

Omaha Public Power District
444 South 16th Street Mall
Omaha, Nebraska 68102-2247
402/636-2000

February 27, 1992
LIC-92-053L

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station P1-137
Washington, DC 20555

Reference: Docket No. 50-285

Gentlemen:

Subject: Licensee Event Report 92-003 for the Fort Calhoun Station

Please find attached Licensee Event Report 92-003 dated February 27, 1992.
This report is being submitted pursuant to 10 CFR 50.73(a)(2)(i)(B). If you
should have any questions, please contact me.

Sincerely,

W. G. Gates

W. G. Gates
Division Manager
Nuclear Operations

WGG/dle

Attachment

c: R. D. Martin, NRC Regional Administrator
D. L. Wigginton, NRC Senior Project Manager
S. D. Bloom, NRC Project Engineer
R. P. Mullikin, NRC Senior Resident Inspector
INPO Records Center

JE22

LICENCEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)
Fort Calhoun Station Unit No. 1DOCKET NUMBER (6)
0 5 0 0 0 2 8 5 1 OF 0 4TITLE (4)
Technical Specification 2.19 Violation Due to Missed Fire Watch

EVENT DATE (6)			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 (8)												
0	1	2	8	9	2	9	2	0	0	3	0	0	0	2	7	9	2	N	0	5	0	0	0

OPERATING MODE (9)	POWER LEVEL (10)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 50.73 (Check one or more of the following) (11)																																
1	0 7 4	<table border="0"><tr><td>20.402(b)</td><td>20.405(c)</td><td>50.73(a)(2)(M)</td><td>73.71(b)</td></tr><tr><td>20.405(a)(1)(i)</td><td>50.36(c)(1)</td><td>50.73(a)(2)(V)</td><td>73.71(c)</td></tr><tr><td>20.405(a)(1)(ii)</td><td>50.36(c)(2)</td><td>50.73(a)(2)(M)</td><td rowspan="4">OTHER (Specify in Abstract below and in Text, NRC Form 358A)</td></tr><tr><td>20.405(a)(1)(iii)</td><td>50.73(a)(2)(i)</td><td>50.73(a)(2)(M)(A)</td></tr><tr><td>20.405(a)(1)(iv)</td><td>50.73(a)(2)(ii)</td><td>50.73(a)(2)(M)(B)</td></tr><tr><td>20.405(a)(1)(v)</td><td>50.73(a)(2)(iii)</td><td>50.73(a)(2)(C)</td></tr></table>												20.402(b)	20.405(c)	50.73(a)(2)(M)	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)(M)	OTHER (Specify in Abstract below and in Text, NRC Form 358A)	20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(M)(A)	20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(M)(B)	20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(C)
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20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(C)																																

LICENCEE CONTACT FOR THIS LER (12)
NAME: Craig E. Booth, Shift Technical Advisor
TELEPHONE NUMBER: 410 253 3131-16 8714

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	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC

SUPPLEMENTAL REPORT EXPECTED (14)
YES (If yes, complete EXPECTED SUBMISSION DATE) ☐ NO ☒ X
EXPECTED SUBMISSION DATE (15)
MONTH: DAY: YEAR:

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

At 1035 hours on January 28, 1992, while in Mode 1 at 74 percent power, Zone 2 alarm on Fire Alarm Panel AI-54A actuated. This alarm was acknowledged at the AI-54A and AI-56 (XL-3) panels. Approximately five hours later, the on-coming operating crew reviewed the computer printout of activities on XL-3 and noted that this alarm had been acknowledged at 1035 hours, but had not been reset. During this time the zone was inoperable, and compensatory measures were not taken as required by Technical Specification 2.19(1). This event is being reported pursuant to 10 CFR 50.73(a)(2)(i)(B).

The root cause of this event was inadequate personnel performance due to a lack of attention/concentration. A contributing cause was inadequate administrative control to identify fire detectors potentially impacted by welding activities, so that appropriate compensatory measures would be considered.

The failure to establish the hourly fire watch for Room 13 had limited safety significance because the Fire Hazards Analysis determined that a loss of all equipment and cabling in the area would not adversely affect safe plant shutdown.

Upon determination that Zone 2 was inoperable, the fire detectors in the welding area of Room 18 were disabled and appropriate compensatory measures were established. Corrective actions to be taken include revising Standing Order M-9 "Fire Protection During Flame Cutting, Grinding and Welding Operations" and the associated Form FC-18; and, training operators on this event.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 80.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) Fort Calhoun Station Unit No. 1	DOCKET NUMBER (2) 0 5 0 0 0 2 8 5	LER NUMBER (4)			PAGE (3)	
		YEAR 9 2	SEQUENTIAL NUMBER 0 0 3	REVISION NUMBER 0 0	0 2	OF 0 4

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

The fire detection system at Fort Calhoun Station (FCS) includes: 1) a high-voltage (HV) system which monitors most of the detectors installed in the plant; and, 2) a low-voltage (LV) addressable system, which monitors three safety related detection zones and acts as the interface between the HV system and the fire alarm annunciator on the Main Control Board.

Detectors on the HV system produce an alarm indication on their associated Fire Alarm Panel (AI-54A/B) by shorting across a detection circuit (zone). If one detector activates, the detection zone goes into alarm. Subsequent activation of other detectors in the same zone cannot be discerned because the circuit has already been shorted by the initial detector, and subsequent shorts will not be apparent to the fire alarm panel because they will not change the electrical characteristics of the detection circuit. If one detector in a zone alarms falsely without fire or smoke present and does not reset, not only is the detector inoperable, but the entire zone is inoperable because activation of the remaining operable detectors would not cause a subsequent alarm on the fire alarm panel.

