

November 21, 2000

Mr. Oliver D. Kingsley, President
Nuclear Generation Group
Commonwealth Edison Company
Executive Towers West III
1400 Opus Place, Suite 500
Downers Grove, IL 60515

SUBJECT: BYRON AND BRAIDWOOD - REQUEST FOR ADDITIONAL INFORMATION
REGARDING THE POWER UPRATE REQUEST (TAC NOS. MA9428, MA9429,
MA9426 AND MA9427)

Dear Mr. Kingsley:

By letter dated July 5, 2000, Commonwealth Edison Company (ComEd) requested amendments to the licenses for Byron Station, Units 1 and 2, and Braidwood Station, Units 1 and 2. The proposed changes would revise the maximum power level specified in each unit's license and the definition of rated thermal power in the technical specifications.

By letter dated October 19, 2000, we sent a Request for Additional Information (RAI) transmitting questions provided by several of the Nuclear Regulatory Commission (NRC) technical staff who are reviewing the ComEd request. Enclosed is the second RAI which contains questions from other NRC staff members. During a meeting between the ComEd and NRC staffs on September 20, 2000, ComEd was informed that there would be questions forthcoming in the technical areas of spent fuel pool and containment analyses. The enclosed questions have been provided informally to your staff.

In order for us to support the ComEd review schedule, RAIs are being forwarded serially. We do expect to transmit additional questions.

Please respond to the enclosed RAI within 30 days of receipt of this letter. Also note that because ComEd's response to the enclosed RAI is considered a supplement to the July 5, 2000, amendment application, we request that it be submitted under oath and affirmation in accordance with 10 CFR 50.90 and 10 CFR 50.30(b).

Please contact me if there are any questions regarding this RAI.

Sincerely,

/RA/

George F. Dick, Jr., Project Manager, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. STN 50-454, STN 50-455
STN 50-456, STN 50-457

Enclosure: RAI

cc w/encl: See next page

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Docket Nos. STN 50-454, STN 50-455
STN 50-456, STN 50-457

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Enclosure: RAI

cc w/encl: See next page

ACCESSION NO.: ML003770709

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Byron/Braidwood Stations

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REQUEST FOR ADDITIONAL INFORMATION
RELATED TO AN INCREASE IN RATED THERMAL POWER
COMMONWEALTH EDISON COMPANY
BYRON STATION, UNITS 1 AND 2
BRAIDWOOD STATION, UNITS 1 AND 2
DOCKET NOS. STN 50-454, STN 50-455, STN 50-456 AND STN 50-457

The NRC staff is reviewing the July 5, 2000, request from Commonwealth Edison Company (ComEd, the licensee) to revise the maximum thermal power specified in the licenses for Byron Station, Units 1 and 2, and Braidwood Station, Units 1 and 2. By letter dated October 19, 2000, the staff sent a Request for Additional Information (RAI) transmitting questions provided by several of the NRC technical staff who are reviewing the ComEd request. This second RAI contains questions from other NRC staff members. Because these questions are in technical areas not addressed in the previous RAI, they are being labeled as a continuation of the previous questions.

Question Set H

- H.1 During normal (planned) refueling operations at the Byron and Braidwood plants, entire cores are routinely discharged to the spent fuel pool (SFP). Please provide the following information regarding the SFP cooling, assuming a single active failure* during the normal (planned) full core offload refueling outages.
- a. Justifications to demonstrate that the worst single active failure (e.g., failure of an emergency diesel generator, electrical bus, SFP cooling pump, etc.) has been identified.
 - b. Prior to the core offload, how many trains of the SFP cooling system are available and operable?
 - c. A curve to show the SFP temperature as a function of time during the planned refueling outage with a full core offloaded to the SFP.
- H.2 ComEd considered a full core offload, which causes the SFP temperature to exceed the Standard Review Plan (SRP) guidance for SFP temperature limit for a duration over 500 hours, during normal (planned) refueling outages as a temporary condition. In order to determine whether adequate SFP cooling exists to ensure that the intent of SRP, Section 9.1.3, guidance is met, the staff requests a discussion of the rationale for establishing a full core offload during planned (normal) refueling outages as a temporary

*SRP, Section 9.1.3, "Spent Fuel Pool Cooling and Cleanup System," provides the guidance (e.g., assuming a single active failure) to maintain the SFP water temperature at or below 140 degrees Fahrenheit during normal (planned) refueling outages.

ENCLOSURE

condition. Please provide and justify the acceptance criteria for defining a full core offload during normal refueling outages as a temporary condition.

- H.3 During normal (planned) refueling outages with a full core discharged to the SFP, the calculated SFP peak temperature (assuming a single active failure) is 162.7 °F which exceeds the guidance of 140 °F described in Standard Review Plan (SRP) Section 9.1.3 for SFP temperature, and the guidance of 150 °F described in American Concrete Institute (ACI) 349-97, "Nuclear Safety Structures," for concrete structures. The durations of the SFP temperature exceeding the SRP guidance and ACI guidance are expected to be approximately 580 hours and 120 hours, respectively (Figure 5.8.2, of Attachment E of ComEd's submittal of March 23, 1999, "Request for an Amendment to Technical Specifications to Support Installation of New Spent Fuel Pool Storage Racks at Byron and Braidwood Stations"). Please provide the following information:
- a. A detailed discussion to justify why the higher pool temperature of 162.7 °F is acceptable during planned refueling outages.
 - b. The effects of the higher pool temperature during this duration on equipment and systems.
 - c. Detailed discussion of the thermal stress analyses (e.g., assumptions, analytical models, etc.) of the pool structures should be provided in Section 9.5.3, "Spent Fuel Pool."
- H.4 In order to determine whether adequate controls exist to ensure the guidance of Standard Review Plan, Section, 9.1.3, are met, the staff needs to understand the provisions established or to be established in plant operating procedures to monitor and control the SFP water temperature during full-core offload events. Please provide the following information:
- a. The frequency that the local temperature indicators for SFP water temperature will be monitored.
 - b. The setpoint of the high water temperature alarm for the SFP.
 - c. Information supporting a determination that there is sufficient time for operators to intervene in order to ensure that the temperature limit of 150 °F will not be exceeded.
 - d. The mitigative actions (i.e., prohibit fuel handling, aligning other systems to provide SFP cooling, etc.) to be taken in the event of a high SFP water temperature alarm.
- I.2 For the loss-of-coolant accident (LOCA) and main steamline break (MSLB) Containment Analyses (Section 6.4 and 6.5 of uprate report), please indicate key input parameters that are different from updated final safety analysis report (UFSAR) besides power related and the effect on the peak containment pressure and temperature.