

ENCLOSURE
WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
ESSENTIAL RAW COOLING WATER SYSTEM
FLOW MISMATCH TO THE CCS HEAT EXCHANGERS
NCR MEB 78-1

FINAL REPORT

Description of Condition

The subject deficiency is a problem with the Essential Raw Cooling Water (ERCW) supply to the Component Cooling System (CCS) heat exchangers. The present arrangement of the motor-operated valves and their emergency power train supply would result in a loss of water through an inoperative CCS heat exchanger under a loss of offsite power and a loss of train A emergency power supply. Upon loss of power train A the CCS heat exchanger A will no longer be receiving CCS flow from the train A loads for Unit 1. The valves which are capable of isolating ERCW flow to heat exchanger A are on train A power, while the supply is from ERCW train B pumps. Thus there will be a loss of water through heat exchanger A resulting in insufficient flow through heat exchanger C. With this loss of flow, the ERCW system will not meet the system design basis of a LOCA simultaneous with a loss of offsite power and a loss of train A.

Safety Implications

Under a design basis LOCA simultaneous with a loss of offsite power and a loss of train A emergency power supply, there would be less than the design basis ERCW flow rate supplied to safety related equipment. This situation could cause safety related equipment to overheat thereby creating an unsafe condition.

Corrective Action

A qualified motor operator will be added to the existing manual valve 1-67-546 with power supply from emergency train B so as to provide the operator with the capability to close the valve from the main control room upon loss of train A power. This valve will maintain the capability to be used as a throttling valve for the purpose of initial balancing of flow through the heat exchanger under nonaccident operational modes.

This modification will be completed prior to Unit 2 fuel loading. If modifications are not complete prior to Unit 1 fuel loading, temporary alteration of the normal position of the three flow control valves will be made so that the ERCW system will satisfactorily perform under all possible modes of Unit 1 operation. The temporary alteration will change flow control valves 1-FCV-67-223 and 2-FCV-67-223 from normally closed to normally open and 1-FCV-67-458 will be changed from normally open to normally closed. (See FSAR figure 9.2-2.) This would permit supply of ERCW from the same train as the heat exchangers being served.

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