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DUKE POWER

March 17, 1993

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

Subject: Catawba Nuclear Station
Docket No. 50-413
LER 413/93-003

Gentlemen:

Attached is Licensee Event Report 413/93-003, concerning TECHNICAL SPECIFICATION
REQUIRED SURVEILLANCE NOT PERFORMED.

This event was considered to be of no significance with respect to the health and safety of the
public.

Very truly yours,

M. S. Tuckman
M. S. Tuckman

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NRC FORM 366 (5-92)		U.S. NUCLEAR REGULATORY COMMISSION			APPROVED BY OMB NO. 3150-0104 EXPIRES 5/31/95														
<h2 style="margin: 0;">LICENSEE EVENT REPORT (LER)</h2> <p style="font-size: small; margin: 5px 0;">(See reverse for required number of digits/characters for each block)</p>										ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.									
FACILITY NAME (1) <div style="text-align: center; font-weight: bold;">Catawba Nuclear Station, Unit 1</div>								DOCKET NUMBER (2) <div style="text-align: center; font-weight: bold;">05000413</div>				PAGE (3) <div style="text-align: center; font-weight: bold;">1 OF 05</div>							
TITLE (4) <div style="text-align: center; font-weight: bold;">TECHNICAL SPECIFICATION REQUIRED SURVEILLANCE NOT PERFORMED</div>																			
EVENT DATE (5)			LER NUMBER (6)			REPORT NUMBER (7)			OTHER FACILITIES INVOLVED (8)										
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER									
02	17	93	93	003	00	03	18	93	CNS, Unit 2	05000414									
									FACILITY NAME	DOCKET NUMBER									
										05000									
OPERATING MODE (9)		1		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)															
POWER LEVEL (10)		100		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									
				20.405(a)(1)(iii)		X 50.73(a)(2)(i)		50.73(a)(2)(viii)(A)		(Specify in Abstract below and in Text, NRC Form 366A)									
				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 (Include Area Code)											
R. C. Futrell, Compliance Manager								(803)831-3665											
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																			
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS										
SUPPLEMENTAL REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR					
YES (If yes, complete EXPECTED SUBMISSION DATE)					X NO														
ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)																			
<p>On February 16, 1993, Catawba Component Engineering personnel received an Operation Experience (OE) report documenting a problem discovered at South Texas, Unit 1. The OE report stated that a surveillance review task force had discovered that the portion of the containment Spray (NS) system channels between the process instrumentation and the Engineered Safety Features (ESF) actuation and logic instrumentation was not being properly tested. Upon examination, the Component Engineering personnel discovered that same problem existed at Catawba. The required testing was satisfactorily completed on February 18, 1993. Unit 1 was in Mode 1, Power Operation, at 100 percent power at the time the event was discovered. Unit 2 was in No Mode, Defueled. This event is assigned a cause of Deficient Written Communication due to relevant information being omitted from the surveillance test procedures because individuals developing the test procedures did not recognize the significance of the test points used to verify continuity of NS circuitry. The circuits in question were subsequently verified. Procedure changes will be implemented to ensure proper verification of continuity during future surveillance tests.</p>																			

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TEXT CONTINUATION

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Catawba Nuclear Station, Unit 1	05000 413	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	02 OF 05
		93	003	00	

TEXT (If more space is required, use additional copies of NRC Form 365A) (17)

BACKGROUND

The Containment Spray [EIS:BE] (NS) system is an Engineered Safety Feature (ESF) which keeps the Containment [EIS:NH] Building pressure within design limits by removing thermal energy after an accident. The system consists of two parallel flow paths, each with its associated pump [EIS:P], heat exchanger [EIS:HX], valves [EIS:V], spray header and piping [EIS:PSP].

The Solid State Protection [EIS:JC] System (SSPS) automatically initiates operation of the NS System upon high-high Containment pressure. To prevent depressurization, the operation of the NS system is automatically terminated when Containment pressure returns to normal by the Containment Pressure Control System (CPCS).

The CPCS is designed to prevent excessive or inadvertent operation of the NS system. It ensures that both trains of the NS system are inhibited when the Containment pressure is less than or equal to 0.25 psig. To function in this manner, the CPCS is designed to ensure that a single fault will not allow an erroneous operation of an NS train when Containment pressure is less than or equal to 0.25 psig. It also ensures that a single fault in the CPCS will not incapacitate both trains of NS when Containment pressure is greater than 0.25 psig and that the Control Room Operator is aware when portions of the NS system are nonresponsive to control demands.

Technical Specification (T/S) 4.3.2.1 states each Engineered Safety Feature Actuation System [EIS:JE] (ESFAS) instrumentation channel and interlock and the automatic actuation logic and relays shall be demonstrated OPERABLE by performance of the ESFAS requirements specified in Table 4.3-2. Table 4.3-2 requires a channel calibration every 18 months for Containment pressure high, Containment pressure high-high, and Containment Pressure Control System Start Permissive and Termination.

