Positive Suction Head for Emergency Core Cooling and Containment Heat Removal Pumps," Dresden Nuclear Power Station, Units 2 and 3
NRC Docket Nos. 50-237 and 50-249

References
a) L. W. Rossbach (USNRC) to O. D. Kingsley (ComEd) letter dated May 22, 1998 "Request for Additional Information (RAI) for Dresden Nuclear Power Station, Units 2 and 3 (TAC NOS. M99985 and M99986)"

b) J. Hosmer (ComEd) to USNRC letter dated January 5, 1998, "90 Day Response to Generic Letter 97-04"

The purpose of this letter is to provide the Commonwealth Edison (ComEd) Company response to the Reference a) NRC Request for Additional Information (RAI) concerning our response to Generic Letter 97-04, "Assurance of Sufficient Net Positive Suction Head for Emergency Core Cooling and Containment Heat Removal Pumps," for Dresden Station. Answers to the RAI questions are provided in Attachments 1, 2 and 3.

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Any questions related to this matter should be addressed to Frank Spangenberg, Regulatory Assurance Manager, at (815) 942-2920 extension 3800.

Sincerely,

J.M. Heffley
Site Vice President
Dresden Station

Attachment:

cc: Regional Administrator – Region III
K. Reimer, NRC Senior Resident Inspector - Dresden
Office of Nuclear Facility Safety - IDNS

**ATTACHMENT 1**
**RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION**
**USNRC GENERIC LETTER 97-04**

**NRC Question #1**

Why is the net positive suction head required (NPSHR) for low pressure coolant injection (LPCI) short term listed in Table 1 of the GL 97-04 response greater than that used and approved in License Amendment Nos. 157 and 152 for Dresden, Units 2 and 3 (i.e., 35.8 ft. versus 31.5 ft.)?

**ComEd Response to Question #1**

The GL 97-04 response listed the limiting case for each ECCS system. The limiting short-term case discussed in License Amendment Nos. 157 and 152 resulted in the minimum NPSH margin for any of the ECCS pumps and was determined to be a double-ended break of the reactor recirculation suction line with all 4 LPCI pumps injecting through the break, 2 Core Spray pumps cooling the core, 60% thermal mixing of the break flow with the drywell atmosphere, and the inclusion of passive heat sinks. Specifically, a minimum NPSH margin of 7.0 feet for the Core Spray pumps was calculated in the first 240 seconds post-accident. For this case, the 4 LPCI pumps are operating at a flow of 5150 gpm per pump, with an NPSHR of 31.5 feet, as presented in the License Amendment.

In response to Question 2 of GL 97-04, the minimum NPSH margin for the LPCI pumps short-term (240 seconds) was presented as 10.4 feet. This occurs with 3 LPCI pumps injecting through the break and 2 Core Spray pumps cooling the core. For this case, the limiting LPCI pump is operating at a flow of 5570 gpm, with an NPSHR of 35.8 feet and the Core Spray minimum NPSH margin of 9.6 feet was calculated. While this is the limiting case for LPCI, it does not represent the limiting case for the ECCS pumps as discussed above.

Note; since pump cavitation may occur due to negative NPSH margins after 240 seconds, as approved in the License Amendment, all short-term information provided in response to GL 97-04 was limited to the first 240 seconds post-accident.

**NRC Question #2**

The overpressure required and available as presented in response to Question 4 is not consistent with that reviewed and approved in License Amendment Nos. 157 and 152, especially for the short-term case. Explain this difference.

**ComEd Response to Question #2**

As stated in the response to Question 4, the overpressure available provided is the actual minimum pressure predicted in the containment analysis performed by General Electric. In the short-term, this corresponds to 11.7 psig. The value of 9.5 psig corresponds to the amount of overpressure requested by Dresden and approved by the NRC in License Amendments Nos. 157 and 152. Similarly in the long-term, the actual minimum pressure predicted by the analysis at the time of peak pool temperature and minimum NPSH margin is 2.9 psig, while the amount requested and approved is 2.5 psig.

The values for overpressure required were taken directly from the calculations prepared for the License Amendment submittals. Specifically, for the limiting 3 LPCI/2 CS throttled case, Calculation DRE97-0010 indicates a containment overpressure for LPCI of 2.1 psig and for CS of 0.2 psig. Therefore, no inconsistencies exist.

**NRC Question #3**

Calculations DRE97-0012 and DRE97-0010, Revision 0 were reviewed as part of License Amendment Nos. 157 and 152. Revision 1 of these calculations is listed as a reference in the GL 97-04 response. Explain the differences between Revision 0 and Revision 1.

**ComEd Response to Question #3**

The calculations were revised to:

- reflect approval of License Amendment Nos. 157 and 152
- include the containment overpressure approved by the staff
- adjusted short-term ECCS pump flow prediction when pumps are cavitating (240-600 seconds) to incorporate the approved overpressure