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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

OCT 27 1978

Docket Nos. STN 50-580
and STN 50-581

Mr. Robert J. McWhorter
Vice President
Ohio Edison Company
76 South Main Street
Akron, Ohio 44308

Dear Mr. McWhorter:

SUBJECT: REQUIREMENTS FOR COLD SHUTDOWN ON THE ERIE NUCLEAR PLANT

In our letter to you dated March 31, 1978, we indicated our requirement for additional information and specifically stated our position (Item 211.77) regarding design requirements for the Erie Nuclear Plant to provide a means of achieving a cold shutdown condition using only safety-grade equipment. This design requirement was also included in our Preliminary Design Approval No. 12 issued for the Babcock & Wilcox Standard Safety Analysis Report (BSAR-205) which is referenced in the Erie Nuclear Plant application.

We have subsequently had extensive discussions with Babcock & Wilcox regarding this matter with the view of providing additional guidance. We have documented this guidance in the Enclosure.

Although several of the design requirements for cold shutdown apply solely to systems in the BSAR-205 scope of design, we require that the application for the Erie Nuclear Plant reflect a specific commitment to comply with our requirements as indicated in the Enclosure for the total Erie Nuclear Plant design. We require your commitment on this matter prior to the issuance of the Supplement to the Safety Evaluation Report.

Please contact us if you have any questions regarding this matter.

Sincerely,

D. B. Vassallo, Assistant Director
for Light Water Reactors
Division of Project Management

Enclosure:
As Stated

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ccs w/enclosure:
See page 2

Mr. R. J. McWhorter
Vice President
Ohio Edison Company
76 South Main Street
Akron, Ohio 44308

cc: Mr. B. M. Miller
Ohio Edison Company
76 South Main Street
Akron, Ohio 44308

Mr. William Kessler
Commonwealth Associates, Inc.
209 East Washington
Jackson, Michigan 49201

Gerald Charnoff, Esquire
Shaw, Pittman, Potts & Trowbridge
1800 M Street, N. W.
Washington, D. C. 20036

Thomas A. Kayuha, Esquire
Ohio Edison Company
76 South Main Street
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Mr. A. H. Lazar
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Power Generation Group
P. O. Box 1260
Lynchburg, Virginia 24505

Mr. Robert W. Tufts
352 West College Street
Oberlin, Ohio 44074

Ms. Evelyn Stebbins
705 Elmwood Road
Rocky River, Ohio 44116

Mr. Richard E. Webb
2858 One Hundred Eleventh Street
Toledo, Ohio 43611

ENCLOSURE

COLD SHUTDOWN REQUIREMENTS FOR
ERIE UNITS 1 & 2

For each part of our cold shutdown position, clarification, if necessary, is provided as follows:

Provide safety-grade steam generator dump valves, operators, air and power supplies which meet the single failure criterion.

The staff position is that, for applications not yet docketed, local manual operation of the MADV's will not be acceptable, except to mitigate the consequences of a single active failure. Operation from the control room, for the time necessary to cool the plant to initiation of the decay heat removal system, will be required. Local manual operation, if necessary, would be approved for dump valves in plants now under construction and for active applications for which an SER has been written. Justification for the acceptability of local operation must include actual local test operation of the MADV's, showing that the plant can be cooled in a controlled manner and that the MADV's can be operated safely and effectively. It is assumed that the valve body, etc., is designed to seismic Category I requirements and that manual operation could be achieved following a safe shutdown earthquake.

Provide the capability to cool down to cold shutdown in less than 36 hours, assuming the most limiting single failure and with only offsite or onsite power available, or show that manual actions inside or outside containment or return to hot standby until the manual actions or maintenance can be performed to correct the failure provides an acceptable alternative.

The staff now requires that assuming the most limiting single failure, with only offsite or onsite power available and a safe shutdown earthquake, capability must exist to cool down to the decay heat removal system cut-in conditions (rather than cold shutdown) in approximately 36 hours.

The staff position is that the current heat removal capacity is inadequate if this criterion can not be met. B&W's calculations for Erie indicate that if one of the two available MAD valves is mechanically stuck closed, the plant cooldown time would be extended to at least several days. The staff considers this time excessive. Accordingly, we require that additional cooldown capability be provided. The addition of two MADV's (one per steam generator) with the same capacity as the original valves would be an acceptable approach.

Provide the capability to depressurize the reactor coolant system with only safety-grade systems assuming a single failure and with only offsite or onsite power available or show that manual actions inside or outside containment or remaining at hot standby until manual actions or repairs are complete provides an acceptable alternative.

Provide the capability for boration with only safety-grade systems assuming a single failure and with only offsite or onsite power available, or show that manual actions inside or outside containment or remaining at hot standby until manual action or repairs are completed provides an acceptable alternative.

The staff considers it acceptable to stay at hot shutdown for the time necessary to correct single failures, provided the overall cooldown time to reach DHR cut-in conditions is approximately 36 hours. In providing the capability to depressurize and borate the reactor coolant system, assuming a single failure and loss of offsite power, local operator action will be permitted to correct failures, if shown to be acceptable (including consideration of accessibility of required equipment). Availability of nonseismic Category I equipment may not be assumed.

The staff requires that the highest worth control rod is assumed at the fully withdrawn position when considering boration requirements.

OCT 2 7 1978

-Conduct or reference approved prototype qualification tests to study the mixing of the added borated water and the cooldown under natural circulation conditions with a worst-case single failure (i.e., a single failure of a steam generator atmospheric dump valve). These tests and analyses will be used to obtain information on cooldown times and the corresponding auxiliary feedwater requirements.

A single prototype qualification test on the lead plant of a given design is acceptable. However, other tests might be required due to differences in system or component arrangement, procedural differences, new questions concerning accessibility or safety for manual actions, or other concerns not addressed by the initial prototype test.

Provide specific procedures, at the operating license review stage, for cooling down using natural circulation, and submit a summary outline of these procedures during the construction permit review.

Provide or require a seismic Category I auxiliary feedwater supply for at least four hours at hot shutdown plus cooldown to the decay heat removal system cut-in based on the longest time (for only onsite or offsite power and assuming the worst single failure), or show that an adequate alternate seismic Category I source will be available.

Meetings with Babcock and Wilcox did not indicate that clarification of these parts of our position was necessary.

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