EVENT DESCRIPTION

On February 16, 1993, Catawba Component Engineering personnel received Operating Experience (OE) report 5634, Containment Spray Channel Not Being Completely Verified As Required Per Technical Specifications (TS). The report stated that on September 15, 1992, a surveillance review of adherence to TS requirements at South Texas, Unit 1 had identified that the portion of the NS system channels between the process instrumentation and the ESF actuation and logic instrumentation was not being tested properly. During the Solid State Protection System (SSPS) functional test the associated input relay contacts are opened for testing purposes.

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Upon completion of the required testing the input relay contacts are returned to the normal (closed) position. The ESFA system circuitry is normally de-energized to trip except for the NS system. To prevent spurious actuations the NS system bistables are energized to trip. Because of the normally de-energized condition of the NS System bistables, observation of the Status Monitoring Panel can not be used as an indication of circuit continuity after completion of testing.

Neither the Channel Calibration nor the SSPS functional test verifies the associated relay contacts are closed and there is circuit continuity. The only way to positively verify that the contacts are closed is to measure continuity across the circuit in a overlapping method after the test is complete. The report went on to say that by not verifying continuity after performing the required surveillance tests, the station violated the TS governing ESFA system instrumentation surveillance requirements.

The Component Engineering personnel investigated the procedures used for performance of the monthly surveillances on the NS system loops for the 7300 process channels and the SSPS functional tests, also the procedures governing Containment pressure loop calibrations. They discovered the scenario as described in the OE report to be applicable to the manner in which these surveillance tests had been performed at Catawba. No continuity checks had been performed to verify circuit continuity of the NS system circuits after the surveillance tests were performed. Therefore, like South Texas, Unit 1, both units at Catawba were in violation of the TS governing ESFA system surveillance requirements.

The Component Engineering personnel notified appropriate Operations (OPS) personnel of the discrepancy. A discussion was held to determine the proper course of action. The conclusion was that the proper solution was to perform surveillances as described in the OE report. The appropriate procedures will be changed, the Instrumentation and Electrical personnel involved were given instruction on what was to be performed, and the required testing was completed satisfactorily on February 18, 1993.

CONCLUSION

This event is assigned a root cause of Deficient Written Communication due to relevant information concerning performance of continuity checks being omitted from the surveillance test procedures involved. The individuals who developed the test procedures did not recognize the significance of the test points in the NS system circuitry involved and did not include steps to verify continuity of NS system circuitry after testing.

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Personnel involved in development of the surveillance test procedures did not recognize any particular significance of the test points, and did not recognize the need to verify circuit continuity after testing when the procedures were developed. No subsequent procedure reviews recognized the omission. Because of the omission, no continuity checks have been performed after testing to verify circuit continuity when the surveillances were performed. Appropriate tests were performed to verify circuitry continuity now exists, and appropriate procedural enhancements will be made to ensure proper verification of circuit continuity whenever the surveillances are performed.

A review of the Operation Experience Program Data Base indicates that there have been no TS violations involving Containment Spray System during the past 36 months. Therefore this incident is not classified as a recurring event.

CORRECTIVE ACTION

SUBSEQUENT

- 1) Test performed to assure circuitry continuity exists.

PLANNED

- 1) Revise test procedures to include proper circuit continuity checks.

SAFETY ANALYSIS

The NS system, as described in Catawba Nuclear Station Final Safety Analysis Report (FSAR) is designed to maintain the internal pressure in the Containment Building at less than 15 pound per square inch during a large break LOCA. This accident, as described in Chapter 15 of the FSAR, is a transient which releases a large amount of energy into the Containment Building. Having the capability of spraying cool water into the Containment Building during the LOCA transient, and allowing for long term cooling of the Containment Building atmosphere by alignment of NS system pump suction to the Containment recirculation sump, aids in maintaining the integrity of the Containment Building against the release of radioactivity to the environment. This contributes to control of offsite releases at values less than those specified in 10CFR100.

The event described in this LER is technical in nature in that it deals with the failure to perform a portion of a surveillance requirement. The T/S surveillance required that the actuation relays

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be tested to prove their operability every month. This test, to prove operability, was performed along with ESF testing on an 18 month cycle. All of these tests overlap on the portions of the circuitry that are tested. The testing performed upon discovery of the problem found no inoperable relays. The failure to test the return of the relays to their normal state does indicate that some of the surveillance testing was inadequate; however, there is no question that the circuitry would have actuated as required during an accident. Therefore, the health and safety of the public were not affected as a result of this event.