

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Callaway Plant Unit 1										DOCKET NUMBER (2) 0 5 0 0 0 4 8 3 1 OF 5										PAGE (3) 1 OF 5				
TITLE (4) Overcurrent Protection of Containment Penetrations																								
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)								
										Grand Gulf Unit 1						0 5 0 0 0 4 1 6								
0 3 2	2	8 5	8 5	-	0 1 7	-	0 0	0 4 2	2 8 5	Wolf Creek Unit 1						0 5 0 0 0 4 8 2								
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)																						
1		20.402(b)					20.405(c)					50.73(a)(2)(iv)					73.71(b)							
POWER LEVEL (10)		20.405(a)(1)(i)					50.36(c)(1)					50.73(a)(2)(v)					73.71(c)							
110.0		20.405(a)(1)(ii)					50.36(c)(2)					50.73(a)(2)(vii)					X 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)					Voluntary Report							
		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 William R. Campbell - Superintendent, Engineering										AREA CODE														
										3 1 4		6 7 6 8 4 6 9												
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																								
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRCDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRCDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRCDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRCDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRCDS
SUPPLEMENTAL REPORT EXPECTED (14)															EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR					
YES (If yes, complete EXPECTED SUBMISSION DATE)																								
Y NO																								

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

On 3/22/85 the Bechtel Power Corp. notified the Callaway Plant of discrepancies between the plant design and FSAR commitments to Regulatory Guide (RG) 1.63 regarding overcurrent protection of containment penetrations. Four low voltage power circuits lacking adequate backup protection required by RG 1.63 were initially identified during a Bechtel review of the Callaway design prompted by similar discrepancies identified at the Grand Gulf Nuclear Station. Upon notification, UE de-energized the affected circuits and modified the design to comply with RG 1.63.

Further* evaluation by Bechtel identified no additional circuits with inadequate backup protection; however two concerns were identified involving compliance of the backup protection design with RG 1.63. Corrective action appropriate for each concern has been initiated to achieve compliance with RG 1.63.

Although the commitment to provide redundant overcurrent protection was not met for the circuits, adequate single protective features were available in the circuits. In view of the fact that adequate primary overcurrent protection was available, a significant safety hazard did not exist. This incident is not considered a reportable event pursuant to 10CFR; however this LER is being submitted voluntarily due to the potential interest of this subject to other utilities.

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S PDR

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/85

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
Callaway Plant Unit 1	05000483	85	017	00	02	OF 05

TEXT (If more space is required, use additional NRC Form 386A's) (17)

Background of Event

Regulatory Guide (RG) 1.63, Electric Penetration Assemblies (EPA) in Containment Structures for Light-Water-Cooled Nuclear Power Plants, describes a method acceptable to the Nuclear Regulatory Commission Staff for complying with General Design Criterion 50, Containment Design Basis, of Appendix A to 10CFR50 with regards to EPA's. In section 8.1.4.3 of the SNUPPS⁽¹⁾ Final Safety Analysis Report (FSAR), the commitment is made to provide all containment EPA conductors which are subject to fault currents that exceed their continuous rating with adequate primary and backup protection in accordance with RG 1.63.

In late 1984, as a result of discrepancies between commitments made to RG 1.63 by Mississippi Power and Light Company (MP&L) and the design for MP&L's Grand Gulf Nuclear Station-Unit 1, Bechtel and MP&L conducted a review to identify all instances of penetrations without proper protective devices (reference MP&L Licensee Event Report 84-055-00). The SNUPPS Project electrical group at Bechtel partially participated in the review effort and also reviewed SNUPPS circuits as potential concerns were identified. The results of the Grand Gulf review were issued in a Bechtel Problem Identification Report. During further review of the Problem Identification report by Bechtel, nine SNUPPS circuits (four applicable to Callaway, five applicable to Wolf Creek) without adequate backup protection per RG 1.63 were identified.

Description of Noncompliances and Corrective Actions

On 3/22/85 Bechtel informed the SNUPPS Staff of the nine circuits without adequate backup protection per RG 1.63. The SNUPPS Staff informed the SNUPPS Utilities and requested Bechtel to telecopy a list of circuits involved to the utilities. For Callaway the list contained the following low voltage circuit panels (all of which are nonsafety-related): 120 VAC Escape Lock and Stair Lighting QB95, 120 VDC Reactor Building Elevator Control KF07, 120 VAC Public Address System QF076, and 120 VAC In-Core Neutron Monitoring Detector Drive Motor and Heater SR057. Although the existing requirements of Technical Specification (T/S) 3.8.4.1 were not violated, conservative remedial actions were taken in accordance with T/S Action Statement 3.8.4.1.a, i.e., all four circuits were de-energized.

