



Commonwealth Edison

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August 28, 1979

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

Subject: Zion Station Units 1 and 2
Response to IE Bulletin
Nos. 79-05C and 79-06C,
"Nuclear Incident At Three
Mile Island - Supplement."
NRC Docket Nos. 50-295 and 50-304

Reference (a): July 26, 1979 letter from James G. Keppler
to Byron Lee, Jr. transmitting IE Bulletin
Nos. 79-05C and 79-06C.

Dear Mr. Keppler:

Reference (a) required Commonwealth Edison Company
to respond to both the short-term and long-term actions described
in IE Bulletin Nos. 79-05C and 79-06C, "Nuclear Incident At
Three Mile Island - Supplement." Commonwealth Edison's response
to the NRC Staff request is contained in Attachment 1 to this
letter.

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

Very truly yours,

N. J. Naughton
for Cordell Reed
Assistant Vice-President

attachment

cc: Director, Office of
Inspection and Enforcement
Director, Office of
Nuclear Reactor Regulation

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Attachment 1

Commonwealth Edison Company's Response for Zion Station
to IE Bulletin Nos. 79-05C and 79-06C.

A. Short-Term Actions To Be Taken And Response

1. In the interim, until the design change required by the long-term action of this Bulletin has been incorporated, institute the following actions at your facilities:
 - A. Upon reactor trip and initiation of HPI caused by low reactor coolant system pressure, immediately trip all operating RCP's.
 - B. Provide two licensed operators in the control room at all times during operation to accomplish this action and other immediate and followup actions required during such an occurrence. For facilities with dual control rooms, a total of three licensed operators in the dual control room at all times meets the requirements of this Bulletin.

Response:

- A. At Zion Station upon receipt of this Bulletin the reactor operators were instructed via Standing Orders to immediately trip all RCPs if Safety Injection (including HPI) automatically actuates due to low reactor coolant system pressure. Currently, revisions to the Emergency Operating Procedures (EOPs) to reflect these Standing Orders are nearly complete.
 - B. Zion Station Technical Specification 6.1.C already requires three (3) licensed operators in the control room when two (2) units are operating and two (2) licensed operators when only one unit is operating.
2. Perform and submit a report of LOCA analyses for your plants for a range of small break sizes and a range of time lapses between reactor trip and pump trip. For each pair of values of the parameters, determine the peak cladding temperature (PCT) which results. The range of values for each parameter must be wide enough to assure that the maximum PCT or, if appropriate, the region containing PCTs greater than 2200 degrees F is identified.

Response:

A series of Loss of Coolant Accident (LOCA) analyses for a range of break sizes and a range of time lapses between initiation of break and pump trip applicable to the 2, 3 and 4 loop plants has been performed by the Westinghouse Owners' Group. A report summarizing the results of the analysis of delayed Reactor Coolant Pump trip during small loss of coolant accidents for Westinghouse NSSS' will be submitted to Mr. D. F. Ross by Mr. Cordell Reed on August 31, 1979. In the report, maximum PCT's for each break size considered and pump shutoff times have been provided. The report concludes that if the reactor coolant pumps are tripped prior to the reactor coolant system pressure reaching 1250 psia, the resulting peak clad temperatures are less than or equal to those reported in the FSAR. In addition, it is shown that there is a finite range of break sizes and RCP trip times in all cases 10 minutes or later, which will result in PCT's in excess of 2200°F as calculated with conservative Appendix K models. The operator in any event would have at least 10 minutes to trip the RCP's following a small break LOCA, especially in light of the conservatism in the calculations. This is appropriate for manual rather than automatic action, based on the guidelines for termination of RCP operation presented in WCAP-9600.

3. Based on the analyses done under Item 2 above, develop new guidelines for operator action, for both LOCA and non-LOCA transients, that take into account the impact of RCP trip requirements. For Babcock & Wilcox designed reactors, such guidelines should include appropriate requirements to fill the steam generators to a higher level, following RCP trip, to promote natural circulation flow.

Response:

The Westinghouse Owners' Group has developed guidelines which were submitted to the NRC in Section 6 and Appendix A of WCAP-9600. The analyses provided as the response to item 2 are consistent with the guidelines in WCAP-9600. No changes to these guidelines are needed for both LOCA and non-LOCA transients.

4. Revise emergency procedures and train all licensed reactor operators and senior reactor operators based on the guidelines developed under Item 3 above.

Response:

The Owners' Group effort to revise emergency procedures covers many issues, including operation of the Reactor Coolant Pumps. The action taken in response to Item 1 is sufficient as an interim measure and no immediate need exists for changing emergency procedures to include the tripping of the Reactor Coolant Pumps. The expected schedule for revising the LOCA, steamline break and steam generator tube rupture emergency procedures is the following:

Mid-October: Guidelines which have been reviewed by the NRC will be provided to each utility. Appropriate utility personnel associated with writing procedures will meet with the Owners' Group Subcommittee on Procedures and Westinghouse to provide the background for revising their emergency procedures.

1 to 2 months
from Mid-October: Plant specific procedures will be revised.

3 to 4 months
from Mid-October: Revised procedures will be implemented and operators trained.

5. Provide analyses and develop guidelines and procedures related to inadequate core cooling (as discussed in Section 2.1.9 of NUREG-0578, "TMI 2 Lessons Learned Task Force Status Report and Short-Term Recommendations") and define the conditions under which a restart of the RCPs should be attempted.

Response:

Analyses related to inadequate core cooling and definition of condition under which a restart of the RCP's should be attempted will be performed. Resolution of the requirements for the analyses and an acceptable schedule for providing the analyses and guidelines and procedures resulting from the analyses will be arrived at between the Westinghouse Owners' Group and the NRC staff.

B. Long-Term Action To Be Taken And Response

1. Propose and submit a design which will assure automatic tripping of the operating RCPs under all circumstances in which this action may be needed.

Response:

As discussed in response to short-term Item 2, The Westinghouse Owners' Group does not believe that automatic tripping of the RCP's is a required function based on the analyses that have been performed and the guidelines that have been developed for manual RCP tripping. Thus, The Westinghouse Owners' Group proposes that this item be discussed with the NRC staff following their review of the Owners' Group Submittal.

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