

## 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) Motor Driven Auxiliary Feedwater Pump Automatic Start																		
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 5	2 8	8 5	8 5	0 3	5	0 0	0 6	2 7	8 5					0 5 0 0 0				
OPERATING MODE (9) 4			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following) (11)															
POWER LEVEL (10) 01 01 0			20.402(b)				20.406(e)				<input checked="" type="checkbox"/> 50.73(a)(2)(iv)				73.71(b)			
			20.406(a)(1)(i)				50.36(e)(1)				50.73(a)(2)(v)				73.71(c)			
			20.406(a)(1)(ii)				50.36(e)(2)				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)				50.73(a)(2)(vii)(A)				50.72(b)(2)(ii)			
			20.406(a)(1)(iv)				50.73(a)(2)(ii)				50.73(a)(2)(viii)(B)							
			20.406(a)(1)(v)				50.73(a)(2)(iii)				50.73(a)(2)(ix)							
LICENSEE CONTACT FOR THIS LER (12)																		
NAME Roger W. Ouellette, Associate Engineer - Licensing										TELEPHONE NUMBER 7 1 0 4 3 7 1 3 1 - 1 7 1 5 1 3 1 0								
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																		
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC								
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 May 28, 1985, at 0950:48 hours, both motor driven Auxiliary Feedwater (CA) pumps automatically started due to a low suction flow trip of both Main Feedwater (CF) pumps. The low suction flow trip was caused by a Condensate (CM)/CF flow transient which was initiated while transferring the CM and CF Systems from high pressure to low pressure clean-up. Following this incident, CF pump A was reset at 0953:32 hours, and both motor driven CA pumps were subsequently secured. Catawba Unit 1 was in Mode 4 (Hot Shutdown) when this incident occurred.

During the transfer from high pressure to low pressure clean-up, the Nuclear Control Operator inappropriately verified the position of valve 1CM127 which caused a CM/CF flow transient. Therefore, this incident is classified as a Personnel Error.

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

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## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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)

Before introducing feedwater into the steam generators (S/G's), the water chemistry of the Condensate (CM) and Main Feedwater (CF) Systems must be within certain operating specifications. A recirculation loop is established through the CF and CM Systems by opening valve 1CF26 (CF Clean-up Isolation) and closing valve 1CM123 (CM Clean-up Isolation). Recirculation in the loop is provided by the hotwell pumps. By use of this recirculation loop, CM and CF flow is cleaned until the chemistry is within specifications for addition to the S/G's. This is known as high pressure clean-up.

After the required water specifications have been achieved and the S/G's filled, the CM and CF Systems are transferred to low pressure clean-up. This is accomplished by opening valve 1CM123 and closing valve 1CF26 which removes the CF System from the recirculation loop and allows the CF pumps to be started when needed. During low pressure clean-up, the CM System takes condensed steam from the main condenser hotwell, cleans it, heats it to improve cycle efficiency, and provides suction to the CF pumps for delivery to the S/G's.

Procedure OP/1/A/6250/01 (Condensate and Feedwater System) provides steps for proper operation of the CM and CF Systems and guidelines for placing the CM and CF Systems in high pressure or low pressure clean-up. Prior to transferring from high pressure to low pressure clean-up, if one or more CF Pumps are reset, OP/1/A/6250/01 requires valve 1CM127 (CM-CF Clean-up Flow Control) to be closed with the controller in manual. This is to ensure that a CM/CF flow transient does not develop which could cause a trip of the CF pumps. After the CM and CF Systems are placed in low pressure clean-up with the CF pumps reset, 1CM127 is opened and adjusted to maintain CM flow between 3500 and 8000 GPM. The CF pumps can then be started as required.

On May 28, 1985, OP/1/A/6250/01 was in progress, and the CM and CF Systems were required to be transferred from high pressure to low pressure clean-up. Both CF pumps were reset, and the Auxiliary Feedwater (CA) System was aligned for stand-by readiness. Prior to transferring to low pressure clean-up, 1CM127 was required to be closed with the controller in manual. When the Nuclear Control Operator (NCO) was verifying this requirement, he looked at the valve position indicator for the polish demineralizer bypass control valves (1CM42 and 1CM186) instead of the position indicator for 1CM127. At this time, the polish demineralizer bypass control valves were closed with the controller in manual. Upon seeing this, the NCO inappropriately verified that 1CM127 was closed with the controller in manual. He then proceeded to transfer the CM and CF Systems from high pressure to low pressure clean-up.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

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When the NCO placed the CM System in low pressure clean-up, CF pump A and B suction flow emergency low trips were initiated. This caused both motor driven CA pumps to automatically start. CF pump A was reset and both motor driven CA pumps were subsequently secured.

The position indicator for the polish demineralizer bypass control valves is located immediately beside the position indicator for valve 1CM127 on control board 1MC13. Each indicator is labeled with the respective valve nomenclature, and the indicator for 1CM127 is also labeled with the valve tag number (1CM127).

At the time of this incident, 1CM127 was not fully closed. Because 1CM127 was not closed, a CM/CF flow transient was initiated when the NCO transferred the CM and CF Systems to low pressure clean-up which caused a CF pump low suction flow trip. Since the CA System was aligned for stand-by readiness, the CF pump trip initiated an automatic start of the motor driven CA pumps. Therefore, this incident is classified as a Personnel Error.

Enclosure 4.1, step 2.34 and Enclosure 4.2, step 2.8 of OP/1/A/6250/01 require the polish demineralizer bypass control valves to be set at approximately 35 PSID with the controller in auto. However, at the time of this incident, the polish demineralizer bypass control valves were closed with the controller in manual. Certain operating conditions require that these valves be operated with the controller in manual. Since these conditions deviate from the requirement of OP/1/A/6250/01, a procedure change was made to OP/1/A/6250/01 to allow for these situations.

CF pump trips have been experienced in the past while transferring from high pressure to low pressure clean-up. The requirement to close valve 1CM127 was added to OP/1/A/6250/01 on February 15, 1985, to prevent CM/CF flow transients.

CORRECTIVE ACTION

- 1) CF pump A was reset.
- 2) Motor driven CA pumps A and B were secured.
- 3) This incident was discussed with the appropriate personnel.
- 4) A procedure change was made to OP/1/A/6250/01, Enclosure 4.1, Step 2.34 and Enclosure 4.2, Step 2.8 as follows:

NOTE: Normally the following controller should be in AUTO to ensure flowpath if Polisher Demineralizer isolates.

"When informed by Chemistry that oxygen levels permit placing Polishing Demineralizers in service, coordinate with Chemistry the setpoint and position for the controller for the Polish Demineralizer Bypass Control."

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

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EXPIRES 5/31/85

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This change was also incorporated into OP/2/A/6250/01, Condensate and Feedwater System.

SAFETY ANALYSIS

The motor driven CA pumps responded as designed upon the trip of CF pumps A and B. All Steam Generator levels were maintained above 38% Narrow Range which assured an adequate heat sink for the Reactor Coolant System. 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

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June 27, 1985

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 413/85-35 concerning a motor driven auxiliary feedwater pump automatic start. This event was considered to be of no significance with respect to the health and safety of the public.

Very truly yours,

*H.B. Tucker /HBT*

Hal B. Tucker

RWO:slb

Attachment

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