

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		
TITLE (4) Nuclear Service Water Swapover to Standby Pond																	
EVENT DATE (5)			LER NUMBER (6)				REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)							
MONTH	DAY	YEAR	YEAR	SEQUENTIA- NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES				DOCKET NUMBER(S)				
0 4	2 2	8 5	8 5	0 2	6	0 0	0 5	2 2	8 5					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)														
POWER LEVEL (10)			20.402(b)				20.406(c)				<input checked="" type="checkbox"/> 50.73(a)(2)(iv)				73.71(b)		
0 1 0 1 0			20.406(a)(1)(i)				50.36(c)(1)				<input type="checkbox"/> 50.73(a)(2)(v)				73.71(e)		
			20.406(a)(1)(ii)				50.36(c)(2)				<input type="checkbox"/> 50.73(a)(2)(vi)				<input checked="" type="checkbox"/> OTHER (Specify in Abstract below and in Text, NRC Form 365A)		
			20.406(a)(1)(iii)				50.73(a)(2)(i)				<input type="checkbox"/> 50.73(a)(2)(viii)(A)				50.72(b)(2)(ii)		
			20.406(a)(1)(iv)				50.73(a)(2)(ii)				<input type="checkbox"/> 50.73(a)(2)(viii)(B)						
			20.406(a)(1)(v)				50.73(a)(2)(iii)				<input type="checkbox"/> 50.73(a)(2)(x)						
LICENSEE CONTACT FOR THIS LER (12)																	
NAME Roger W. Ouellette, Assistant Engineer - Licensing										TELEPHONE NUMBER AREA CODE 7 0 4 7 3 - 7 5 3 0							
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																	
CAUSE	SYSTEM	COMPONENT	MANUF- TURER	REPORTABLE TO NPDOS		CAUSE	SYSTEM	COMPONENT	MANUF- TURER	REPORTABLE TO NPDOS							
X	BI	IXIIS	ALLI810	No													
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)																	
<p>On April 22, 1985, at 1310 hours, the Nuclear Service Water (RN) System aligned to the Standby Nuclear Service Water Pond (SNSWP), the assured suction source, on Pumphouse Pit B low-low level. The low-low level occurred when valve 1RN4B, "RN Pumphouse Pit B Isolation from SNSWP", was being opened from the control room to facilitate performance of the RN System flow balance to the SNSWP. The valve stroked to the intermediate position, while control room indications incorrectly showed the valve as being fully open. The normal suction from the lake was subsequently isolated with RN Pump 1B still operating, thus causing a decrease in pit level to the low-low level setpoint.</p> <p>A subsequent investigation revealed that the torque switch for valve 1RN4B was set to the low end of allowable tolerance. This setting did not allow 1RN4B to completely open. Also, the "closed" indication for 1RN4B was not functioning properly, leading the operator to believe that the valve was fully open, rather than in intermediate position. Therefore, this incident is classified as a Component Malfunction. Unit 1 was in Mode 5, Cold Shutdown, at the time of the incident. This incident is reportable pursuant to 10 CFR 50.73, Section (a)(2)(iv), and 10 CFR 50.72, Section (b)(2)(ii).</p>																	
8505310689 850522 PDR ADOCK 05000413 S PDR																	

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES 8/31/85

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

The Nuclear Service Water (RN) System is a raw water cooling system which serves as the ultimate heat sink for essential and non-essential primary loads, as the assured source of suction for the Auxiliary Feedwater System, and as the assured source of cooling for heat loads served by the Containment Chilled Water System. The RN Pumps normally take suction from the lake via the RN Pumphouse Pits, and discharge back to the lake via the Low Pressure Service Water (RL) System. In the Pumphouse, there are two separate suction pits from which the two independent and redundant trains of RN are supplied. Each train includes two RN pumps, with one RN pump being capable of supplying both Unit 1 and Unit 2 with ample cooling during normal operation, and one pump per unit required to supply ample cooling in emergency conditions.

When a low-low level signal is initiated in either Pit A or B, the following functions will automatically occur:

- 1) All four RN pumps start.
- 2) Closure of RN Pump seal injection water crossover (To provide supply channel isolation).
- 3) The RN Pumphouse Intake Pits are isolated from the lake and aligned to take suction from the SNSWP.
- 4) The normal RN discharge through the RL System is isolated, and the RN System is aligned to discharge to the SNSWP.
- 5) RN Supply Headers A and B are isolated into two separate headers, and the RN non-essential supply header is isolated.
- 6) RN Discharge Headers A and B are isolated into two separate headers, and the RN non-essential discharge header is isolated.
- 7) The Diesel Generator Cooling Water Returns to the lake are closed, and the returns to the SNSWP are opened.

Valve 1RN3A, "RN Pumphouse Pit A Isolation from SNSWP", and 1RN4B, "RN Pumphouse Pit B Isolation from SNSWP", are the valves required to be open to allow RN Pump suction from the SNSWP. Both of these valves can be controlled from and have indications provided for Unit 1 and Unit 2, as they are shared valves.

