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Georgia Power
the southern electric system

January 7, 1992

ELV-03340
1255

Docket No. 50-425

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

Gentlemen:

VOGTLE ELECTRIC GENERATING PLANT
LICENSEE EVENT REPORT
REACTOR COOLANT PUMP (RCP)
THERMAL BARRIER ISOLATION VALVES DECLARED
INOPERABLE DUE TO TORQUE SWITCH SETTINGS

In accordance with 10 CFR 50.73, Georgia Power Company hereby submits the enclosed report related to an event which was discovered on December 11, 1991.

Sincerely,

C. K. McCoy

CKM/NJS/gmb

Enclosure: LER 50-425/1991-012

xc: Georgia Power Company
Mr. W. B. Shipman
Mr. M. Sheibani
NORMS

U. S. Nuclear Regulatory Commission
Mr. S. D. Ebneter, Regional Administrator
Mr. D. S. Hood, Licensing Project Manager, NRR
Mr. B. R. Bonser, Senior Resident Inspector, Vogtle

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NRC Form 366 (6-89) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104
EXPIRES: 4/30/92

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
VOGTLE ELECTRIC GENERATING PLANT - UNIT 2	0 5 0 0 0 4 2 5	1 OF 4

TITLE (4)
RCP THERMAL BARRIER ISOLATION VALVES DECLARED INOPERABLE DUE TO TORQUE SWITCH SETTINGS

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQ NUM	REV	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)
										0 5 0 0 0
1 2	1 1	9 1	9 1	0 1 2	0 0	01	07	92		0 5 0 0 0

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR (11)									
POWER LEVEL	1 0 0		20.402(b)		20.405(c)		50.73(a)(2)(iv)		73.71(b)		
			20.405(a)(1)(i)		50.36(c)(1)		50.73(a)(2)(v)		73.71(c)		
			20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vii)		OTHER (Specify in		
			20.405(a)(1)(iii)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)(A)		Abstract below)		
			20.405(a)(1)(iv)		50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)				
			20.405(a)(1)(v)		50.73(a)(2)(iii)		50.73(a)(2)(x)				

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER	
	AREA CODE	
MEHDI SHEIBANI, NUCLEAR SAFETY AND COMPLIANCE	404	826-3209

COMPLETE ONE LINE FOR EACH FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	
B	C C	I S V	A 3 9 1	Y							

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
[ ] YES (If yes, complete EXPECTED SUBMISSION DATE)	[X] NO				

ABSTRACT (16)

On 12-11-91, during a review of minimum required thrust values against field measured thrust values for safety-related motor-operated valves, offsite engineering personnel determined that the as-left torque switch settings for valves 2HV-19051, 2HV-19053, 2HV-19055, and 2HV-19057 were inadequate to ensure the design function of these valves (i.e., automatic closure to isolate a postulated reactor coolant pump thermal barrier tube rupture). The site was notified and Technical Specification (TS) 3.7.12 action requirements pertaining to the operability of the reactor coolant pump thermal barrier isolation function were entered. After completing corrective action to increase the torque switch settings for 2HV-19051, 2HV-19053, and 2HV-19055 and to install a jumper to temporarily bypass the close torque switch for 2HV-19057, the action requirements of TS 3.7.12 were exited at 1520 EST on 12-13-91.

Investigation determined that the root cause of the event was inadequate original vendor specified information. Originally, the valve vendor (Anchor/Darling Valve Company) supplied recommended torque switch settings but did not supply the minimum thrust requirement for the valves. Therefore, while the close torque switches were originally set at the nominal specified value and the resulting thrust values were measured by performance of valve diagnostic testing during Unit 2 preoperational testing, the discovery that the specified torque switch settings were inadequate did not occur until the present review of field data. Additional corrective action will be completed during the next Unit 2 refueling outage to troubleshoot a possible problem involving the torque controlling components of valve 2HV-19057 and to perform diagnostic testing for all of the subject valves.

A. REQUIREMENT FOR REPORT

This report is required per 10 CFR 50.73(a)(2)(i) since the reactor coolant pump (RCP) thermal barrier isolation function was discovered to be inoperable, per Technical Specification (TS) 3.7.12 requirements, in excess of the 7-day limiting condition for operation.

B. UNIT STATUS AT TIME OF EVENT

At the time of discovery, Unit 2 was in Mode 1 (power operation) at 100 percent of rated thermal power. Other than that described herein, there was no inoperable equipment which contributed to the occurrence of this event.

C. DESCRIPTION OF EVENT

On 12-11-91, Southern Company Services (SCS) Vogtle Project Engineering personnel identified a problem involving Unit 2 motor-operated valves (MOVs) 2HV-19051, 2HV-19053, 2HV-19055, and 2HV-19057. These valves are designated as RCP thermal barrier isolation valves and provide a redundant isolation function to valve 2HV-2041 to prevent a spill of the reactor coolant from a postulated breached RCP thermal barrier should a break occur in the nonsafety-related auxiliary component cooling water piping downstream of valve 2HV-2041. Due to a concern regarding the accuracy of motor operated valve analysis and testing system (MOVATS) diagnostic test equipment which had been used at VEGP to set up many safety-related MOVs, a comparison of current required minimum thrust values against as-left torque switch settings and field measured thrust values had been initiated. The as-left values were provided by the site from a review of past maintenance work orders and MOVATS procedure data packages. Upon completing this comparison for valves 2HV-19051, 2HV-19053, 2HV-19055, and 2HV-19057, it was determined that the as-left torque switch settings and resulting thrust values were not sufficient to ensure closure of these valves to isolate a thermal barrier tube rupture. The site was notified of this discovery and, on 12-11-91 at 1846 EST, the action requirements of TS 3.7.12 were entered (viz., restore the RCP thermal barrier isolation function to operable status within 7 days or be in at least Hot Standby within the next 6 hours and in Cold Shutdown within the following 30 hours).

