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

DEC 28 1989

MEMORANDUM FOR: Charles E. Rossi, Director
Division of Operational Events Assessment
Office of Nuclear Reactor Regulation

AEOD/E910

FROM: Thomas M. Novak, Director
Division of Safety Programs
Office for Analysis and Evaluation
of Operational Data

SUBJECT: POTENTIAL FOR GAS BINDING OF HIGH HEAD SAFETY INJECTION PUMPS RESULTING FROM INSERVICE TESTING OF VCT OUTLET ISOLATION VALVES

Enclosed is an Engineering Evaluation report concerning the potential to gas bind both high head safety injection pumps as a result of inservice testing of volume control tank outlet isolation valves.

During inservice testing at the Trojan nuclear plant, plant personnel discovered that the procedurally specified opening of one manual "bypass" valve around the motor operated VCT outlet isolation valves could render both high head safety injection pumps inoperable if a safety injection signal occurred while testing was in process. Furthermore, upon completion of testing, should the manual bypass valve be inadvertently left in the open position, both trains of high head safety injection could be unknowingly rendered inoperable for an extended period of time.

NRC Information Notice (IN) 88-23 was previously issued to address gas binding of high head safety injection pumps due to dissolution of hydrogen in low pressure portions of ECCS piping. Supplement 1 to IN 88-23 later described additional problems at the South Texas, North Anna, and Surry plants involving air in the suction piping of centrifugal charging pumps.

The enclosed proposed supplement to IN 88-23 informs licensees of the previously mentioned, newly recognized potential for gas binding the high head safety injection pumps by opening a bypass valve around the VCT outlet isolation valves.

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It is recommended that the enclosed proposed supplement to NRC Information Notice No. 88-23 be sent to all PWR licensees and construction permittees to alert them to the potential for gas binding the high head safety injection pumps as a result of testing activities.

For further information regarding this study, please contact Mark Padovan (x24445) of my staff.

/s/

Thomas M. Novak, Director
Division of Safety Programs
Office for the Analysis and Evaluation
of Operational Data

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