NUCLEAR REGULATORY COMMISSION

APR 1 82

Enclosure 4

MEMORANDUM FOR: Darrell G. Eisenhut, Director
Division of Licensing

Thomas M. Novak, Assistant Director
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THRU: Robert A. Clark, Chief
Operating Reactors Branch #3, DL

FROM: Dominic C. DiIanni, Project Manager
Operating Reactors Branch #3, DL

SUBJECT: MULTI PLANT ACTION ITEM II.K.3.7-POWER OPERATED RELIEF VALVE OPENING PROBABILITY

My status report dated January 21, 1982 recommended that Action Plan Item II.K.3.7 of NUREG-0737 be reevaluated for possible cancellation or redirection from a technical point of view.

Item II.K.3.7 requires licensees of B&W operating plants to demonstrate that the PORV will open less than 5% of all anticipated overpressure transients using the revised setpoint and anticipatory trips for the ranges of plant conditions occurring during a fuel cycle.

The objective of this action is to determine, by analysis and operating experience, if the PORV challenges are greater or less than 5% of the total number of overpressure transients. A basis for automating the block valve to the PORV could be established if results show that the PORV challenges are greater than 5%. However, if results show that challenges to the PORV are less than 5%, it would then confirm that the revised PORV set point reduces the PORV challenge to an acceptable level and no further system changes would be needed.

In my opinion a decision to automate the block valve based on results from this action does not appear adequate, based on the following.

1. This action does not consider the operating history nor the longevity of the PORV which affects the probability of adequate operation of the PORV. Restricting Item II.K.3.7 to overpressure transients does not consider other manual operations of the PORV which would impact on the opening and closing probability when required during a transient. Other manual operations of the PORV would include de-gassing, normal pressurizer venting, or pressurizer vapor space development which impact on the wear and tear of the valve. Presently technical specifications do not restrict the use of the PORV.

2. The probability analysis was performed using the best estimated numbers as input for the analysis for determining the number of PORV actuations. Whether additional confidence can be gained by further querying the licensees on this issue is open to question. Such estimated numbers

would be difficult to justify. However, operational experience does indicate that 190 reactor trips would have actuated the PORV with the pre TMI setpoint versus 3 PORV actuations with the revised setpoint. Based on this data, the present PORV-opening probability is less than 1.6% which could indicate that automating the block valve is not necessary. However, such a decision would lead to a false sense of security since item 1 above is not being considered. The only reasonable conclusion that can be drawn from the available information on this action is that the revised PORV setpoint does reduce the number of challenges to the PORV during plant transients.

3. Basing any decision on the PORV challenges at a 5% level is also questioned since there is no technical basis for selecting the 5% level to the best of my knowlege.

4. Enclosures 1 and 2 address many areas in which the reliability of the PORV can be improved. Any probability analysis would be premature without first considering some of these improvements. The mission of the PORV has yet to be defined (note Enclosure 2). This should be considered part of the overall program. In my judgement the present actuating setpoint of the PORV should be considered as an interim position for the reasons given in enclosures 1 and 2. In addition, automating the block valve is only one of many areas that need to be studied and evaluated in this program as brought out in enclosure 2.

5. It requires the coordinations of many disciplines (i.e. Materials, Mechanical, Reactor systems, I&C and Electrical Engineering) in order to upgrade the reliability of the PORV. This coordination is needed since these disciplines are interrelated when one considers their effects on the PORV. I know of no single person at NRC that is coordinating this effort.

The Babcock & Wilcox (B&W) owners group report (issued on January 1, 1981) which addresses action item II.K.3.7 is being reviewed under contract with Franklin Research Center. By our letter dated December 16, 1981, we requested that a licensee (ANO-1 lead plant) furnish additional information within 45 days. As it now stands, work on the response is not scheduled to start until May 1982 and a submittal to us is not expected until September 1982.

In conclusion, based on the above I cannot justify further consultant contract work or contacts with licensees on action Plan item II.K.3.7 until the matters

[illegible] alternatives are available. Contract [illegible] can be initiated to assist in resolving some of these problems, but only after proper direction is given to the contractor through a detailed statement of work.

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Enclosure: As stated

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