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 3

TITLE (4)

Auto Start of Motor Driven Auxiliary Feedwater Pumps

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)
1 1	1 9	8 4	8 4	— 0 2 3	— 0 0	1 2	1 9	8 4		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 1 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
Roger W. Ouellette, Assistant Engineer - Licensing	7 0 4 3 7 3 - 7 5 8 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 November 19, 1984, at 0645 hours, Motor Driven Auxiliary Feedwater (CA) Pumps 1A and 1B started due to an emergency low suction flow signal from both Main Feedwater (CF) Pumps. Unit 1 was in Mode 3 (Hot Standby) with the CA System in standby readiness.

Prior to starting CF Pump 1B, low pressure cleanup recirculation was established, and the high pressure cleanup line was isolated. This was done to prevent overpressurization of the high pressure cleanup line downstream of the CF Pumps.

Due to the low demand of Feedwater and the low pressure cleanup recirculation alignment, flowrate through the CF Pumps was reduced to below the low suction flow trip point (3,000 GPM Per CF Pump). The Motor Driven CA Pumps were automatically started after a trip signal was initiated for both CF Pumps.

The cause of this incident is classified as an Administrative/Procedural Deficiency, because the Condensate and Feedwater Procedure, OP/1/A/6250/01, did not allow for a minimum flowrate through the CF Pumps during their startup.

The immediate corrective action was to manually trip both Motor Driven CA Pumps.

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

IE22
1/1

8501080526 841219
PDR ADOCK 05000413
S PDR

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Catawba Nuclear Station, Unit 1	0 5 0 0 0 4 1 3	8 4	— 0 2 3	— 0 0	0 2 OF 0 3

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

The Condensate (CM), Feedwater (CF), and Auxiliary Feedwater (CA) Systems supply the Steam Generator's secondary sides with water.

The CM System takes condensate from the Condenser Hotwells, purifies it, reheats it to improve thermal cycle efficiency, and delivers it to the CF System through the Hotwell Pumps and Booster Pumps.

The CF System supplies feedwater to the four Steam Generators (S/G) at the temperature, pressure, and flow required to maintain proper S/G water levels. There are many signals which will trip the CF Pumps. However, the two trip signals pertinent to this incident are Emergency Suction Flow (3000 GPM Per CF Pump) and Emergency Low Suction Pressure (275 psig), both of which have five second delays.

The CA System assures sufficient feedwater supply to the S/Gs in the event of loss of the CM/CF Systems. The Motor Driven CA Pumps will automatically start in the event of:

- Loss of offsite power
- Trip of both CF Pumps
- Safety injection signal
- Low low S/G water level

Prior to this incident, Unit 1 was in Mode 3 with the CA System placed in Standby Readiness. Both CF Pumps were reset and windmilling while a Hotwell Pump and a Condensate Booster Pump supplied the necessary flow through the CF Pumps, keeping them in a reset condition. At least one CF Pump must be taken out of the tripped condition by resetting it, prior to aligning the CA System for standby readiness. Since there was low demand of feedwater to the S/G's, a flow of 7,000 GPM was being maintained by recirculating feedwater through the high pressure condensate cleanup line to the upper surge tank dome. This flow was regulated by setting the selector for Valve 1CM-127 (CM-CF Cleanup Flow Control) to 7,000 GPM. A controller maintains the selected condensate flow by throttling valve 1CM-127.

The pressure on the secondary side of the S/Gs was high enough to require a CF Pump to be started to continue to provide feedwater. Operations Procedure OP/1/A/6250/01, Section 4.3 (Feedwater Pump Startup), was used. It directed the lineup of the low pressure cleanup recirculation flow path by opening valve 1CM-123, and closing valve 1CF-26, which isolates the high pressure cleanup recirculation flow path.

Much of the feedwater flow was diverted through the low pressure condensate cleanup line before it recirculated through the CF Pumps. This lineup caused the low suction flowrate alarm to be generated thus causing the auto start of the Motor Driven CA Pumps.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Catawba Nuclear Station, Unit 1	0 5 0 0 0 4 1 3	8 4	— 0 2 3	— 0 0	0 3 OF 0 3

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

CORRECTIVE ACTION

Both Motor Driven CA Pumps were manually tripped, allowing the Feedwater System to continue supplying water to the Steam Generators.

The Condensate and Feedwater Procedure has been changed to accommodate the startup of a CF Pump by recirculating to the Condenser to maintain the required flowrate through the CF Pumps.

SAFETY ANALYSIS

Unit 1 was in Mode 3 prior to initial criticality. No residual heat was present or being removed by the Steam Generators. Feedwater to the S/Gs was never disrupted during this incident. Thus, the health and safety of the public were unaffected by this incident.

DUKE POWER COMPANY
P.O. BOX 33189
CHARLOTTE, N.C. 28242

HAL B. TUCKER
VICE PRESIDENT
NUCLEAR PRODUCTION

TELEPHONE
(704) 373-4531

December 19, 1984

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 413/84-23 concerning the auto start of the Motor Driven Auxiliary Feedwater Pumps. 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 /BS

Hal B. Tucker

RWO:slb

Attachment

cc: Mr. James P. O'Reilly, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

INPO Records Center
Suite 1500
1100 Circle 75 Parkway
Atlanta, Georgia 30339

Mr. Jesse L. Riley
Carolina Environmental Study Group
854 Henley Place
Charlotte, North Carolina 28207

Robert Guild, Esq.
P. O. Box 12097
Charleston, South Carolina 29412

Palmetto Alliance
2135½ Devine Street
Columbia, South Carolina 29205

American Nuclear Insurers
c/o Dottie Sherman, ANI Library
The Exchange, Suite 245
270 Farmington Avenue
Farmington, CT 06032

M&M Nuclear Consultants
1221 Avenue of the Americas
New York, New York 10020

NRC Resident Inspector
Catawba Nuclear Station

IE22
1/1