NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Catawba Nuclear Station, Unit 1	0 5 0 0 0 4 1 3	1 OF 0 4

TITLE (4)

Safety Injection Actuated During Unit Heat-Up Due To A Personnel Error

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 1	2 3	8 8	8 8	— 0 0 7	— 0 0	0 2	2 2	8 8	N/A	0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9)	3	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	0 0 0	20.402(b)	20.405(c)	X 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 Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	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)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
Julio G. Torre, Associate Engineer - Licensing	7 0 4 3 1 7 3 - 1 8 0 2 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
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

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

On January 23, 1988, at 1039 hours, Safety Injection was actuated due to Low Steamline Pressure. Unit heatup was in progress. When Reactor Coolant System pressure reached 1955 psig, Safety Injection was automatically initiated because Main Steam pressure was less than 725 psig. The Unit was in Mode 3, Hot Standby, at the time of this incident.

This incident is attributed to a personnel error. The Control Room Operator did not ensure that Main Steam pressure was not increased sufficiently to greater than 725 psig, prior to Reactor Coolant System pressure reaching 1955 psig as required by procedure.

Control Room personnel utilized the appropriate Emergency Procedures, reset Safety Injection, Load Sequencer, and Containment Isolation signals, and secured the Emergency Core Cooling System. To ensure adequate oversight of Unit evolutions, Operations will review the functions of the Control Room Senior Reactor Operator and revise if appropriate. Also, a computer alarm will be requested to indicate that reactor coolant pressure is increasing to 1955 psig, and an Operator Update will be issued concerning this incident. With the unit in Mode 3, the effects of injection flow on primary system parameters were minimal.

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:

Safety Injection (EIIS:BO) (S/I) is initiated on several conditions, among those is low steamline pressure (<725 psig). S/I on this condition is blocked when Pressurizer (EIIS:PZR) Pressure is below 1955 psig.

OP/1/A/6100/01, Controlling Procedure for Unit Startup, provides guidance to take the Unit from Cold Shutdown to 15% Reactor (EIIS:RCT) power. The procedure directs the Operator to refer to the Heatup Curve in OP/1/A/6700/01, Unit 1 Data Book, while heating up and pressurizing the Reactor Coolant (EIIS:AB) (NC) System. The procedure also provides a caution statement concerning S/I actuation if NC pressure exceeds 1955 psig before Main Steam (EIIS:SB) pressure reaches 725 psig.

DESCRIPTION OF INCIDENT:

At shift turnover at 0700 hours, on January 23, 1988, the Unit was heating up in Mode 3, Hot Standby, with Reactor Coolant (NC) System pressure being approximately 1400 psig and NC temperature at approximately 400 degrees F. OP/1/A/6100/01, Controlling Procedure for Unit Startup, was being followed to accomplish heatup.

The Control Room Operator was observing increasing NC pressure and Main Steam pressure. To ensure that the proper limits for these parameters were observed, the Operator was using a graph of NC and Main Steam pressure displayed on the Inadequate Core Cooling Monitor (ICCM). The Startup Procedure directed the Operator to use the Heatup Curve from OP/1/A/6700/01, Unit 1 Data Book. As heatup continued, the Operator read a Caution Statement in OP/1/A/6100/01 which warned that Safety Injection (S/I) will be initiated if NC pressure reaches 1955 psig prior to Main Steam pressure reaching 725 psig.

At 1039 hours, S/I due to low steamline pressure actuated when NC pressure reached 1955 psig. Load Sequencers A and B were actuated. Main Steam Isolation and Containment Isolation were initiated automatically. Diesel Generators (EIIS:DG) (D/Gs) A and B started and Feedwater Isolation was automatically initiated. The Emergency Core Cooling System (ECCS) Pumps (EIIS:P) (Residual Heat Removal, Safety Injection, and Centrifugal Charging) started and provided flow through the Charging Pumps Discharge To Cold Leg Isolation valves (EIIS:V), 1NI9 and 1NI10. Charging suction flow swapped automatically to the Refueling Water Storage Tank (EIIS:TK).

