Commonwealth Edison



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June 16, 1980

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Mr. James G. Keppler, Director Directorate of Inspection and Enforcement - Region III U.S. Nuclear Regulatory Commission 799 Roosevelt Road Glen Ellyn, IL 60137

> Subject: Zion Station Units 1 and 2 Response to I.E. Bulletin No. 80-12 "Decay Heat Removal System Operability" NRC Docket Nos. 50-295 and 50-304

Reference (a): May 9, 1980, letter from J. G. Keppler to C. Reed transmitting I.E. Bulletin 80-12

Dear Mr. Keppler:

Reference (a) transmitted I.E. Bulletin No. 80-12, "Decay Heat Removal System Operability." This Bulletin required action to be taken by Commonwealth Edison Company with regard to its Zion Station. Due to late receipt of both "Enclosure A" to Enclosure 1 and also Enclosure 1 of Reference (a), additional time was required to respond to this Bulletin. An extension to June 17, 1980, was granted per a phone conversation on June 4, 1980, between Mr. D. C. Boyd of your office and W. F. Naughton of this office. Attachment A to this letter contains Commonwealth Edison's response to this Bulletin for Zion Station.

Please address any questions that you might have concerning this matter to this office.

Very truly yours,

L. O. DelGeorge Nuclear Licensing Administrator Boiling Water Reactors

cc: Director Division of Reactor Operations Inspection

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NRC Docket Nos. 50-295 50-304

ATTACHMENT A

Commonwealth Edison Company's response to I.E. Bulletin No. 80-12 follows:

 Review the circumstances and sequence of events at Davis-Besse as described in Enclosure 1. (See Reference (a) for Enclosure 1.)

The circumstances and sequence of events of the Davis-Besse incident have been reviewed at Zion Station.

 Review your facility(ies) for all DHR degradation events experienced, especially for events similar to the Davis-Besse incident.

Zion Station has performed a review of Residual Heat Removal (RHR) degradation events experienced to date and has found none that were similar to the Davis-Besse incident. However, valves 8701 and 8702 have failed to open while the unit was being cooled down prior to going on RHR. In 1974, 2MOV-RH8701 failed to open when the motor windings shorted. In 1973, 2MOV-RH8702 failed to open when the opening torque changed from 2.0 to 2.25. In both instances decay heat removal was maintained by the steam generators until repairs were accomplished.

3. Review the hardware capability of your facility(ies) to prevent DHR loss events, including equipment redundancy, diversity, power source reliability, instrumentation and control reliability, and overall reliability during the refueling and cold shutdown modes of operation.

The hardware capability of Zion Station to prevent RHR loss events includes two (2) independent trains of cooling. If one train is lost, there are a number of diverse cooling methods available depending on which mode the plant is in.

- For the Cold Shutdown modes the diverse methods of cooling include:
 - a. Normal charging and letdown; and
 - b. Use of the intermediate head safety injection pumps (2 independent trains).

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- For the refueling modes the diverse methods of cooling include:
 - a. Injecting the passive accumulators (4 independent trains);
 - Normal charging with letdown through the loop drains and back to the refueling water storage tank (R.W.S.T.);
 - c. The other unit's R.W.S.T.;

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- d. Use of the refueling water purification pump to transfer water from the reactor cavity to the spent fuel pit for cooling through the spent fuel pit heat exchangers; and
- e. Use of the intermediate head safety injection pumps if there is water in the R.W.S.T.

As described in the Final Safety Analysis Report (Section 8.4), the design of our auxiliary power system provides a reliable source of power and has a sufficient independence or isolation between the various sources of electrical power to guard against concurrent loss of all auxiliary power. Isolation of supply to the various redundant engineered safety features is maintained so a single bus fault will not result in the loss of the plant's engineered safeguards systems. In the event that both sources of normal auxiliary power are lost for either one or both units, the auxiliaries essential to safe shutdown will be supplied from the diesel generators.

The instrumentation and control power associated with the reactor protection systems and engineered safety features is obtained from four 7.5KVa inverters which are fed from the engineered safety feature bus. Alternate sources for the inverter are available for each instrument bus through its respective 480/120 volt transformer, or from the station D.C. system.

4. Analyze your procedures for adequacy of safeguarding against loss of redundancy and diversity of DHR capability.

Zion Station has analyzed its station procedures for adequacy of safeguarding against loss of redundancy and diversity of DHR capability. This review identified areas needing further clarification or modification. As a result of this review, the necessary procedure changes have been initiated and will be implemented by September 12, 1980. During this time, an interim standing order has been added to assure, during all modes of plant operation, that there will be redundant or diverse methods available for DHR.

 Analyze your procedures for adequacy of responding to DHR loss events. Special emphasis should be placed upon responses when maintenance or refueling activities degrade the DHR capability. Zion Station has analyzed its procedures for adequacy of responding to RHR loss events. This review identified areas needing further clarification or modification. As a result of this review, the necessary procedure changes have been initiated and will be implemented by September 12, 1980. As indicated in response to Item 4, during this time, an inerim standing order has been added to assure the required adequacy of responding to DHR loss events.

- Until further notice or until Technical Specifications are revised to resolve the issues of this Bulletin, you should:
 - a. Implement as soon as practicable administrative controls to assure that redundant or diverse DHR methods are available during all modes of plant operation. (Note: When in a refueling mode with water in the refueling cavity and the head removed, an acceptable means could include one DHR train and a readily accessible source of borated water to replenish any loss of inventory that might occur subsequent to the loss of the available DHR train.)
 - b. Implement administrative controls as soon as practicable, for those cases where single failures or other actions can result in only one DHR train being available, requiring an alternate means of DHR or expediting the restoration of the lost train or method.
 - c. At Zion Station, when in the refueling mode with water in the reactor cavity, diverse methods are covered in the operating procedures. All other modes of plant operation will be covered by the interim standing order described in response to Item 4 above, until necessary procedure changes have been implemented.
 - d. At Zion Station, the interim standing order described in response to Item 4 and 5 above will provide the necessary administrative control for those cases where single failures or other action can result in only one DHR train being available.
- Report to the NRC within 30 days of the date of this Bulletin the results of the above reviews and analyses, describing:
 - a. Changes to procedures (e.g., emergency, operational, administrative, maintenance, refueling) made or initiated as a result of your reviews and analyses, including the scheduled or actual dates of accomplishment; (Note: NRC suggests that you consider

the following: (1) limiting maintenance activities to assure redundancy or diversity and integrity of DHR capability, and (2) bypassing or disabling, where applicable, automatic actuation of ECCS recirculation in addition to disabling High Pressure Injection and Containment Spray preparatory to the cold shutdown or refueling mode.)

b. The safeguards at your facility(ies) against DHR degradation, including your assessment of their adequacy.

Response to Item 7.a. and 7.b. have been included, where appropriate in the response to Item 1. through 6. above.

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