



UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, D. C. 20555

September 6, 1979

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W. Kerr, Chairman
E.I. Hatch Subcommittee

FAILURES OF BACKUP CORE COOLING SYSTEMS AT HATCH UNIT 2

Recently, I wrote to you describing an event that occurred at Hatch Unit 2, which resulted in the failure of the reactor core isolation cooling (RCIC) and high pressure coolant injection (HPCI) systems to function on demand following a low water level scram (Attachment I).

Subsequent to this June 3, 1979 event, I observed a number of LERs describing failures of the RCIC and HPCI systems to perform adequately, culminating in another loss of both systems on June 27, 1979 (Attachment II). Discussion with the NRC LPM for Hatch (Dave Verrelli) revealed the following information.

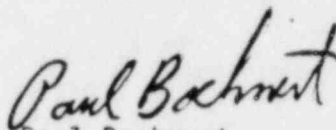
1. Following the June 3 event, Commissioner Kennedy requested a report from L. Gossick on the chronology, significance, and generic implications of the event (Attachment III). Kennedy's concerns were heightened by the second event of June 27, 1979 (Attachment IV).
2. Following the June 27 event, the Region II office of Inspection and Enforcement issued an Immediate Action Letter (Attachment V) that required a number of corrective actions be taken to assure the RCIC and HPCI systems would perform as designed before plant operation could resume.
3. In response to the Kennedy memoranda, the attached I&E report was issued (Attachment VI). The June 3, incident was reviewed and supplemental licensee actions described. I&E noted that the RCIC is not part of the ECCS, and that the low pressure coolant injection and core spray systems were available if needed. I&E also stated that the failure of the RCIC turbine exhaust valve and the contamination of the HPCI turbine oil system with water have possible generic implications which are being pursued. Appropriate I&E bulletins, orders, etc., will be issued as the results of the investigation warrant.
4. A special startup testing program was conducted to determine the cause of the repeated systems failures. It was discovered that the steam flow instrumentation on the RCIC system was subject to pressure spikes upon opening of the steam supply valve. These spikes simulated a break in the steam line which resulted in system isolation. The fix applied to this problem was to install time delays of 2 to 3 seconds to prevent system isolation on the initial pressure spike. The Applicant also proposed to install time delays in the HPCI steam flow instrumentation, but this has been resisted by NRC since none of the HPCI startup tests resulted in isolation due to pressure spiking as was seen in the RCIC system.

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In view of the fact that the situation appears to be well in-hand, I recommend no Committee action on this item. I will, of course, continue to monitor the situation and provide you with any additional information as it is received.


Paul Boehmert
Reactor Engineer

Attachments: as stated

cc: ACRS Members
ACRS Technical Staff
J. Stampalos, ACRS Fellow