



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

TEIRA

JUN 16 1980

MEMORANDUM FOR: Commissioner Bradford
THRU: Acting Executive Director for Operations (Signed) William J. Dircks
FROM: Harold R. Denton, Director
Office of Nuclear Reactor Regulation
SUBJECT: REFERENCE BY DR. PIGFORD TO WESTINGHOUSE WARNING

On May 14, you asked if we could explain the reference to a 1972 Westinghouse warning in a recent talk by Dr. Pigford. On May 22, 1980, we contacted Dr. Pigford to obtain more information regarding the referred to "warning". Dr. Pigford was unable to identify a specific reference for the record. The pertinent section of his talk stated:

"The Beznau incident five years ago in Switzerland showed a similar problem there. In 1972 Westinghouse had also foreseen this confusing situation of rising pressurizer level following a small break in the pressurizer. They notified NRC in a very thorough report. Apparently, NRC did not recognize the significance of this report. In fact, NRC in its own investigations since the accident apparently has not uncovered the Westinghouse warning. This was very disappointing to us. I have also learned that Westinghouse did indeed notify some of its clients, and the operators apparently were then properly trained."

The NOK-1 (Beznau) event occurred on August 20, 1974. During that event the pressurizer level increased and remained offscale following failure of a PORV to close. The initiation of high pressure injection did not occur until the reactor coolant system pressure and pressurizer level both reached their low setpoints (coincident signals were required) which occurred after operator action was taken to isolate the PORV. The PORV was isolated by the operator in 2 to 3 minutes after reactor trip, and automatic high pressure injection occurred 12 minutes after the trip. Westinghouse analyzed the NOK-1 event and issued an internal report. The report was not transmitted to the AEC, probably because the plant had responded as expected and because there was no regulatory requirement to do so.

Westinghouse had previously (1971) analyzed a small break LOCA from the pressurizer steam space which showed that during such an event pressurizer level might increase, thus preventing automatic initiation of high pressure safety injection. This 1971 analysis was submitted to the Commission in October 1971 as Amendment 1 to the RESAR-3 Safety Analysis Report. Although this report indicated that for 2-inch to 6-inch breaks automatic initiation (coincident signals) of high pressure injection might not result, it did not specifically

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state or "warn" the NRC of the potential for an increase in pressurizer level during such an event. Instead, Westinghouse showed that the identified problem, delay in automatic initiation of high pressure safety injection, was not significant because the operators had sufficient time (more than 50 minutes before core damage would begin) and control room indication to identify the problem and take necessary manual actions.

After operating experience demonstrated that spurious actuation of high pressure injection would not be a problem, Westinghouse did revise the RESAR-3 standard plant design and subsequent designs to delete the coincident signals requirement for automatic initiation of high pressure injection. Westinghouse did not feel that older plants needed to be backfit. In addition, prior to TMI, Westinghouse had not provided their licensees any specific warning relative to rising pressurizer level. However, Westinghouse had included a stuck-open PORV event in their operator training programs and instructed the operators in the recognition of this event, although the simulator modeling did not include the rising pressurizer level response. Since TMI, Westinghouse has provided guidance for prompt manual initiation of high pressure injection on low RCS pressure.

NRC was formally advised of the NOK-1 incident by Westinghouse on April 10, 1979. Also, the NRC Special Inquiry Group Report, Volume II, Part 1, pages 140-142, accurately details all of the above events, including the RESAR-3 analyses and associated Westinghouse actions. No evidence was identified in any of the NRC investigations to indicate that Westinghouse had "warned" the Commission of a safety concern relative to rising pressurizer level prior to TMI. We have discussed this issue with Westinghouse and invited their written comment. They declined but verbally identified no other documents addressing this subject.

Based on the above information, we can infer that Dr. Pigford was referring to Amendment 1 to the RESAR-3 Safety Analysis Report (1972).

Original Signed By
E. G. Case

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

cc: Chairman Ahearne
Commissioner Gilinsky
Commissioner Kennedy
Commissioner Hendrie
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