- (1) The Standardized Nuclear Unit Power Plant System (SNUPPS) Project consists of Callaway Plant-Unit 1 (Union Electric Company) and Wolf Creek Generating Station-Unit 1 (Kansas Gas and Electric Co., Kansas City Power and Light Co.). The Architect/Engineer for the project is the Bechtel Power Corporation, and the Nuclear Steam Supply System Supplier is the Westinghouse Electric Corporation.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104
EXPIRES 8/31/85

FACILITY NAME (1) Callaway Plant Unit 1	DOCKET NUMBER (2) 0 5 0 0 0 4 8 3 8 5 - 0 1 7 - 0 0 0 3 OF 0 5	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		

TEXT (If more space is required, use additional NRC Form 386A's) (17)

Bechtel was requested to provide a safety evaluation for the purpose of determining the safety significance resulting from the lack of adequate redundant protection. Bechtel also informed SNUPPS that a re-verification of the overcurrent protection devices listed in T/S Table 3.8-1, including a review of all circuit schedules, was being performed to ensure that no additional concerns existed as a result of errors or omissions in the previous calculations.

On 3/25/85 Bechtel issued appropriate design changes for the four circuits (Callaway Modification Package 85-0180). The changes involved installation of appropriate fuses in the circuits and were completed on 3/29/85.

On 3/26/85 a telecon was held with UE, KG&E, SNUPPS, and Bechtel participating. Bechtel had reached the conclusion that a significant safety concern did not exist due to the lack of adequate backup protection because adequate primary overcurrent protection was available in each circuit with the possible exception of the public address system. In Bechtel's judgement, adequate primary protection was available for the public address system circuit; however an additional evaluation was performed to confirm its adequacy.

On 4/3/85 UE was notified of additional circuits with potentially inadequate protection. The circuits identified were the four Accumulator Isolation Valves (EP-HV-8808 A, B, C, and D) and the Residual Heat Removal (RHR) Inlet Isolation Valves (EJ-HV-8701 A and B). As a conservative measure, Action Statement a. of T/S 3.8.4.1 was entered to verify the breakers to be open at least once per 7 days.

On 4/5/85 Bechtel issued a letter to SNUPPS conveying the results of the review conducted to ensure all applicable electrical circuits which pass through containment penetrations were provided with adequate overcurrent protection in accordance with RG 1.63. The letter also confirmed that the public address system circuits had been provided with adequate primary overcurrent protection.

The results of the Bechtel review identified two additional items of concern regarding compliance with RG 1.63 for backup protection. For Class 1E Motor-Operated Valves (MOV's) located inside containment, fuses are provided in the MOV power circuits for penetration primary protection. Backup protection is provided by magnetic circuit breakers which protect the EPA for both reduced energy and high energy faults. The Bechtel review showed that all Class 1E MOV power circuits are provided with primary protection that adequately protects the EPA for all kinds of faults. While the backup protection (magnetic circuit breakers) adequately protects the EPA's for high energy faults, two concerns involving sustained reduced energy faults were identified.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/85

FACILITY NAME (1)

DOCKET NUMBER (2)

LER NUMBER (6)

PAGE (3)

Callaway Plant Unit 1

0 5 0 0 0 4 8 3

YEAR SEQUENTIAL REVISION

NUMBER NUMBER NUMBER

8 5 - 0 1 7 - 0 0

0 4 OF 0 5

TEXT (If more space is required, use additional NRC Form 365A's) (17)

The first concern relates to the Accumulator Isolation Valves for which remedial corrective action was taken on 4/3/85. Callaway Modification Package (CMP) 85-0180 was revised to increase the EPA conductor size to satisfy the magnetic circuit breaker trip setpoint requirements.

The second concern relates to the RHR Inlet Isolation Valves. A Bechtel analysis indicated that the safety function of the valves and EPA's would not be compromised with the existing design. In order to provide additional protection for a limited range of reduced energy faults, CMP 85-0180 was revised to increase the capacity of the EPA conductors used in these circuits beyond the breaker setting.

Also included in the 4/5/85 Bechtel letter were the proposed changes to T/S Table 3.8-1 identified as potential discrepancies during the review process. The proposed changes include the modifications resulting from CMP 85-0180. These T/S changes are currently in the internal UE review and approval cycle with an expected submittal date of 5/17/85. As the modifications resulting from CMP 85-0180 result in an additional margin of safety and achieve compliance with a licensing commitment which results in additional redundancy in safety function, the modifications have been made prior to approval of any license amendments to revise the T/S.

