

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Catawba Nuclear Station, Unit 1	DOCKET NUMBER (2) 0 5 0 0 0 4 1 1 3	PAGE (3) 1 OF 0 3
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TITLE (4)  
Both Residual Heat Removal Pumps 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		
0 9	0 8	8 4	8 4	0 1 2	0 0 1 0	0 9	1 7	8 4	DOCKET NUMBER(S) 0 5 0 0 0		

OPERATING MODE (9) 5	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)							
POWER LEVEL (10) 0 1 0 0	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)				
	20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v) <input checked="" type="checkbox"/>	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)(ix)					

LICENSEE CONTACT FOR THIS LER (12)		TELEPHONE NUMBER
NAME	AREA CODE	NUMBER
Roger W. Ouellette, Assistant Engineer-Licensing	7 1 0 4	3 1 7 3 1 - 1 7 5 3 1 0

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)											
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS		

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 September 8, 1984, at 0300 hours, a quarterly performance test was conducted for Residual Heat Removal (ND) Pump 1A. After the test was completed and ND Pump 1A declared operable, ND Pump 1B was taken out of service for maintenance. On September 17, 1984, the procedure used for testing the performance of ND Pump 1A was reviewed. During this review, it was discovered that the acceptance criteria for differential pressure at full flow was not met. Because of failure to meet the acceptance criteria, ND Pump 1A should have been declared "inoperable" and corrective actions taken. On September 18, 1984, at 0915 hours, ND Pump 1A was declared "inoperable" and continued in that status until September 21, 1984, when a retest was performed resulting in ND Pump 1A being declared operable.

Unit 1 was in Mode 5, Cold Shutdown, at the time of this incident.

Since both ND Pumps for Unit 1 were "inoperable" at the same time, this incident is reportable under 10 CFR 50.73(a)(2)(v)(b); which states that any event that could prevent the fulfillment of the safety function of systems that are needed to remove Residual Heat shall be reported.

The cause of this incident is classified as a Personnel Error, because the Technician declared ND Pump 1A operable due to misinterpretation of test data.

Even though ND Pump 1A was "inoperable" between September 9th and September 21st, it remained in service, providing recirculation through the core to maintain temperature.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			

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

In order to enter into Mode 6, Initial Fueling, it was required to prove both Residual Heat Removal (ND) Pump 1A and 1B operable. This was done by using ND Pump Performance Tests PT/1/A/4200/10A and PT/1/A/4200/10B. These initial tests were conducted to establish the reference values that were used to derive the baseline acceptance criteria for all subsequent performance tests on the ND Pumps. This was performed in accordance with ASME Boiler and Pressure Vessel Code, Section XI, Subsection IWP.

ND Pump 1A Performance Test conducted on September 8, 1984, per PT/1/A/4200/10A, was the first quarterly test. While performing this test, it is required to verify that ND Pump 1A Differential Pressure (DP) be greater than or equal to 169 PSID in its mini-flow alignment. The differential pressure of 176 PSID, which satisfies Tech Spec 4.5.2.F.3, was recorded on the test data sheet. The pump was taken out of its mini-flow mode by opening valve 1ND32A (ND Train 1A Hot Leg INJ ISOL) and slowly throttling valve 1ND26 (ND HX 1A Outlet Control) until flowrate was approximately 4000 GPM. After 5 minutes of pump run time, the flowrate, inlet pressure, and discharge pressure was recorded in three 5-minute intervals. Once this data had been collected, the test was complete.

With the data taken during the test, the average flowrate, inlet pressure, and discharge pressure was calculated. These values were used to calculate the differential pressure for 4000 GPM. Once these calculations were completed, the pump performance acceptability must be verified within 96 hours. The acceptability of the pump was verified, but in doing so the wrong differential pressure was used. The data sheet has two differential pressures logged on it. One is the differential pressure for the pump in mini-flow, which is used for meeting Tech Spec requirements. The other is the differential pressure at 4000 GPM. The acceptance criteria for the differential pressure at 4000 GPM was between 164 PSID and 180 PSID which the mini-flow differential pressure meets. However, the proper differential pressure at 4000 GPM was calculated as 131 PSID, which would have required the pump to be declared inoperable.

On September 17th, a Supervisor reviewed test procedure PT/1/A/4200/10A. While doing so he discovered the error caused by using the wrong differential pressures and determined that ND Pump 1A should have been declared inoperable during this test.

After further review on the test results in PT/1/A/4200/10A and comparison of the baseline acceptance criteria to the ND Pump 1A Performance Curve, it was thought that the process gauges used to establish the baseline acceptance criteria and run the first quarterly test may have been out of tolerance. Work Request 2595 PRF was initiated to recalibrate flowrate gauge 1NDPG 5041, and the two pressure gauges 1NDPG 5201 and 1NDPG 5101. All three gauges were out of tolerance and had to be recalibrated. Because of this, the baseline acceptance criteria for PT/1/A/4200/10A was reestablished. Once the baseline acceptance criteria was established per IWP and reviewed, test procedure PT/1/A/4200/10A was completed and ND Pump 1A was declared "Operable".

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

Because the correct correlation between the differential pressure taken at 4000 GPM and the appropriate differential pressure in the acceptance criteria was not made, the cause of this incident is classified as a Personnel Error.

The contributing cause of this incident is classified as an Administrative/Procedural Deficiency. The acceptance criteria used in procedure PT/1/A/4200/10A was incorrect and had been derived by using out of tolerance equipment. It is believed that if the test procedure format was better organized, this incident may not have occurred.

CORRECTIVE ACTION

ND Pump 1A was declared inoperable.

Work Request 2595 PRF was initiated to recalibrate process gauges used in the ND Pump 1A Performance Test.

New baseline acceptance criteria established declaring ND Pump 1A operable.

Employee Training and Qualification System (ETQS) is a program that will be used to qualify technicians on tasks/procedures before beginning a job. Currently the ETQS program is still under development and will not begin implementation until early 1985.

A review of procedures for human factor considerations to include in consideration of the idea of putting acceptance criteria on the Test Data Sheet will be conducted. The expected completion date of this review has not been established, but a working group will meet and establish the scope and time frame of this project.

The verification for the subsequent action was the review justifying the retest data.

The verification for the planned action is the implementation of the ETQS Program and a completed review of Test Procedures for Human Factors considerations.

SAFETY ANALYSIS

ND Pump 1A Performance Test indicated that the pump required corrective action and should have been declared "inoperable". However all three gauges used for this test were found to be out of tolerance and subsequently recalibrated. A retest was performed indicating ND Pump 1A was operable.

Unit 1 was in Mode 5 and had not yet reached criticality therefore no residual heat was present. This event did not pose any threat to the health and safety of the general public.

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HAL B. TUCKER  
VICE PRESIDENT  
NUCLEAR PRODUCTION

TELEPHONE  
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October 17, 1984

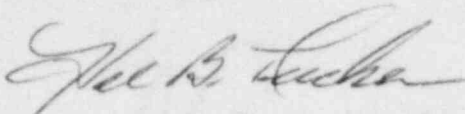
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U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

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

Gentlemen:

Pursuant to 10 CFR 50.73 Sections (a) (1) and (d), attached is Licensee Event Report 413/84-12 concerning both residual heat removal pumps declared inoperable. 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:s1b

Attachment

cc: Mr. James P. O'Reilly, Regional Administrator  
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