



DUKE POWER

April 19, 1990

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U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

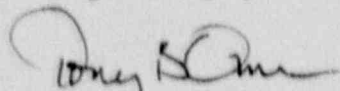
Subject: Catawba Nuclear Station
Docket No. 50-413
LER 413/90-18

Gentlemen:

Attached is Licensee Event Report 413/90-18 concerning TECHNICAL SPECIFICATION VIOLATION DUE TO MISSED SURVEILLANCE RESULTING IN POWER OPERATED RELIEF VALVES BEING DECLARED INOPERABLE.

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

Very truly yours,


Tony B. Owen
Station Manager

keb\LER-NRC.TBO

xc: Mr. S. D. Ebner
Regional Administrator, Region II
U. S. Nuclear Regulator Commission
101 Marietta Street, NW, Suite 2900
Atlanta, GA 30323

M & M Nuclear Consultants
1221 Avenues of the Americas
New York, NY 10020

INPO Records Center
Suite 1500
1100 Circle 75 Parkway
Atlanta, GA 30339

American Nuclear Insurers
c/o Dottie Sherman, ANI Library
The Exchange, Suite 245
270 Farmington Avenue
Farmington, CT 06032

Mr. K. Jabbour
U. S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Washington, D. C. 20555

Mr. W. T. Orders
NRC Resident Inspector
Catawba Nuclear Station

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)

Catawba Nuclear Station, Unit 1

DOCKET NUMBER (2)

0 5 0 0 0 4 1 1 3 1 OF 0 5

PAGE (3)

TITLE (4)

Technical Specification Violation Due to Missed Surveillance Resulting In
Pressurizer Power Operated Relief Valves Being Declared Inoperable

EVENT DATE (5)

LER NUMBER (6)

REPORT DATE (7)

OTHER FACILITIES INVOLVED (8)

MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)												
0	3	2	0	9	0	9	0	—	0	1	8	—	0	0	0	4	1	9	9	0	N/A	0 5 0 0 0
										0 5 0 0 0												

OPERATING MODE (9)

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following) (11)

20.402(b)

20.405(e)

50.73(a)(2)(iv)

73.71(b)

POWER LEVEL (10)

20.405(a)(1)(i)

50.36(a)(1)

50.73(a)(2)(v)

73.71(c)

20.405(a)(1)(ii)

50.36(a)(2)

50.73(a)(2)(vi)

OTHER (Specify in Abstract below and in Text, NRC Form 365A)

20.405(a)(1)(iii)

X

50.73(a)(2)(i)

50.73(a)(2)(viii)(A)

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)(ix)

LICENSEE CONTACT FOR THIS LER (12)

NAME

TELEPHONE NUMBER

R.M. Glover, Compliance Manager

AREA CODE

8 1 0 1 3 8 1 3 1 1 - 1 3 2 1 3 6

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC

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 fifteen single-space typewritten lines) (16)

On March 20, 1990, at 0700 hours, Unit 1 was in Mode 5, Cold Shutdown, with Reactor Coolant (NC) System fill and vent activities in progress. It was discovered that the PORVs Analog Channel Operational Tests (ACOTs) had not been performed on the PORV actuation circuits. Standing Work Requests (SWRs) issued to perform the ACOTs were not performed on the scheduled dates due to scheduling conflicts. The ACOTs were performed and the PORVs were returned to service on March 22 at 0050 hours. This event has been attributed to an Inappropriate Action. Corrective actions include better communication between groups prior to plant condition changes, revising procedures to ensure equipment operability meets T/S requirements, and revision of Maintenance Management Procedures to ensure proper scheduling of required SWRs.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/00

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Catawba Nuclear Station, Unit 1	0 5 0 0 0 4 1 3 9 0	—	0 1 8	—	0 0	0 2	OF 0 5

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

BACKGROUND

The Reactor Coolant [EIIS:AB] (NC) System consists of four heat transfer loops connected in parallel to the Reactor vessel [EIIS:VSL]. Each loop contains an NC Pump [EIIS:P] and a Steam Generator [EIIS:HX] (S/G). The second loop also includes a pressurizer, a pressurizer relief tank, interconnecting piping [EIIF:PSP] and instrumentation necessary for operation and control.

NC System pressure is controlled by the use of the Pressurizer where water and steam are maintained in equilibrium by electrical heaters [EIIS:EHTR] and water sprays. The Pressurizer is designed to accommodate positive and negative surges caused by load transients. The surge line, which is attached to the bottom of the Pressurizer, connects the Pressurizer to the hot leg of a Reactor coolant loop. Steam can be formed (by the heaters) or condensed (by the Pressurizer spray) to reduce pressure variations due to contraction and expansion of the Reactor coolant. Three spring loaded safety valves [EIIS:V] and three Power Operated Relief Valves (PORVs) are connected to the Pressurizer and discharge to the Pressurizer Relief Tank (PRT), where the steam is condensed and cooled by mixing with water.

The Pressurizer PORVs (NC32B, NC34A, NC36B) are designed to limit system pressure for a large power mismatch and thus prevent actuation of the fixed high-pressure Reactor trip. The PORVs are operated automatically by process control system circuits. The operation of these valves also limits the undesirable opening of the spring-loaded safety valves.

PORVs NC32B and NC34A are used to provide Low Temperature Overpressure Protection (LTOP) in accordance with the limits of 10CFR50 Appendix G. LTOP is required to protect the system against brittle fracture when the temperature is below 285 degrees F. (However, this setpoint must be periodically reviewed over plant life since the pressure - temperature limits change due to radiation exposure.) At the time LTOP is placed in operation (i.e. approximately 300 degrees F). The normal PORV pressure setpoint during operations is 2335 psig. As NC temperature is reduced, the PORV open setpoint pressure is reduced. LTOP limits the pressure to approximately 400 psig. At very low temperatures, a vent should be opened as well.