At about 1250 hours, on 4-22-85, the Unit 2 Nuclear Control Operator (NCO) began aligning the RN System to allow performance of SNSWP Discharge Flow Testing. The flow balance is performed under Section 12.10 of Test Procedure TP/2/A/1400/01, RN System Functional Test. During previous runs of this section, flow problems had been encountered.

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

Design Engineers had been informed of the problems and were on site on 4-22-85 to observe testing. The flow testing performed at this time was not a retest of Section 12.10 of TP/2/A/1400/01, but only a trial run to verify operating characteristics. Enclosure 13.27 of Procedure TP/2/A/1400/01 was being used by the NCO to align the RN System.

During the RN System alignment, the NCO attempted to open valve 1RN4B, "RN Pumphouse Pit B Isolation from SNSWP", by depressing the "OPEN" push-button on the Unit 2 controls. When he did this, the "CLOSED" indication (Unit 2) for this valve began flickering, until it eventually remained off. The NCO then proceeded to perform the remainder of the valve alignment, which ensured that the RN Pumps were taking suction from and discharging to the SNSWP. Unit 1 RN Pumps continued to operate throughout the valve alignment.

At this time, an "RN Pumphouse Pit B Low Level" Alarm occurred. The Unit 1 NCO then observed the Unit 1 indications for 1RN4B, which showed the valve to be in an intermediate position, i.e., both open and closed indicating lights were lit. The Unit 1 and Unit 2 controls for valve 1RN4B were operated in an attempt to completely open the valve. The RN Pumphouse Pit B level continued to decrease, and at 1310:34 hours, an "RN Pumphouse Pit B Low-Low Level" Signal occurred. At that point, various RN System valves began automatically re-positioning as designed upon low-low level signal, and RN Pumps 2A and 2B automatically started.

Valve 1RN4B then stroked to the fully open position, allowing SNSWP makeup to RN Pumphouse Pit B. At 1311:15 hours, RN Pumphouse Pit B Low-Low Level signal cleared. The NCO verified that the RN System aligned properly upon RN Pumphouse Pit B Low-Low Level Signal, and then proceeded to re-position certain RN valves as necessary to perform flow testing.

It is not known whether valve 1RN4B fully opened due to action taken by the NCO's or automatically opened due to the low-low level signal. However, it did open to provide a source of suction to the B Train RN Pumps, clearing the low-low level in 41 seconds.

After occurrence of this incident, a work request was initiated to investigate and repair the reason for the failure of 1RN4B to open. The torque switch was found set at $1\frac{1}{4}$, which is the low end of the allowable range specified by the valve manufacturer ($1\frac{1}{4} - 2\frac{3}{4}$). This caused inconsistent operation of 1RN4B, i.e., failure to completely cycle at times. Also, the "CLOSED" indication for 1RN4B did not initially function correctly, but started working properly after repeated cycles of the valve; this is probably due to dirty limit switch contacts. It is likely that the "CLOSED" indication ceased to function properly when the light began to flicker during the initial valve alignment. The proper operation of this indication would have correctly shown the valve position as intermediate. Therefore, this incident is classified as a Component Malfunction.

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

1RN4B is a 48" Allis-Chalmers Butterfly Valve. A search of NPRDS has indicated no previous reported occurrences of this type.

CORRECTIVE ACTION

- 1) The NCO verified proper system alignment in response to the low-low level signal.
- 2) Valve 1RN4B torque switch was re-adjusted per Work Request 158430PS.

SAFETY ANALYSIS

Each RN Pump is sized to provide the maximum flow required for one unit during a postulated Loss of Coolant Accident. While RN Pump 1B continued to operate and was provided minimum required submergence during this incident, RN Pump 1A was also operating and available to supply cooling for Unit 1 components as needed. Also, the low-low level condition in RN Pumphouse Pit B was cleared in 41 seconds. RN Pump 1B was capable of supplying adequate cooling water even before the low-low level signal was cleared, as 1) Valve 1RN4B did open to provide a flow path from the SNSWP to the pit, and 2) Pump minimum required submergence was met.

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

DUKE POWER COMPANY

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HAL B. TUCKER
VICE PRESIDENT
NUCLEAR PRODUCTION

May 22, 1985

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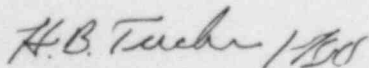
Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Subject: Catawba Nuclear Station, Unit 1
Docket No. 50-413

Gentlemen:

Pursuant to 10 CFR 50.73 Section (a) (1) and (d), attached is Licensee Event Report 413/85-26 concerning a Nuclear Service Water Swapover to the Standby Pond. 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

RWO:slb

Attachment

cc: Dr. J. Nelson Grace, Regional Administrator
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