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Southern Nuclear Operating Company
the southern electric system

October 22, 1993

10 CFR 50.73

Docket No. 50-348

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

Joseph M. Farley Nuclear Plant - Unit 1
Licensee Event Report No. 93-003-00

Gentlemen:

Joseph M. Farley Nuclear Plant, Unit 1, Licensee Event Report No. LER 93-003-00 is being submitted in accordance with 10 CFR 50.73. If you have any questions, please advise.

Respectfully submitted,

Dave Morey

EFB:sar LER-003.EFB

Enclosure

cc: Mr. S. D. Ebnetter
Mr. T. A. Reed
Mr. M. J. Morgan

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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) Joseph M. Farley Nuclear Plant - Unit 1				DOCKET NUMBER (2) 050003481 OF 4	
TITLE (4) Control Room HVAC housing opening causes breach of Control Room pressurization boundary.					
EVENT DATE (5)		LER NUMBER (6)		REPORT DATE (7)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER
09	23	93	93	003	00
OTHER FACILITIES INVOLVED (8)					
FACILITY NAMES J. M. Farley Unit 2				DOCKET NUMBER(S) 05000364	
THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 2.2. [Check one or more of the following] (11)					
OPERATING MODE (9) I		20.402(b)		20.405(c)	
POWER LEVEL (10) 1100		20.405(a)(1)(i)		50.73(a)(2)(iv)	
		20.405(a)(1)(ii)		50.73(a)(2)(v)	
		20.405(a)(1)(iii)		<input checked="" type="checkbox"/> 50.73(a)(2)(vi)	
		20.405(a)(1)(iv)		50.73(a)(2)(vii)(A)	
		20.405(a)(1)(v)		50.73(a)(2)(viii)(B)	
				50.73(a)(2)(ix)	
LICENSEE CONTACT FOR THIS LER (12)					
NAME R. D. Hill, General Manager - Nuclear Plant				TELEPHONE NUMBER AREA CODE 205 899 - 5156	
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)					
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	
SUPPLEMENTAL REPORT EXPECTED (14)					
YES (If yes, complete EXPECTED SUBMISSION DATE)					NO
					DATE (15)
ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)					
<p>On 09-23-93 at 1400, Southern Nuclear Operating Company (SNC) recognized that the Control Room pressurization boundary had been affected by maintenance that was in progress on the A train Control Room (C/R) Air Conditioner (A/C). It was determined that the Technical Specification (T/S) requirement to be able to maintain the C/R at a positive pressure of greater than or equal to 1/8 inch water gauge relative to the outside atmosphere could not be met due to openings in the C/R Air Conditioner housing and duct-work.</p> <p>Maintenance on the A train A/C was in progress to locate and repair a refrigerant leak in the system. The work involved removing the condenser end bells which required that access panels/doors in the A/C housing and duct-work be removed/opened. The A/C housing and duct-work forms a part of the C/R pressurization boundary and with the access panels/doors removed or open, the B train C/R Pressurization Unit was unable to maintain the required pressure.</p> <p>Work on the A train C/R Air Conditioner was stopped and the access panels/doors were restored to normal within approximately 30 minutes. This action reestablished the C/R pressurization boundary integrity and thus the ability to meet the T/S requirement for maintaining a positive C/R pressure.</p> <p>Since the C/R Air Conditioner is shared between the two units, this event also affected Unit 2. Unit 2 was operating at 87 percent power.</p>					

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U. S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503

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		YEAR	SEQUENTIAL YEAR	REVISION NUMBER			
					2	OF	4

TEXT (If more space is required, use additional NRC Form 366A's)(17)

PLANT AND SYSTEM IDENTIFICATION

Westinghouse - Pressurized Water Reactor.

Energy Industry Identification System codes are identified in the text as [XX].

SUMMARY OF EVENT

Maintenance on the A train Control Room Air Conditioner [VI] was in progress to locate and repair a refrigerant leak. The work on the A/C condenser that was being performed required that the condenser end bell be removed. In order to provide the access necessary to remove the end bell, a 7' by 1.7' panel and a 6" diameter panel were removed from the system duct-work. Also, two 4' by 2' personnel access doors were opened for the work in progress. The A/C unit housing and the associated duct-work form part of the Control Room pressurization boundary, and with the above items either opened or removed, the Control Room pressurization system is unable to pressurize the Control Room to the required T/S value.

DESCRIPTION OF EVENT

A Maintenance Work Request had been written for the A train C/R Air Conditioner due to a suspected refrigerant leak. To locate the leak the work sequence called for eddy current testing on the system condenser. The work sequence required the condenser end bells be removed to expose the tubes for cleaning and testing; however, it did not address how the end bells were to be removed and did not recognize that the C/R pressurization boundary would be opened. Although, it was understood by the journeymen involved in the repair that some disassembly of the unit's HVAC housing would be required in order to remove the end bells, this information was not communicated to the Shift Supervisor. Approval to begin work on this job occurred on 9-21-93 at 1030. A 7' by 1.7' panel and a 6" diameter panel were removed from the unit's duct-work/housing. Two 4' by 2' personnel access doors were opened as well to facilitate the work in progress. This resulted in an open pathway through the duct-work from the C/R to the HVAC room above the C/R where the A/C unit is located.