Technical Specification (T/S) 3.4.9.3, Overpressure Protection Systems Limiting Conditions For Operations, states that two PORVs shall be operable if the Reactor vessel head is on and NC vents are closed.

T/S 4.4.9.3.1, Overpressure Protection Systems Surveillance Requirements, requires that Analog Channel Operational Tests (ACOTs) must be performed on PORV actuation circuits prior to entering a condition in which the PORVs are required operable.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0106

EXPIRES: 6/30/86

FACILITY NAME (1) Catawba Nuclear Station, Unit 1	DOCKET NUMBER (2) 0500041390	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		0	18	00	03	OF	05

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

Maintenance Management Procedure (MMP) 3.5, Maintenance Required SWR Program, assigns responsibilities and describes activities associated with the Standing Work Request (SWR) Program. Preventive Maintenance (PM) codes are marked through when SWRs have been signed as complete by the responsible Maintenance Job supervisor although the requirements of the SWR have not been met. As per MMP 3.5, Section 4.7.4, Revision 6, the responsible job supervisor shall complete Attachment 1, attach it to the SWR and forward it to the responsible Planner where it is rescheduled prior to the latest date as required by the "Completed By" date on the SWR.

EVENT DESCRIPTION

On March 20, 1990, at 0700 hours, Unit 1 was in Mode 5 with NC System fill and vent activities in progress. The NC System PORVs were closed at 0708 hours in preparation for system pressurization to allow start of a Reactor Coolant pump. Later that day, correspondence between Maintenance Department personnel and NRC site representatives determined that the NC System PORVs were inoperable because the actuation circuit ACOTs had not been performed as required by Technical Specification 4.4.9.3.1 which states that ACOTs were to have been completed no more than 31 days prior to entering a condition requiring the PORVs operable. On March 21 and 22, the ACOTs were performed and the PORVs were returned to service.

CONCLUSION

This incident is attributed to an Inappropriate Action due to failure to follow procedures (MMP 3.5). The Preventive Maintenance (PM) Codes for the ACOT SWRs were marked through since the surveillances could not be completed, but Attachment 1 was not initiated by the IAE Supervisor as directed by MMP 3.5. Maintenance Engineering Services (MES) notified Planning by phone that the SWRs were to be rescheduled and that the LTOP portions of the SWRs be performed before closing the NC vent path. MES also informed the IAE Supervisor of this plan. Planning possibly misunderstood MES instructions and the SWRs were scheduled as if needed prior to Mode 3. In an interview with the IAE Supervisor, it was determined that the LTOP surveillances would have been performed if cognizant IAE personnel would have been notified prior to closing the NC vent path.

The LTOP surveillances were completed, and the LTOP PORV actuation circuits were proven to be in calibration.

Separate SWRs have been established for uninterrupted performance of monthly LTOP ACOTs during unit outages. Planned actions include revisions to the controlling procedure for Unit shutdown such that prior to installing the Reactor Vessel Head, IAE signoffs must be obtained. Operations will identify

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/00

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

Unit condition changes within Modes 1 through 6. A final list that includes equipment requirements for each condition will be provided to the responsible station groups. Station groups will use this list to determine when signoffs for condition changes need to be provided in the Operations procedure. The Operations Procedures group will incorporate these signoffs in their procedures.

A review of the OEP database revealed three reports in which inappropriate actions, poor communications and lack of training resulted in reportable incidents. Licensee Event Report (LER) 413/88-008 involved a communication breakdown between a Maintenance Supervisor and a Maintenance Planner. No corrective actions were identified. LER 413/88-022 involved a CMD Supervisor who did not follow MMP 1.0 on station modifications. Inadequate or lack of training for CMD personnel led to the installation of an incorrect part during maintenance activities. The recommended actions were to reemphasize MMP 1.0 to CMD and NPD personnel, and to evaluate previous modification training given to CMD personnel. LER 414/88-019 involved an event where training had been identified as unnecessary but the lack of this training resulted in a Reactor trip. The planned action required the Production Support Department and Operator Training Group to evaluate the implementation of the necessary training.

CORRECTIVE ACTION

SUBSEQUENT

- 1) ACOTs were performed by IAE and PORVs were declared operable.
- 2) Dedicated SWRs were established by MES for LTOP actuation circuit surveillances.

PLANNED

- 1) Operations will make changes to the controlling procedure for Unit shutdown such that prior to installing the Reactor Vessel Head, IAE signoffs must be obtained indicating that the ACOTs have been performed with the past 31 days.
- 2) Operations will identify Unit condition changes within Modes 1 through 6. Operations will generate and provide to each station group, a final list that includes equipment requirements based on Technical Specifications for each condition. Station groups will use this list to determine those activities under their control affecting operability of the equipment required for the condition changes identified in the Operations procedure. The Operations Procedure group will incorporate these signoffs in their procedures.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

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

- 3) MMP 3.5 will be revised to require that MES determine the next completion date for SWRs when the PM Code is marked through.

SAFETY ANALYSIS

Although the NC PORV ACOTs not being performed rendered the PORVs technically inoperable, when the surveillance was performed it was verified that the circuits were in calibration. As such, when the PORVs input from the wide range NC pressure gauges was properly restored the valves had full capability for response.

The health and safety of the public were not affected by this incident.