Safety Significance of Noncompliances and Reportability Considerations

As previously stated, adequate primary overcurrent protection was provided in each of the following circuits: Escape Lock and Stair Lighting, Reactor Building Elevator Control, Public Address System, In-Core Neutron Monitoring Detector Drive Motor and Heater, and Accumulator Isolation Valves (RHR Inlet Isolation Valves were evaluated to have both adequate primary and backup protection). For this reason, even though the commitment to provide adequate redundant overcurrent protection devices was not met for the circuits, it was concluded that a substantial safety hazard did not exist.

Also supporting the conclusion that a substantial safety hazard did not exist is the fact that the four original circuits identified were low voltage circuits. Additionally, the circuits for the Accumulator Isolation Valves are only energized when changing valve position. With the circuits for these valves normally de-energized and the other circuits being low voltage, the safety hazard resulting from the lack of adequate backup protection for these circuits is not considered significant.

Since a condition which significantly compromised plant safety did not exist, the lack of adequate backup protection was determined not to be reportable under 10 CFR Part 21, 10CFR50.72(b)(ii)(A), or 10CFR50.73(a)(2)(ii)(A).

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EXPIRES: 8/31/85

FACILITY NAME (1) Callaway Plant Unit 1	DOCKET NUMBER (2) 0 5 0 0 0 4 8 3 8 5 - 0 1 7 - 0 0 0 5 OF 0 5	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			

TEXT (If more space is required, use additional NRC Form 368A's) (17)

The requirements of 10CFR50.72(b)(ii)(B) and 10CFR50.73(a)(2)(i)(B), reporting of a condition outside the design basis of the plant, were also considered because of the noncompliance with RG 1.63. It was concluded that the condition did not constitute operation outside of the design bases. The definition of design bases in 10CFR50.2(u) indicates that the design bases of a structure, system, or component are satisfied if the corresponding safety function is performed. As discussed previously, it was concluded that the safety function of containment integrity was adequately satisfied by the existence of the single primary overcurrent protection devices.

Finally, 10CFR50.73(a)(2)(i)(B) was considered for reporting of a condition prohibited by the plant's Technical Specifications. This condition was evaluated not to exist because the plant was in conformance with the existing Technical Specifications. The actions taken on 3/22/85 and 4/3/85 constituted conservative actions and were not performed due to the Action Statement requirements of T/S 3.8.4.1. Therefore the incident is not considered reportable under 10CFR50.73(a)(2)(i)(B).

All other reporting requirements are not considered applicable to the event; however this LER is being submitted voluntarily due to the potential interest of this subject to other utilities.

UNION ELECTRIC COMPANY
CALLAWAY PLANT

MAILING ADDRESS:
P.O. BOX 620
FULTON, MO. 65251

April 22, 1985

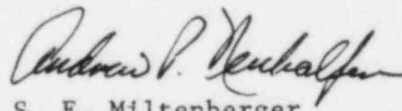
U. S. Nuclear Regulatory Commission
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ULNRC-1082

Gentlemen:

DOCKET NUMBER 50-483
CALLAWAY PLANT UNIT 1
FACILITY OPERATING LICENSE NPF-30
LICENSEE EVENT REPORT 85-017-00
OVERCURRENT PROTECTION OF CONTAINMENT PENETRATIONS

The enclosed voluntary Licensee Event Report concerning overcurrent protection of containment penetrations is being submitted due to the potential interest of this subject to the Commission and other utilities.



S. E. Miltenberger
for Manager, Callaway Plant

JED/WRR/JWK/drs
Enclosure

cc: Distribution attached

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cc distribution for ULNRC-1082

Mr. James G. Keppler
Regional Administrator
Office of Inspection & Enforcement
U.S. Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

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

Records Center
Institute of Nuclear Power Operations
Suite 1500
1100 Circle 75 Parkway
Atlanta, GA 30339

NRC Resident Inspector
D. F. Schnell
J. F. McLaughlin
J. E. Davis (Z40LER)
D. W. Capone/R. P. Wendling
F. D. Field
R. L. Powers
A. C. Passwater/D. E. Shafer/D. J. Walker
G. A. Hughes
W. R. Robinson (QA Record)
J. M. Price
R. A. McAleenan
L. K. Robertson (470) (NSRB)
Merlin Williams, Wolf Creek
SEM Chrono
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