

September 11, 2003

MEMORANDUM TO: Anthony J. Mendiola, Chief
Project Directorate, III-2
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

FROM: Mark P. Rubin, Chief **/RA/**
Safety Program Section
Probabilistic Safety Assessment Branch
Division of Systems Safety and Analysis
Office of Nuclear Reactor Regulation

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION (RAI) REGARDING ONE-
TIME EXTENSION OF THE ESSENTIAL SERVICE WATER TRAIN
COMPLETION TIME FOR BRAIDWOOD, UNIT 1 AND BYRON, UNITS 1
AND 2 (TAC MB9545, MB9547, MB9548)

The Probabilistic Safety Assessment Branch (SPSB) has reviewed Exelon's risk assessment submitted in support of its request for license amendments regarding one-time extensions of the essential service water train completion times for Braidwood, Unit 1 and Byron, Units 1 and 2. SPSB has identified areas where additional information is needed to complete its review. The Request for Additional Information is provided as an attachment to this memorandum.

ATTACHMENT: As stated.

CONTACT: Martin Stutzke, NRR/DSSA/SPSB
(301) 415-4105

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NAME	MAStutzke:nxh2	MPRubin
DATE	09/11/03	09/11/03

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**SPSB REQUEST FOR ADDITIONAL INFORMATION REGARDING
ONE-TIME EXTENSION OF THE ESSENTIAL SERVICE WATER TRAIN
COMPLETION TIME FOR BRAIDWOOD, UNIT 1 AND BYRON, UNITS 1 AND 2**

1. Describe how internal floods that may originate in one of the SX pump rooms during replacement of the SX pump suction isolation valves have been addressed in the risk evaluation. Provide relevant flood initiating event frequencies, sequence descriptions, CDF estimates, and LERF estimates.

Section 9.2.1.2.2 of the B/B-UFSAR states that the essential service water pumps are located at the lowest level of the auxiliary building to ensure net positive suction head. Section 9.2.1.2.7 of the B/B-UFSAR states that Pumps 1A and 2A are located in one compartment, and that Pumps 1B and 2B are located in a separate adjacent compartment. Each compartment has a watertight door. During replacement of the SX pump suction isolation valves, it is reasonable to postulate that a flood originating in one of the SX pump rooms (caused, for example, by spurious opening of the common upstream suction isolation valve) could propagate to other areas of the auxiliary building since the watertight door would be opened to allow personnel and equipment access.

Regulatory Basis: Regulatory Guide 1.177, Sections 2.3.2 and 2.3.3.2, and Regulatory Guide 1.174, Section 2.2.3.2.

2. Section 4.3.1.2 (Page 16 of 52) in Attachment 1 of Exelon's request states that "The risk evaluation of internal events incorporates a number of compensatory measures that the plant will take to assure the risk impacts are acceptably low." Perform a sensitivity study that shows how the ICCDP and ICLERP change if none of the compensatory measures are implemented. There are two purposes for conducting the requested sensitivity analysis: (a) to ensure that the proposed compensatory measures are not being relied upon to compensate for weaknesses in plant design, and (b) to clearly understand which compensatory measures should be included in the license amendment.

Regulatory Basis: Regulatory Guide 1.177, Section 2.3.6, first item in the second list.

3. Provide the details of any significant findings and observations from the probabilistic risk assessment (PSA) peer review certification conducted for the Byron Station. Include in the discussion any improvements or corrections that were made in the plant as a result of the findings. Note that it is not necessary to provide this information for the Braidwood Station since it was previously sent to the NRC staff on July 7, 2000 as a response to a request for additional information issued in conjunction with Exelon's request to extent allowable completion times and change surveillance requirements for emergency diesel generators.

Regulatory Basis: Regulatory Guide 1.177, Section 2.3.1, and Regulatory Guide 1.174, Sections 2.2.3 and 2.5.

4. Attachment 4, Table 2-1 of Exelon's request summarizes the major changes made to the Braidwood and Byron PRA models since Exelon's request to extent allowable

completion times and change surveillance requirements for emergency diesel generators was submitted (January 20, 2000). Provide the following information:

- a. Describe the quality process to control how the PRA model changes were reviewed and approved. Discuss internal, external, and peer reviews as applicable.
- b. What is the current “freeze date” of the Braidwood and Byron PRA models? List all PRA model changes that have been identified/planned but not yet implemented, indicating their anticipated impacts (if any) on the risk results and conclusions concerning the extension of the essential service water train completion time request that is currently under consideration.

Regulatory Basis: Regulatory Guide 1.177, Section 2.3.1, and Regulatory Guide 1.174, Sections 2.2.3 and 2.5.