

Central File

WISCONSIN PUBLIC SERVICE CORPORATION



P.O. Box 1200, Green Bay, Wisconsin 54305

August 29, 1979

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

Gentlemen:

Docket 50-305  
Operating License DPR-43  
IE Bulletin 79-06c

The following is our response to the above reference bulletin:

Short-Term Actions

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 RCPs.
  - 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. The Kewaunee Nuclear Plant operators have been instructed to trip all reactor coolant pumps after initiation of high pressure safety injection caused by low reactor coolant system pressure.

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- B. In addition to the requirements of the KNPP technical specifications, it is WPS policy to require the control room operators to remain in the control room when not needed elsewhere in the plant to respond to off normal or emergency conditions requiring action to assure safety. The Westinghouse analysis in response to item two of this bulletin has shown that if the reactor coolant pumps are secured within 10 minutes following a LOCA the peak clad temperatures will not exceed Appendix K limits. This is sufficient time to summon an operator to aid in plant recovery following a trip or an accident; our present technical specification requirements concerning control room staffing are adequate.
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 sump 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 and NSSS is scheduled to 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 time will be 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 conservatisms 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. With the existing standing orders to operators the acceptance criteria of 10 CFR 50.46 will be satisfied for the Kewaunee Plant

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 guidelines of Item 3, and the analyses of Item 2 indicate that tripping the reactor coolant pumps after a LOCA will not place the Kewaunee Plant in an unsafe condition. This is consistent with the assumptions of the accident analyses reported in the Kewaunee FSAR. The KNPP emergency operating procedures, which were based on the FSAR analyses, until recently have always required the operator to trip the RCP's after recognition of a LOCA. However, these procedures were reluctantly revised in June of this year at the insistence of the NRC staff to operate RCP's during LOCA events if possible. Based on the results of items 2 and 3 of this bulletin, the KNPP EOP's will be returned to near their original status with specific clarification instructing the operators to trip the RCP's after recognition of a LOCA or S/G tube leak. Further revisions will be made as necessary after WPS has completed its review of the Westinghouse small break LOCA analysis, WCAP 9600.

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 RCP's should be attempted.

RESPONSE:

The present guidelines and procedures available to the operator of the Kewaunee Plant are sufficient to insure the safety of the plant, including maintenance of adequate core cooling. Present analyses have shown that tripping the RCP's immediately during an accident does not create an unsafe condition, and that safety injection flow, combined with natural heat removal mechanisms (including, but not limited to natural circulation) are sufficient to maintain plant safety and fuel clad integrity. Since the heat flux is greater immediately after reactor trip than at any other time during the accident, there is no safety related reason to restart the reactor coolant pumps. Therefore, a procedure addressing RCP restart

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is not necessary; RCP restart will be resolved on a case-by-case basis, depending on the specific conditions surrounding the particular event.

Long-Term Action

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

RESPONSE:

In light of the analyses performed by Westinghouse regarding the effects of reactor coolant pump operation during a small break LOCA, WPS has initiated a study on a priority basis concerning the design and installation of an automatic reactor coolant pump trip.

Very truly yours,



E. R. Mathews, Vice President  
Power Supply & Engineering

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