On 9-23-93 the Unit 2 Shift Supervisor was discussing the work in progress on the A train C/R HVAC system with a Systems Performance Engineering Supervisor. Based on their discussions the Shift Supervisor recognized that a problem might exist with the C/R pressurization boundary. An Operations Shift Foreman was sent to inspect the work in progress on the C/R Air Conditioner. He noted that a large panel had been removed from the unit's housing. The Shift Foreman discussed this with both units' Shift Supervisors and Operations management was informed of the situation. The appropriate drawings were reviewed and it was determined that an opening existed in the C/R

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pressurization boundary. Electrical Maintenance was instructed to stop work on the system and to replace the panels and secure the access doors. The openings in the system were closed within approximately thirty minutes from the time the adverse condition was discovered. This action reestablished the C/R pressurization boundary integrity and thus the ability to meet the T/S requirement for maintaining a positive C/R pressure.

CAUSE OF EVENT

This event was caused due to improper planning for the work in that proper consideration was not given to maintaining the C/R pressurization boundary.

REPORTABILITY ANALYSIS AND SAFETY ASSESSMENT

This event is reportable because: 1) two independent trains of C/R pressurization were unable to pressurize the C/R to the required Technical Specification value, and 2) because a single condition caused two independent trains of C/R pressurization to become inoperable. The shared C/R pressurization units are required to be operable per Technical Specification 3.7.7 as part of the C/R emergency air cleanup system.

In the event of a LOCA or other accident resulting in a radioactive release that could impact the control room, the ventilation duct openings would not have caused the C/R operators' dose to have exceeded regulatory limits. The B Train control room pressurization unit and recirculation units would be running. The open duct-work area on the A Train HVAC unit would have allowed a leakage path from the control room to the HVAC room above the control room. The HVAC room, although not leak tested is a designed air tight volume that does not communicate with outside air or the auxiliary building. Thus, the pressurization unit would provide a source of filtered air to the control room that would then leak out the duct-work openings in the HVAC room. The net outflow of air from the openings would prevent gross in leakage of outside air. In addition, airborne activity would have a minimal probability of entering the leak-tight HVAC room where the openings were located.

With the openings in the A Train duct-work, the B Train pressurization unit would not be able to pressurize the control room to the required 1/8" water gauge pressure. Should there be significant leakage of airborne activity into the control room it would be detected by a local area radiation monitor. This monitor provides control room annunciation if dose rate exceeds 1 mr/hr. This should alert the operators who would then investigate and isolate the source of activity ingress. The B Train recirculation units would be running to remove any iodine or particulate activity that does enter the control room.

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Thus, it is highly unlikely that significant airborne activity would have entered the control room HVAC room and further enter the HVAC open duct-work against the outflow of air. As a result no significant increase in dose to the control room operators would be expected as a result of this event.

Accidental release of chlorine is not considered to have been a credible hazard to the control room operators during this event. Gaseous chlorine is only utilized in the quantity of one 150 lb. cylinder which is located at the water treatment facility. The chlorine cylinder is located 450 feet from the Control Room. This distance is greater than the 100 meter stipulation given in Reg. Guide 1.78 for a 150 lb. chlorine cylinder to be considered a threat to the operators. Further, the chlorine cylinder is not currently in use but is valved out awaiting removal from site. Should a chlorine cloud pass in the direction of the auxiliary building the control room chlorine detectors would have alerted the operators and initiated control room isolation. The air tight control room HVAC room would have minimized any chlorine ingress through the open duct-work.

CORRECTIVE ACTION

A change to the component data base has been implemented, for all C/R HVAC equipment, to alert the planners that work on this component may result in opening a penetration to the C/R atmosphere and cannot be performed unless such penetrations are sealed or compensatory measures established.

As a further enhancement, the C/R HVAC system has had labels installed on all components, including access panels, that if removed or opened could cause a breach of the C/R pressurization boundary. The labels will require that the Shift Supervisor be notified that work on the component could affect the C/R boundary.

ADDITIONAL INFORMATION

No components failed during this event.

Another event which involved the C/R pressurization boundary was reported on May 11, 1988 by LER-88-010-00. However, that event did not involve inadvertent openings in the C/R pressurization boundary, but involved incorrect testing performed to specify the allowable amount (square footage) of open penetrations in the C/R.

Based on the discussion above, this event would not have been more severe if it had occurred under different operating conditions.