From: Lawrence Rossbach
To: Allan.haeger@Exeloncorp.com
Date: 7/25/01 5:57PM
Subject: Additional EPU questions from Plant Systems

Our review of the Dresden and Quad Cities extended power uprate (EPU) amendment requests has identified additional questions in the plant systems area. These questions are attached. We did not identify any proprietary information in these questions. Please identify any information in these questions that you consider proprietary, otherwise they may be released to the public within one week. Please let me know if you would like a call to discuss them.

CC: Anthony Mendiola; Ralph Architzel; Ron Young; Stewart Bailey

Docket Nos. 50-237, 50-249, 50-254, 50-265

DRESDEN AND QUAD CITIES EXTENDED POWER UPRATE
REQUEST FOR ADDITIONAL INFORMATION - PLANT SYSTEMS

The following questions apply to both Dresden and Quad Cities:

34. Section 4.1.1.2 on Containment Airspace Temperature response notes that the limiting accident for drywell airspace temperature is the small steam line break. Provide the peak drywell airspace temperature and the peak drywell shell temperature for the limiting case. Include an assessment of the impact of the EPU, e.g., are changes (if any) principally due to different codes or due to the increased power. Provide additional detail if the peak drywell airspace temperature is significantly above the drywell shell temperature structural limit (i.e. more than the 10 °F exceedance for the DBA-LOCA for 10 seconds).

35. Section 4.1.1.2 on Containment Airspace Temperature response provides the peak value of wetwell airspace and suppression pool temperatures during a DBA-LOCA. Is the DBA-LOCA the limiting DBA/transient for these parameters? If not, provide the details of the limiting accident/transient considering the effects of EPU.

36. Section 4.4, "Main Control Room Atmosphere Control System" (MCRACS)

a. Explain how the increase in heat gain to the control room as a result of EPU for both normal and emergency modes is insignificant.

b. Part of the second paragraph reads as follows: "The effect of EPU in combination with a 24 month fuel cycle on the post-LOCA iodine loading on the control room charcoal filter was evaluated. The post-LOCA iodine releases collected on the control room intake filters following EPU was estimated using the 0-2 hr X/Q values for the entire duration of the event, assuming no deposition or holdup of iodines in the main steam lines or in the secondary containment."

   Provide the reference which serves as the basis for the evaluation and its assumptions, as noted above.

c. State the filter efficiencies, for HEPA and charcoal filters of the MCRACS, which continue to be effective under EPU conditions.

d. State what regulatory requirements continue to be met by MCRACS performance under EPU conditions (e.g., 10 CFR 50, Appendix A, General Design Criteria 19).

e. Provide an example of calculated total iodine loading on MCRACS charcoal filters under EPU conditions and how these results compare with the allowable limit of 2.5 mg/gm of activated carbon, identified in Regulatory Guide 1.52.

37. Section 4.5, "Standby Gas Treatment System"

a. Part of the second paragraph reads as follows: "Despite the increase in iodine loading as a result of EPU and 24-month fuel cycles, test work at high iodine loading supports iodine removal efficiencies in excess of 99% at 60 mg/gm".

Briefly explain the test work at high iodine loadings (on SGTS charcoal filters) that supports iodine removal efficiencies in excess of 99% at 60 mg/gm of activated carbon. State filter efficiencies, for HEPA and charcoal filters of the SGTS, which continue to be effective under EPU conditions.

b. State what regulatory requirements continue to be met by SGTS performance under EPU conditions.

c. Part of the third paragraph reads as follows: "The amount of cooling airflow needed to limit the adsorber temperature increase due to fission product decay heating is affected by EPU. The required minimum airflow increases from 48 cfm to 74 cfm, well below the available design flow of 300 cfm".

Briefly describe how the required minimum airflow increase (from 48 cfm to 74 cfm) was determined.

38. Section 6.6, "Power Dependent Heating, Ventilation, and Air Conditioning"

a. Provide an example showing how the increase in feedwater process temperature and the increase in the recirculation pump motor horsepower are within the margins of the heating, ventilation, and air conditioning (HVAC) system cooling capacity.

b. Provide an example showing how the ECCS pump room coolers have adequate capacity to maintain the design basis ECCS room temperature.

c. Explain how the heat load resulting from a temperature increase of approximately 9 degrees-F in the condensate pump area is accommodated by cooling systems, such that environmental operating temperature remains within design limits.

d. The fifth paragraph reads as follows: "Based on a review of design basis calculations and environmental qualifications design temperatures, the design of the HVAC is adequate for the EPU".

Provide a worst-case example demonstrating how based on a review of design basis calculations and environmental qualification design temperatures, the total heat load increase is within the design margin at EPU conditions. State where the comparison with evaluations at EPU conditions is documented and would be available to the staff for review upon request.

39. Explain significant differences in the design and operation of the Dresden and Quad Cities HVAC systems and how such differences may impact the system evaluations at EPU conditions.