

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20545

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Docket Nos. STN 50-546
and STN 50-547

Dr. James Coughlin
Vice President - Nuclear
Public Service Indiana
1000 E. Main Street
Plainfield, Indiana 46168

Dear Dr. Coughlin:

We have completed a qualification review of Commonwealth Edison Company's Byron/Braidwood Stations for replication at the Marble Hill site as requested in your letter of November 19, 1974. The Byron/Braidwood Safety Evaluation Report was issued on April 4, 1975 and we met with your representatives on May 20, 1975 to discuss the proposed Marble Hill Nuclear Generating Station, Units 1 and 2. We find that the Byron/Braidwood design is acceptable for replication at Marble Hill.

We have identified six categories of safety issues which must be addressed in the PSAR for the replicate plant. Five of these categories, together with the types of items we expect you to identify and address, are as follows:

A. SITE RELATED MATTERS

All safety questions related to the site or to the interfaces between the site and the plant must be addressed in the PSAR.

For example:

- (1) A full site investigation program is required including geology-seismology, foundation engineering, hydrology and meteorology matters.
- (2) Revised accident analyses are required, taking into account the changes in site characteristics from those of the base plant site.
- (3) The effect of radioactive releases from the plant on the site environs must be investigated.

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- (4) The plant design and layout must take into account such matters as flood protection and soil-structure interaction effects for safety related structures and components.
- (5) The replicate plant design must satisfy the site-related design criteria required for the new site, such as the safe shutdown earthquake.

B. UTILITY ORIENTED MATTERS

All utility oriented safety related matters must be specifically addressed in the PSAR.

These matters include the following areas, for example:

- (1) Quality assurance for design and construction.
- (2) Conduct of operations.
- (3) Emergency planning.
- (4) Industrial security - except as related to the layout and design of the base plant.
- (5) Operator training.
- (6) Technical qualifications.
- (7) Financial qualifications.

C. CHANGES FROM BASE PLANT DESIGN

Any applicant initiated changes from the documented design of the base plant must be addressed in the PSAR.

Examples might be:

- (1) Changes in ultimate heat sink.
- (2) Changes in component design.

D. OPEN ITEMS REMAINING FROM REVIEW OF BASE PLANT

All matters identified in the staff Safety Evaluation Report for the base plant, or subsequently identified by the ACES or during the public hearing on the base plant, as requiring subsequent resolution must be addressed in the PSAR.

Examples of such matters are:

- (1) Evaluation of "Anticipated Transients Without Scram" in accordance with WASH-1270.

- (2) Resolution of topical reports referenced for the base plant but not yet accepted by the staff at the time of preparation of the base plant Safety Evaluation Report.

E. CHANGES TO REGULATIONS

The PSAR must address any changes to the Commission's regulations which have become effective since issuance of the base plant SER.

Examples are:

- (1) Compliance with the requirements of Appendix I to 10 CFR Part 50.
- (2) Compliance with the requirements of 10 CFR 50.46 and Appendix K to 10 CFR Part 50.
- (3) Compliance with Section 50.55a of 10 CFR Part 50.

The sixth category, consisting of other significant safety matters identified by the staff, is:

F. OTHER ITEMS IDENTIFIED BY THE STAFF

This category of items includes those significant safety issues identified by the Staff since issuance of the base plant SER that must be considered for the replicate plant to provide reasonable assurance that the replicate plant can be constructed and operated without undue risk to the health and safety of the public.

The significant issues that have been identified are:

- (1) A review of the plant design features that are intended to prevent the occurrence of damaging fires and to minimize the consequences to safety-related equipment should a fire occur.
- (2) A review of the transient loads on the reactor vessel support members that would result from a postulated coolant pipe rupture immediately adjacent to the reactor vessel to assure that these loadings have properly been taken into account in the design.

The example given in Categories A through E are not all inclusive. It is your responsibility to identify and discuss all such items in the PSAR submittal. Further, it is possible that prior to issuance of a construction permit for the replicate plant other Category F type safety issues may arise. If such additional matters are identified, they will be discussed with you only after full deliberation by the staff on the safety benefits that may be achieved.

Dr. James Coughlin

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Success of the replication concept is critically dependent upon holding design changes to an absolute minimum. It is our intent that there be no changes from the base plant design other than those required to fit the design to the new site, to satisfy the changes to regulations, and to satisfy any changes subsequently identified as significant new safety issues. Other changes to the base plant design will place the replication concept in peril and could result in the replicate application being subjected to a custom review. Further, it should be understood that it is our intent that the replication process will continue through completion of the operating license review for the base plant and that any design or other changes deemed necessary for the base plant as a result of the OL review will be applicable also to the replicate plant, unless you propose to solve any identified problems via acceptable alternatives.

Sincerely,

Ben C. Rusche

Ben C. Rusche, Director
Office of Nuclear Reactor Regulation

cc: See page 5

Dr. James Coughlin

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