Control Room personnel entered EP/1/A/5000/01, Reactor Trip on Safety Injection, and EP/1/A/5000/1B, S/I Termination Following Spurious S/I. As directed by EP/1/A/5000/1B, Control Room Operators reset ECCS and Load Sequencers at 1043 hours. The ECCS pumps were then secured. Containment Isolation signals were then manually reset. Normal charging and letdown were re-established at 1048 hours.

CONCLUSION:

This incident is attributed to a personnel error. The Control Room Operator did not ensure that Main Steam pressure was increased to greater than 725 psig prior to NC pressure increasing to 1955 psig during Unit heatup, even though the Startup Procedure was being used and provided a caution statement concerning S/I. The Operator had no actual prior experience performing Unit heatup, other than simulated heatup during training. There was a minimal amount of distracting activities in progress in the Control Room at the time.

To ensure that proper control of infrequent Unit evolutions is in place, Operations will review the functions of the Control Room Senior Reactor Operator (SRO) and revise if appropriate. Operations will also request the addition of a computer alarm to indicate that NC pressure is approaching 1955 psig, and will issue an Operator Update concerning this incident.

Work Request 26796 OPS was originated to investigate/ repair the Event Recorder problem. This work request is currently backlogged, but the Event Recorder provided output on January 24, 1988, and appears functional.

There have been no previous Engineered Safety Features actuations due to personnel not recognizing the need to take action. However, there have been previous Engineered Safety Features actuations due to failure to follow procedure (see LER 413/85-48, LER 413/85-43, LER 413/86-51, LER 414/86-23, and LER 414/87-25).

CORRECTIVE ACTION:

SUBSEQUENT

(1) Safety Injection, D/G Load Sequencer, and Containment Isolation signals were reset by the Control Room Operators.

(2) The ECCS was reset and secured by the Control Room Operators.

(3) The incident was reviewed with the involved Operator.

(4) Operations submitted a request for a pseudo point to provide a computer alarm on Reactor Coolant pressure increasing to 1955 psig.

PLANNED

(1) The functions of the Control Room SRO will be reviewed and revised if appropriate.

(2) An Operator Update concerning this incident will be issued.

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

SAFETY ANALYSIS:

Following initiation of Safety Injection, plant systems responded as expected. Emergency Core Cooling System (Residual Heat Removal, Centrifugal Charging, Safety Injection) Pumps started automatically and provided approximately 300 gpm cold leg injection flow. Motor Driven Auxiliary Feedwater Pumps started and flow was throttled by the Control Room Operators. With the Unit in Mode 3 at the time of the actuation, the effects of injection flow on primary system parameters were minimal. Reactor Coolant temperature was approximately 503 degrees F prior to the actuation and trended to approximately 510 degrees F after 30 minutes. Reactor Coolant pressure was approximately 1955 psig prior to the actuation and trended to approximately 1940 psig after 30 minutes. Pressurizer level was approximately 25% prior to the actuation and trended to approximately 47% after 30 minutes. Steam generator levels were approximately 38% narrow range prior to the actuation and trended to approximately 40-50% narrow range after 30 minutes. Operator response was in accordance with existing emergency procedures.

The total accumulated actuation cycles of Safety Injection on Unit 1 is 4. The nozzle usage factor is less than 0.7.

This incident is reportable pursuant to 10CFR 50.73, Section (a)(2)(iv), and Technical Specification Section 3.5.2.

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

DUKE POWER COMPANY
P.O. BOX 33189
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HAL B. TUCKER
VICE PRESIDENT
NUCLEAR PRODUCTION

TELEPHONE
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February 22, 1988

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

Subject: Catawba Nuclear Station, Unit 1
Docket No. 50-413
LER 413/88-07

Gentlemen:

Pursuant to 10 CFR 50.73 Section (a) (1) and (d), attached is Licensee Event Report 413/88-07 concerning a Safety Injection actuation due to a personnel error. 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/1434/sbn

Attachment

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