On 12-13-91, corrective action was taken to remove the torque switch limiter plates from valves 2HV-19051, 2HV-19053, and 2HV-19055 and to increase the torque switch settings to 2.25. For valve 2HV-19057, a temporary modification was implemented to install a jumper to bypass the close torque switch. Bypassing the close torque switch for valve 2HV-19057 was considered necessary since the review of MOVATS data indicated the existence of a possible problem in the torque controlling components of the valve operator. The valves were declared operable and the action requirements of TS 3.7.12 were exited at 1520 EST on 12-13-91.

D. CAUSE OF EVENT

The root cause of the event was inadequate original vendor specified information.

The subject valves (2HV-19051, 2HV-19053, 2HV-19055, and 2HV-19057) are 2 1/2-in. Anchor/Darling gate valves equipped with Limitorque SMB-00-10 operators. The recommended torque switch settings originally provided by the vendor included a nominal close torque switch setting of 1.0 and a maximum close torque switch setting of 1.5. The review of as-left field data determined that the close torque switches for all four valves were originally set at the nominal close torque switch setting of 1.0. Followup MOVATS diagnostic testing was performed during Unit 2 preoperational testing in 1988 and resulted in measured thrust values, not accounting for test equipment accuracies, of 3260 lb., 3230 lb., 3460 lb., and 1760 lb., respectively. At that time, the vendor had not supplied Georgia Power Company with the minimum thrust requirement for the valves. Also, the valves were not in the scope of valves covered by NRC Bulletin 85-03; therefore, the MOVATS measured thrust values were considered to be baseline data and, after some troubleshooting of 2HV-19057, no operability issue appeared to exist.

Subsequently, due to the scheduling of MOVATS diagnostic testing of the corresponding Unit 1 valves, the site requested SCS Vogtle Project Engineering personnel to provide a minimum closing thrust value which could be used for comparison purposes for the scheduled Unit 1 testing. Based on discussions with the valve vendor, a minimum closing thrust requirement of 4867 lb. was established and was provided to the site in 1990. The resulting Unit 1 MOVATS measured thrust values were found acceptable; however, in retrospect, it is noted that the close torque switches for the Unit 1 valves were set at either 1.25 or 1.5. Apparently, due to the success of the Unit 1 testing, the need to review the as-left close torque switch settings and the field measured thrust values for the Unit 2 valves was not recognized until the concern regarding the accuracy of the MOVATS diagnostic test equipment was identified. The four subject valves were found to be the only safety-related valves for Units 1 and 2 which were set prior to receipt of minimum required thrust values and the as-left thrust values were found to be inadequate.

E. ANALYSIS OF EVENT

Valve 2HV-2041 provides a redundant isolation function to valves 2HV-19051, 2HV-19053, 2HV-19055, and 2HV-19057. The review of MOVATS field data determined that the measured thrust value for this valve was acceptable compared to its minimum required thrust value. This indicates that valve 2HV-2041 is set up properly and, in spite of the possibility that one or more of the other four valves may not have closed had a postulated RCP thermal barrier tube rupture occurred, valve 2HV-2041 was capable of performing the necessary isolation function. Based on this consideration, there was no adverse effect on plant safety nor on the health and safety of the public as a result of this event.

F. CORRECTIVE ACTIONS

1. The torque switch limiter plates for valves 2HV-19051, 2HV-19053, and 2HV-19055 were removed and the close torque switch settings were increased from 1.0 to 2.25. Removal of the limiter plates was required since the plates limited the torque switch setting to a maximum of 1.5. The setting of 2.25 was determined to be conservative in that it would provide sufficient margin to ensure the valve operators developed the minimum required thrust but would still provide for protection of the motor operator and valve.

2. A temporary modification for valve 2HV-19057 has been implemented to install a jumper to bypass the close torque switch. Bypassing the torque switch will allow the motor operator to develop its maximum torque, which will ensure closure of the valve regardless of any possible problem which might exist in the torque controlling components of the valve operator. Since the purpose of the close torque switch is to stop the motor after the motor has produced torque sufficient to ensure the valve disc is properly seated but before the motor can overheat or cause damage to the operator or valve, it is possible that this modification could result in an inability to reopen the valve if the valve is closed or closes for any reason. However, there is no safety-related requirement for the valve to be able to open. During the next Unit 2 refueling outage, troubleshooting and, if necessary, repair, will be completed for 2HV-19057 to delete the need for the temporary jumper.

3. MOVATS diagnostic testing will be performed for valves 2HV-19051, 2HV-19053, 2HV-19055, and 2HV-19057 during the next Unit 2 refueling outage. Based on the results of that testing, a torque switch setting less than 2.25 may be found acceptable. Torque switch limiter plates will be reinstalled as appropriate.

G. ADDITIONAL INFORMATION

1. Failed Components Identification

   Valves 2HV-19051, 2HV-19053, 2HV-19055, and 2HV-19057
   2 1/2-in. Anchor/Darling Gate Valves, Model No. E9001-38
   Equipped With Limitorque SMB-00-10 Operators

2. Previous Similar Events

   None.

3. Energy Industry Identification System Codes

   Closed/Component Cooling Water - CC
   Reactor Coolant System (PWR) - AB