

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)

Fort Calhoun Station, Unit No. 1

DOCKET NUMBER (2)

0 5 0 0 0 2 8 5 1 OF 0 3

PAGE 13

TITLE (4)

Partial Loss of D.C. Power

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	3	1	4	8	4	0	0	3	N	0 5 0 0 0 0	
0	3	1	4	8	4	0	0	3		0 5 0 0 0 0	
THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)											
OPERATING MODE (9)		5	20.402(b)			20.408(c)			X	50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)		0 0 0	20.408(a)(1)(i)			50.38(c)(1)				50.73(a)(2)(v)	73.71(c)
			20.408(a)(1)(ii)			50.38(c)(2)			X	50.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Test, NRC Form 366A)
			20.408(a)(1)(iii)			50.73(a)(2)(i)				50.73(a)(2)(vii)(A)	
			20.408(a)(1)(iv)			50.73(a)(2)(ii)				50.73(a)(2)(viii)(B)	
			20.408(a)(1)(v)			50.73(a)(2)(iii)				50.73(a)(2)(ix)	

LICENSEE CONTACT FOR THIS LER (12)

NAME Alan W. Richard, Supervisor-Technical
Fort Calhoun Station

TELEPHONE NUMBER

AREA CODE

4 0 2 4 2 6 - 4 0 1 1

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE)	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
<input checked="" type="checkbox"/>	<input type="checkbox"/>				

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

In the process of tagging out Instrument Inverter B for maintenance, a switching error was made. Maintenance Procedure MP-EE-9 for Instrument Inverter Maintenance was being used. The procedure called for opening the D.C. feeder breaker to the inverter but instead the operator opened a breaker which supplies D.C. power to Control Room Panel AI-41b. As a result, two reportable events occurred. The first event was that both channels of Steam Generator Low Signal (SGLS) which is an Engineered Safety Feature, unblocked and tripped. The second event was that the Component Cooling Water (CCW) system which is a safety system became inoperable. Several CCW valves failed open on loss of D.C. power. The increased flow demand in the system caused a drop in CCW system pressure. When the CCW system dropped below 60 psig, the raw water back-up valves to several components normally cooled by CCW opened. When the Raw Water back-up valves opened the head pressure in the CCW system caused a CCW inventory loss through the back-up valves to the extent that the running CCW pump began cavitating and had to be secured.

Approximately two minutes after the event occurred, the operator realized his mistake and reclosed the breaker restoring D.C. power to the distribution panel in the control room. The control room operators then closed the raw water back-up valves that had opened. Refilling of the CCW system was started. Approximately one hour later the CCW system inventory was restored and the system was returned to service.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES 8/31/85

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8 4	0 0 3	0 0	0 2	OF	0 3

TEXT (If more space is required, use additional NRC Form 388A's) (17)

In the process of tagging out Instrument Inverter B for maintenance, a switching error was made. Maintenance Procedure MP-EE-9 for Instrument Inverter Maintenance was being used. The procedure called for opening the D.C. feeder breaker to the inverter but instead the operator opened a breaker which supplies D.C. power to Control Room Panel AI-41B. As a result, two reportable events occurred. The first event was that both channels of Steam Generator Low Signal (SGLS) which is an Engineered Safety Feature, unblocked and tripped. The second event was that the Component Cooling Water (CCW) system which is a safety system became inoperable. Several CCW valves failed open on loss of D.C. power. The increased flow demand in the system caused a drop in CCW system pressure. When the CCW system dropped below 60 psig, the raw water back-up valves to several components normally cooled by CCW opened. When the Raw Water back-up valves opened the head pressure in the CCW system caused a CCW inventory loss through the back-up valves to the extent that the running CCW pump began cavitating and had to be secured.

Approximately two minutes after the event occurred, the operator realized his mistake and reclosed the breaker restoring D.C. power to the distribution panel in the control room. The control room operators then closed the raw water back-up valves that had opened. Refilling of the CCW system was started. Approximately one hour later the CCW system inventory was restored and the system was returned to service.

The approved procedure which was being used was correctly written. The error was made when the wrong breaker on the panel was opened. The Plant was in a refueling shutdown, Mode 5, as required by the procedure at the time of the event. The incident occurred at 1411 hours on March 14, 1984. The error was made by a licensed reactor operator (RO license).

The Steam Generator Low Signal is designed to close the feedwater and main steam line isolation valves to prevent an uncontrolled heat extraction in the case of a main steam line or feedwater line break on a Steam Generator. The plant was in a refueling shutdown condition at the time of the incident. The steam generators were depressurized and were already isolated at the time SGLS unblocked and initiated.

The raw water backup valves to the CCW system are air operated fail open valves. Each backup valve is controlled by two solenoid (primary and secondary) valves energized from independent DC buses. This configuration allows the backup valve to remain closed in the event the primary solenoid loses DC power. However, the secondary solenoid on each backup valve is de-energized whenever CCW system pressure falls below 60 psig. When AI-41B was inadvertently de-energized, power was removed from the primary solenoids of the raw water backup valves

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associated with that panel. When CCW system pressure dropped below 60 psig, the secondary solenoids for those valves de-energized allowing the valves to open.

The Component Cooling Water System supplies cooling water to the Shutdown Cooling Heat Exchangers. Technical Specification 2.1.1(4) requires at least one shutdown cooling loop to be in operation while the plant is in a refueling shutdown condition. An exception to this specification allows all decay heat removal loops to be inoperable for eight hours provided (1) no operations are permitted that would cause dilution of the reactor coolant system boron concentration, (2) no refueling operations are taking place, and (3) all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere are closed within four hours. The CCW system was inoperable for approximately one hour. The Technical Specification limitations were not exceeded. The Shutdown Cooling Heat Exchangers are provided with raw water backup in case of a loss of component cooling water. The raw water system, although not used or needed during this incident, was operable and available throughout the event.

Omaha Public Power District
1623 Harney Omaha, Nebraska 68102
402/536-4000

April 13, 1984
FC-163-84
LIC-84-107

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

Reference: Docket No. 50-285

Gentlemen:

Licensee Event Report for
the Fort Calhoun Station

Please find attached Licensee Event Report 84-003 dated April 13, 1984. This report is being submitted per requirements of 10 CFR 50.73.

Sincerely,



W. C. Jones
Division Manager
Production Operations

WCJ/JCB:jmm

Attachment

cc: Mr. Richard P. Denise, Director
Division of Resident, Reactor Project
& Engineering Programs
U. S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011

INPO Records Center
Mr. E. G. Tourigny, Project Manager

SARC Chairman
PRC Chairman
Mr. L. A. Yandell, Senior Resident
Inspector
Fort Calhoun File (2)

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