Individual detectors on the LV system communicate with the fire alarm panel. A false alarm on one detector renders that detector inoperable, but the remaining detectors in the zone are unaffected. The individual detection zones, but not the detectors themselves, on panel AI-54A/B communicate with the LV (XL-3) alarm panel, and the XL-3 panel activates the fire alarm annunciator on the Main Control Board. This alerts Operations personnel in the event of an alarm for any zones on AI-54A/B or any detectors controlled by the XL-3 panel.

At 0803 hours on January 28, 1992, with the plant in Mode 1 at 74 percent power, Zone 2 on AI-54A went into alarm. In accordance with Operating Instruction (OI) FP-4, "Fire Detection System", the alarm was acknowledged and an operator was dispatched to investigate the cause of the alarm. The operator reported back that no fire was present, but welding was being performed in Room 18 and it was the probable cause of the alarm. A check was made of the "Flame Cutting and Welding Permit Log" and a valid permit was found for the work in Room 18.

With the verification of a false alarm and the correct documentation in place for the welding, the alarm was reset at 0806 hours. Within seconds of resetting, a second alarm for Zone 2 was received and acknowledged. The operator was requested to identify the detector in alarm. It was subsequently confirmed to be a detector in Room 18, and the operator also reported that work had stopped at that time. The alarm was then successfully reset at 0825 hours.

After resetting the alarm, the control room operator informed the Shift Supervisor (SS) that spurious alarms had been received for Zone 2 due to welding in Room 18. The Control Room operator was informed that if the alarm could not be reset, then if possible, the Fire Protection System Engineer should be contacted for assistance in determining the correct compensatory measures and, that in addition, a fire watch must be in place within one hour as required by the Technical Specification.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORD AND REPORTS MANAGEMENT BRANCH (P-630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) Fort Calhoun Station Unit No. 1	DOCKET NUMBER (2) 0 5 0 0 0 2 8 5	LER NUMBER (3)			PAGE (4)	
		YEAR 9 2	SEQUENTIAL NUMBER - 0 0 3	REVISION NUMBER - 0 0	0 3 OF 0 4	

TEXT (If more space is required, use additional NRC Form 308A's)(17)

At 1028 hours, Zone 2 once again went into alarm, and was acknowledged. As before, it was determined that the source was the welding in Room 18 and the alarm was reset at 1032 hours. Approximately three minutes later, Zone 2 went into alarm again. The alarm was acknowledged at 1035 hours and the operator who responded to the alarm thought that he had reset the alarm at that time.

At approximately 1515 hours, the Shift Technical Advisor (STA) checked the fire protection panel as part of preparation for shift turnover. The STA observed that Zone 2 on AI-54A was in alarm and the XL-3 showed one alarm and one trouble indication. The trouble indication does not impair system operability. This incident was reported to the relief-STA and the on-coming operating crew.

The on-coming crew reviewed the computer printout of activities on XL-3 and noted that the alarm had been acknowledged at 1035 hours, but had not been reset. The zone was successfully reset at 1536 hours.

This failure to reset the zone resulted in the entire Zone 2 being inoperable for approximately five hours, without ensuring that necessary compensatory measures were in place. A review of the active fire watches indicated that only one room in Zone 2, Room 13, did not have adequate compensatory measures in place. An hourly fire watch should have been established for Room 13, in accordance with Technical Specification 2.19(1). As a result of this failure to comply with the Technical Specifications, this report is being submitted pursuant to the requirements of 10 CFR 50.73(a)(2)(i)(B).

A root cause analysis was performed which identified that the cause of this event was inadequate personnel performance due to a lack of attention/concentration. A contributing cause was inadequate administrative control to identify fire detectors potentially impacted by welding activities, so that appropriate compensatory measures would be considered.

The failure to establish the hourly fire watch for Room 13 had limited safety impact. The Fire Hazards Analysis indicates that a loss of all equipment and cabling in Room 13 would not adversely affect safe plant shutdown, due to the failure position of the associated valves. In addition, the room contains only a limited amount of combustibles and a fire would be expected to cause only minor damage.

If a fire had occurred in Room 13, it is likely that an active hourly fire watch would have passed the door to this room and would have identified the condition. Additionally, the ventilation from Room 13 is directed to the Auxiliary Building Exhaust fans VA-40A/B/C. Smoke from a fire would have caused an alarm in Zone 27 and tripped the fans. At that time, operations personnel would have been led to the identification and extinguishing of a fire had it existed.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 36.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) Fort Calhoun Station Unit No. 1	DOCKET NUMBER (2) 0 5 0 0 0 2 8 5	LER NUMBER (3)			PAGE (4)	
		YEAR 9 2	SEQUENTIAL NUMBER 0 0 3	REVISION NUMBER 0 0	0 4 OF 0 4	

TEXT (If more space is required, use additional NRC Form 588A's)(17)

Upon determination that Zone 2 was inoperable, the fire detectors in the area of Room 18 affected by welding were disabled and appropriate compensatory measures were established. Disabling the detectors prevented spurious alarms, while keeping the remainder of the zone active.

The following corrective actions will be taken:

1. Form FC-18, "Flame Cutting and Welding Permit", will be revised to include a section for identifying any fire detectors in the immediate area of the work. This will be completed by April 17, 1992.
2. Standing Order M-9, "Fire Protection During Flame Cutting, Grinding and Welding Operations", will be revised to include guidance for compensatory actions to be considered when working near fire detection equipment. This will be completed by April 17, 1992.
3. Training will be provided to the operators (initial and requalification) on this event emphasizing the need to adequately assess the potential problems that may occur due to "Hot Work" near fire detection equipment. This will be completed by June 30, 1992.

The following LERs have been submitted due to missed fire watches: 91-06, 90-27, 90-24, 90-01, 89-18, 89-11, 88-30 and 88-25.