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 2	0 5 0 0 0 4 1 4	1 OF 0 4

TITLE (4)
ESF Actuations Due To Leaking Instrumentation Vent Valve

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 4	2 6	8 6	8 6	0 1 0	0 0	0 5	2 7	8 6	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)	X	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
			20.405(a)(1)(iii)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)(A)		50.72(b)(2)(ii)
			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
Roger W. Ouellette, Associate Engineer, Licensing	AREA CODE 7 0 4 — 3 7 3 1 - 7 5 3 0

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 April 26, 1986, at 2305:39 hours, Steam Generator (S/G) 2A channel 3 level indicator pegged high causing a S/G Hi Hi Level alarm actuation. Simultaneously, the S/G 2A channel 1 level indicator was out of service and in a tripped condition, with a pending work request. These conditions resulted in the automatic start of the Auxiliary Feedwater Pumps, Main Feedwater (CF) Isolation, and Letdown Isolation. Letdown Isolation was restored and channel 1 level indicator for S/G 2A was repaired, allowing the restart of a Main Feedwater Pump and the resetting of CF isolation. The unit was in Mode 3, Hot Standby, at the time of this incident.

This event is assigned Cause Code X, Other. The spurious actuation of S/G 2A channel 3 level indicator was caused by a vent valve on the reference leg of the level transmitter leaking-by.

This event is reportable pursuant to 10CFR 50.73, Section (a)(2)(i)(B), 50.73, Section (a)(2)(iv), and 50.72 Section (b)(2)(ii).

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

BACKGROUND:

Each Steam Generator (S/G) is supplied with four channels of narrow range level instrumentation. This instrumentation provides the high-high and low-low S/G level alarms in the Control Room. Technical Specifications (Tech Specs) require that at least 3 of the 4 S/G level channels be operable any time the unit is in Mode 3, Hot Standby, and above. If any one S/G level channel is out of calibration or becomes inoperable, Tech Spec 3.3.2 requires that the inoperable channel be placed in a tripped position within one hour of discovery. In the event the number of operable channels is less than the minimum channels operable, (ie: 2 out of 4 inoperable) the unit must be in at least Mode 3, Hot Standby, within 6 hours and Mode 5, Cold Shutdown, within 30 hours.

DESCRIPTION OF EVENT:

On April 24, 1986, at 1100 hours, a Work Request was issued to repair a leak on Steam Generator (S/G) 2A channel 1 level indicator transmitter line. At 1350 hours, a second Work Request was written to investigate and repair S/G 2A, channel 1 level indicator, due to it reading out of tolerance. On April 26, 1986, at 2305:39:905 hours, S/G 2A Hi Hi Level Turbine Trip alarm was actuated. Immediately the Main Feedwater (EIIS:SJ) Pump Turbine (CFPT) B Solid State Protection System protective trip occurred. At 2305:40 hours, the Motor Driven Auxiliary Feedwater (CA) (EIIS:BA) Pumps A and B started automatically. At 2305:41 hours, S/G Blowdown Isolation occurred, and Main Feedwater (CF) Isolation was initiated.

As the CA flow was supplied to the S/G's, operators throttled the control valves in order to prevent actual S/G Hi-Hi levels. As the temperature of the Reactor Coolant System (EIIS:AB) began to decrease, shrinking took place and Pressurizer (PZR) heater groups A, B and D de-energized automatically. PZR level reached 17% and Letdown Isolation occurred. As level in the PZR began to rise, the PZR heater groups A, B and D energized automatically, and letdown was restored automatically.

At 2375 hours, a third Work Request was written to investigate and repair S/G 2A channel 3 level indicator, failing high. On April 27, 1986, while investigating the second Work Request, it was discovered that the first Work Request was written to repair a leak on S/G 2A, channel 1 level indicator. This work request was completed and channel 1 level indicator was returned to service. The second Work Request was voided due to the S/G 2A, channel 1 level indicator being repaired under a previous Work Request.

At 0328:00 hours, CFPT B was started and the Blowdown Isolation valves were opened.

At 0337:49 hours, CF Isolation was reset. The CF Isolation valves were opened and at 0401:06 and 0401:08 hours, CA Pumps B and A were secured respectively.

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

At 1400 hours, the third Work Request was completed after the vent valve at the fill pot of the transmitter reference leg was tightened. The channel 3 level indicator returned to normal level.

CONCLUSIONS:

This incident is assigned Cause Code X, Other. The vent valve at the fill pot of the high pressure transmitter line was leaking by the seat. Once this valve was tightened, channel 3 level indicator 2CFP5500 began to function properly. After investigation into other work performed on the channel 3 level indicator and transmitter, no work could be found that would have resulted in the loosening of this vent valve. This valve may have been tightened with no S/G pressure during initial filling of the reference leg. Upon system pressure increase, the initial tightening may not have been sufficient to prevent the leakage.

Although there was a start of the Turbine Driven Auxiliary Feedwater Pump during this incident, the start was a result of surveillance testing. Although this pump was operating during this incident, there was no flow to the S/G's and no effect on the S/G's operation.

The S/G Hi Hi Level actuation continued to alarm and return to normal several times during this incident. This can be attributed to the instrument valve leaking by.

Following the CF Isolation signal, Distribution Center EDA Positive and Negative Legs ungrounded and grounded computer alarms were received. In addition, the D/G Battery A Negative Side ungrounded. This has occurred in several previous CF Isolation incidents.

There have been two other incidents where ESF actuations have occurred due to spurious S/G Hi Hi Level indications when one channel was in the tripped condition (see LER's 414/36-01 and 414/86-03).

CORRECTIVE ACTION:

1) The third Work Request was completed, allowing channel 3 level indicator to be returned to service.

2) The first Work Request was completed returning channel 1 level indicator 2CFP5501 to service.

3) CF isolation was reset, CFPT B was restarted, and Motor Driven CA Pumps A and B were secured.

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SAFETY ANALYSIS:

Levels in the S/G's were relatively constant at approximately 50% during this transient, with fluctuations occurring as a result of CA control valve manipulations. The start of the Auxiliary Feedwater Pumps ensured feedwater flow to the S/G's and provided an adequate heat sink for the Reactor Coolant System although no decay heat was present due to Unit 2 not achieving initial criticality. The Pressurizer (PZR) level initially dropped due to cooler auxiliary feedwater being supplied. PZR level responded as expected and stabilized at approximately 32%, following Letdown isolation.

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

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HAL B. TUCKER
VICE PRESIDENT
NUCLEAR PRODUCTION

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May 27, 1986

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

Subject: Catawba Nuclear Station, Unit 2
Docket No. 50-414

Gentlemen:

Pursuant to 10 CFR 50.73 Section (a) (1) and (d), attached is Licensee Event Report 414/86-10 concerning ESF actuations due to a High-High Steam Generator level caused by an instrumentation vent valve leaking by its seat. 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

Hal B. Tucker

RWO/jgm

Attachment

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Catawba Nuclear Station

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