

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Catawba Nuclear Station, Unit 1	DOCKET NUMBER (2) 0 5 0 0 0 4 1 3	PAGE (3) 1 OF 0 4
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TITLE (4)
Containment Pressure Channel Unknowingly Inoperable Due To Unknown Cause

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)
1	2	0 6 8 6	8 6	0 5 9	0 2 0	2 0 2	0 2	8 8	N/A		0 5 0 0 0
THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)											

OPERATING MODE (9) 1	POWER LEVEL (10) 1 0 0	20.402(b)	20.405(a)(1)(i)	20.405(a)(1)(ii)	20.405(a)(1)(iii)	20.405(a)(1)(iv)	20.405(a)(1)(v)	20.405(c)	50.38(c)(1)	50.38(c)(2)	X 50.73(a)(2)(i)	50.73(a)(2)(ii)	50.73(a)(2)(iii)	50.73(a)(2)(iv)	50.73(a)(2)(v)	50.73(a)(2)(vii)	50.73(a)(2)(viii)(A)	50.73(a)(2)(viii)(B)	50.73(a)(2)(ix)	73.71(b)	73.71(c)	OTHER (Specify in Abstract below and in Text, NRC Form 388A)
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LICENSEE CONTACT FOR THIS LER (12)		TELEPHONE NUMBER	
NAME Julio G. Torre, Assistant Engineer - Licensing	AREA CODE 7 0 4	3 1 7 3	- 8 0 2 1 9

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
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)		<input checked="" type="checkbox"/> NO			

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On November 19, 1986, with the unit in Mode 2, Startup, it was noticed that one of the four narrow range containment pressure gauges was not moving with changes in other containment pressure indications. At 0630 hours, a work request was initiated to investigate and repair the cause of this problem. At 1000 hours, the Shift Technical Advisor logged the pressure gauge inoperable in the Technical Specification (Tech Spec) Action Item log under the Accident Monitoring Instrumentation Tech Spec. Subsequent investigation, on December 6, 1986, with the unit at 100% power, revealed that the isolation valve for the pressure transmitter in the loop was closed. The valve had been verified open on October 28, 1986, so it was apparently closed between then and November 19, 1986. This valve being closed resulted in a violation of Tech Specs with a containment pressure channel being unknowingly inoperable and not placed in the tripped condition, within the required time period.

The exact time the isolation valve was left closed could not be identified due to lack of evidence. The valve handle was subsequently verified to be correctly installed on the valve stem as a result of a later incident involving a similar valve (see LER 413/87-18). Therefore, the root cause of this incident remains unknown. A personnel error contributed to this incident. The STA did not adequately investigate the problem to determine if the entire instrument loop was inoperable, as opposed to just the gauge. This event was reviewed with appropriate personnel.

The health and safety of the public were unaffected by this event.

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

BACKGROUND

The Containment Spray (NS) System (EIIS:BE) is an Engineered Safety Feature which keeps the Containment Building pressure within the design limits by removing thermal energy after an accident. Containment pressure is monitored continuously using four pressure taps which penetrate the Containment Vessel and Reactor Building. Each tap utilizes up to four pressure transmitters to provide an electrical signal for various control and monitoring functions. The pressure transmitters are individually isolable by use of Dragon isolation valves (EIIS:V). The Solid State Protection System (SSPS) (EIIS:JC) generates a safety injection signal with 2 out of 3 narrow range (N/R) pressure channels at the high alarm setpoint of 1.2 psig. The SSPS automatically initiates containment spray with 2 out of 4 of the N/R pressure channels at the High-High alarm setpoint of 3.0 psig.

Technical Specification (Tech Spec) 3.3.2, Table 3.3-3, requires that with the number of operable channels one less than the total number of channels, operation may proceed until performance of the next required Analog Channel Operational Test provided the inoperable channel is placed in the tripped condition within one hour.

DESCRIPTION OF INCIDENT

On November 19, 1986, the unit was in Mode 2, Startup, following the End-of-Cycle 1 refueling outage. At 0630 hours, an Assistant Nuclear Control Operator noticed that containment pressure gauge 1NSP5050 was not moving with normal changes in containment pressure as compared to the other containment pressure gauges. He initiated a Work Request to investigate and repair the cause for the gauge not indicating properly. At 1000 hours the Shift Technical Advisor logged the gauge inoperable in the Tech Spec Action item Log (TSAIL) under Accident Monitoring Instrumentation Tech Spec 3.3.3.6. On December 6, at approximately 1120 hours, investigation per the work request revealed that the isolation valve (EIIS:ISV) to pressure transmitter 1NSPT5050 was closed, which was the cause of the gauge not moving. At 1125 hours, the pressure transmitter was logged inoperable and its associated channel placed in the tripped condition per Engineered Safety Features Actuation System Instrumentation Tech Spec 3.3.2. Technicians reopened the isolation valve and completed the work request at 1330 hours. The pressure transmitter and gauge were declared operable at 1345 hours.

