NRC FORM 366 (12-81) 10 CFR 50 U.S. NUCLEAR REGULATORY COMMISSION APPROVED BY OMB 3150-0011 LICENSEE EVENT REPORT PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION CONTROL BLOCK P A S E S 1 0 0 0 0 0 0 0 - 0 034 0 1 1 (5) LICENSEE CODE LICENSE NUMBER CON'T 0 1 L (6) 0 REPORT 0 0 0 8 4 8 5 3 70020 3 0 3 0 4 8 SOURCE EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10) During the Startup Test Program, while at 100% power, the "A" Reactor Recircula-0 2 0 3 tion Pump tripped off line. As there was no apparent reason for the trip, the operator declared the "A" recirculation loop inoperable and entered LCO per 0 4 0 5 Technical Specification 3.4.1.1 and 3.4.1.3. There were no consequential effects 0 6 on the public health and safety, as the plant was operated within the parameters 0 7 allowed by the action statement. 0 8 ... CAUSE CAUSE CODE COMP. VALVE COMPONENT CODE 0 9 (12) (13) (14) (15) (16) P R Z G U 19 12 1.5 SEQUENTIAL CODE REPORT REVISION EVENT YEAR REPORT NO TYPE NO. LER/RO REPORT NUMBER (17) 21 0 5 0 3 0 21 24 28 30 31 32 ACTION FUTURE ATTACHMENT SUBMITTED RFFECT SHUTDOWN NPRD-4 PRIME COMP COMPONENT (26) (22) ON PLANT METHOD HOURS MANUFACTU N 24 B 20 Y 23 21 18 Z (19) N 25 A 7. 0 0 9 G 0 8 0 0 CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27) 1 0 This was the fourth such occurrence (LER's 83-012/03L-0 and 83-014/03L-0) fuse opened in the voltage regulator circuit and the M-G set exciter field 1 1 breaker opened. With data from instrumentation added to circuitry after previous 1 2 1 3 trip, problem located to voltage regulator. The voltage regulator board was 1 4 replaced: faulty voltage regulator was bench tested. A bad SCR was found. PACILITY METHOD OF (30) OTHER STATUS DISCOVERY DISCOVERY DESCRIPTION STATUS POWER (32) 28 1 A (31) B 0 0 29 1 5 n/a operator observation 10 12 13 80 ACTIVITY CONTENT (35) AMOUNT OF ACTIVITY LOCATION OF RELEASE (36) Z 33 Z 34 6 n/a 1 n/a PERSONNEL EXPOSURES 10 \$ 5 44 48 80 NUMBER 0 37 Z 38 0 0 1 7 n/a 12 11 80 PERSONNEL INJURIES DESCRIPTION (41) NUMBER 1 8 0 0 0 0 8303160191 830304 PDR ADOCK 05000387 12 80 TYPE DESCRIPTION (43) PDR (42) 1 9 n/a PUBLICIT DESCRIPTION (45) NRC USE ONLY ISSUED 44 N 2 0 1 1 1 n/a 10 Jon T. Todd (717) 542-2181 X3524 NAME OF PREPARER PHONE

Attachment

Licensee Event Report 83-025/03L-0

During the Startup Test Program, while at 100% power, the "A" Reactor Recirculation Pump MG set exciter field breaker tripped open, causing a loss of "A" Reactor Recirculation pump leading to Operations declaring the loop inoperable and entering LCO per Technical Specification 3.4.1.1 and 3.4.1.3 (hot shutdown in 12 hours). There were no consequential effects on the public health and safety, as the plant was operated within the parameters allowed by the action statement. The operator manually lowered the operating Recirc Pump's MG set speed to 50% per the Shift Supervisor's direction, in accordance with ON-64-002 procedure and in preparation for restart of the tripped pump.

This was the fourth occurrence of similar events. The first and second occurrences were documented in LER 83-012/03L-0 and the corrective measures were to replace a blown fuse the first time, and to replace a blown fuse and a shorted potential transformer the second time. The third occurrence, documented in LER 83-014/03L-0, caused a thermal overload to trip and subsequent investigations led to the conclusion that the problem was operationally induced and that with the unit returned to service and instrumented, the root problem would be identified. This fourth occurrence was the result of a blown fuse as in the first occurrence, however, with the additional instrumentation that was added to the Motor Generator control circuitry and the correlation of this data to Recirc MG set speed data from the GETARS computer, strong evidence pointed to a failure in the MG set voltage regulator circuitry.

The Maintenance Department started an in-depth investigation/test of the voltage regulator, as conditions allowed in the installed condition. The Unit 2 "A" Reactor Recirculation Pump MG set voltage regulator was obtained. No cause of failure was determined by the time the Unit 2 part was delivered, so the Unit 1 voltage regulator was removed, the Unit 2 voltage regulator installed and checked out, and the "A" Reactor Recirc Pump was put into service and declared operable.

Maintenance continued to bench test the faulty voltage regulator by introducing inputs that closely related to operating conditions and varying parameters. The results of the bench test showed a deficiency in one of the Silicon Controlled Rectifiers (SCR), resulting in a higher current flow in the field circuit. With high current flow in the voltage regulator circuitry several things could and did happen:

- 1. Fuses on the input side of the circuit could blow. This happened three times.
- 2. The transformer that is protected by the above fuses could short out, as it is not a high burden instrument. This happened once.
- 3. The circuit thermal overload could trip. This happened once.

Due to the overlapping information in this report, no revision will be provided for LER 83-012/03L-0.