CONCLUSION

The root cause of this incident could not be established. The isolation valve for 1NSPT5050 was independently verified open on October 28, 1986, per Containment Spray System Instrument Valve Start-Up Checklist Procedure IP/1/A/3820/17H. The valve was apparently inappropriately closed between then and November 19, 1986, when the Operator noticed the gauge not responding properly. The exact time the valve was closed could not be established because there is no chart recorder associated with 1NSPT5050 and closing the isolation valve does not cause any alarms to be generated or change the reading on the gauge. A review of the maintenance history for 1NSPT5050 and all transmitters in

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its proximity revealed no activities which could have manipulated the isolation valve between the dates in question. Similarly, there were no periodic tests performed between these dates which would have required that the isolation valve position be checked and/or changed. The transmitter is located in an easily accessible, fairly well lighted area and is clearly tagged. This valve being closed resulted in a violation of Tech Spec 3.3.2 with a Containment pressure channel being unknowingly inoperable and not placed in the tripped condition within one hour.

When it was first discovered on November 19, 1986, that there was a problem with this instrument loop, an entry was made in the TSAIL under the Accident Monitoring Instrumentation Tech Spec 3.3.3.6. This was because the Shift Technical Advisor who reviewed this problem for Tech Spec implications made the judgement that only the gauge was inoperable, not the entire instrument loop. According to Operations Management Procedure (OMP) 2-29, Tech Spec Logbook, when a gauge is inoperable, the cause should be assumed to be the associated transmitter unless it can be proven otherwise. The OMP requires that the transmitter be declared inoperable and appropriate actions taken. The gauge is labeled on the Main Control Board as being qualified for Post Accident Monitoring (PAM) use, even though it is not one of the two gauges installed specifically for PAM use. Because the gauge is PAM qualified, the Shift Technical Advisor logged it under Tech Spec 3.3.3.6 to assure that it would be tracked and repaired in a timely manner. Had the OMP guidelines been followed, the entire instrument loop would have been declared inoperable under the Engineered Safety Features Actuation System Tech Spec, and the duration of the Tech Spec violation would have been minimized. Therefore, a contributing cause to this incident is classified as Event Cause Code A, Personnel Error. The Shift Technical Advisor (STA) had 9 1/2 years experience with 2 1/2 years in the STA position at the time of this incident.

A personnel error contributed to this incident. The STA did not adequately investigate the problem to determine if the entire instrument loop was inoperable, as opposed to just the gauge. Had he determined or assumed that the loop was inoperable as specified in the appropriate OMPs, he would have logged it under the Engineered Safety Features Actuation System Tech Spec, and the duration of the Tech Spec violation would have been minimized.

Prior to this incident, there have been no previous occurrences of instruments being valved out for unknown reasons. Subsequent to this incident, there were three incidents involving instruments being found valved out (see LER 413/87-18, LER 414/87-28, and LER 413/87-27). The root cause of LER 413/87-18 was determined to be a loose valve handle turning on the valve stem. As a result of this incident, all Unit 1 and 2 NS pressure transmitter isolation valve handles were checked for proper installation and calibration procedures were modified to specify improved methods for return to service. The root cause of LER 414/87-28 remains unknown, however it was determined that the isolation valve was closed prior to discovery of all previous incidents. Also, as a result of this incident, Instrument Valve Startup Checklist procedures for both Units' NS Systems, were performed to verify correct valve alignment for all NS pressure transmitter isolation valves. LER 413/87-27 involved an Auxiliary Feedwater

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(EIIIS:BA) (CA) System pressure switch. The root cause of this incident was never determined, however several deficiencies were discovered and corrected which do not apply to any of the incidents involving NS pressure transmitters. The CA pressure switch had been omitted from the Instrument Valve Startup Checklist and was not being periodically calibrated. Due to the number of subsequent incidents involving valved out instrumentation, this is considered to be a recurring event. There have been several previous occurrences involving licensed Control Room personnel failing to recognize Tech Spec related operability concerns (see LERs 413/84-25, 413/85-05, 413/85-11, 413/85-18, 413/85-28, 413/85-40, 413/85-50, 413/85-57, 413/86-12, 413/86-18, 414/86-09 and 414/86-25). However, none of these incidents involved PAM or Containment Spray System instrumentation. The frequency of occurrence of incidents involving failure to recognize Tech Spec related operability concerns is decreasing.

CORRECTIVE ACTION

- (1) The Pressure transmitter was declared inoperable and placed in the tripped condition per Tech Spec 3.3.2.
- (2) Technicians reopened the pressure transmitter isolation valve and the transmitter was declared operable.
- (3) This incident was reviewed with all Shift Supervisors and Shift Technical Advisors to ensure that instances such as this will be adequately investigated to determine the operability status of the entire instrument loop, as opposed to individual components.

SAFETY ANALYSIS

Throughout this incident, the minimum number of containment pressure channels required to be operable per Tech Specs 3.3.2 and 3.3.3.6 were operable. This assured that had there been an event resulting in an increase in containment pressure, the available containment pressure instrumentation would have initiated the appropriate automatic actions.

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

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February 2, 1988

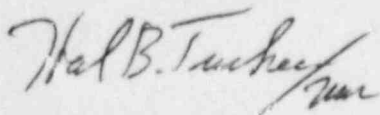
Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Subject: Catawba Nuclear Station, Unit 1
Docket No. 50-413
LER 413/86-59, Revision 2

Gentlemen:

Pursuant to 10 CFR 50.73 Section (a) (1) and (d), attached is Revision 2 to Licensee Event Report 413/86-59 concerning a containment pressure channel unknowingly inoperable due to an unknown cause. This event was considered to be of no significance with respect to the health and safety of the public.

Very truly yours,



Hal B. Tucker

JGT/136?/ebn

Attachment

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