

September 13, 1999

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Stop P1-137
Washington, DC 20555-0001

ULNRC-4107



Gentlemen:

**DOCKET NUMBER 50-483
CALLAWAY PLANT UNIT 1
UNION ELECTRIC CO.
FACILITY OPERATING LICENSE NPF-30
LICENSEE EVENT REPORT 99-005-00
OPERATING CONDITIONS EXCEEDING PREVIOUSLY ANALYZED
VALUES RESULTS IN INOPERABILITY OF BOTH OFFSITE SOURCES**

The enclosed licensee event report is submitted in accordance with 10CFR50.73(a)(2)(ii)(B) to report an event that resulted in the facility being in a condition outside the design basis of the plant.

A handwritten signature in black ink, appearing to read "R. D. Affolter".

R. D. Affolter
Manager, Callaway Plant

RDA/mdhu

Enclosure

99-005-002

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cc: Mr. Ellis W. Merschoff
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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Callaway Plant Unit 1	DOCKET NUMBER (2) 0 5 0 0 0 4 8 3	PAGE (3) 1 OF 0 4
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TITLE (4) **Operating Conditions Exceeding Previously Analyzed Values Results in Inoperability of Both Offsite Sources**

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)		
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MONTH	DAY	YEAR	FACILITY NAMES		DOCKET NUMBER(S)
0 8	1 2	9 9	9 9	- 0 0 5	- 0 0	0 9	1 3	9 9			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 0 0	<input type="checkbox"/> 20 2201(b)	<input type="checkbox"/> 20 2203(a)(2)(v)	<input type="checkbox"/> 50 73(a)(2)(i)	<input type="checkbox"/> 50 73(a)(2)(viii)						
	<input type="checkbox"/> 20 2203(a)(1)	<input type="checkbox"/> 20 2203(a)(3)(i)	<input checked="" type="checkbox"/> 50 73(a)(2)(ii)	<input type="checkbox"/> 50 73(a)(2)(x)						
	<input type="checkbox"/> 20 2203(a)(2)(i)	<input type="checkbox"/> 20 2203(a)(3)(ii)	<input type="checkbox"/> 50 73(a)(2)(iii)	<input type="checkbox"/> 73 71						
	<input type="checkbox"/> 20 2203(a)(2)(ii)	<input type="checkbox"/> 20 2203(a)(4)	<input type="checkbox"/> 50 73(a)(2)(iv)	<input type="checkbox"/> OTHER (Specify in Abstract below or in Text. NRC Form 366A)						
	<input type="checkbox"/> 20 2203(a)(2)(iii)	<input type="checkbox"/> 50 36(c)(1)	<input type="checkbox"/> 50 73(a)(2)(v)							
	<input type="checkbox"/> 20 2203(a)(2)(iv)	<input type="checkbox"/> 50 36(c)(2)	<input type="checkbox"/> 50 73(a)(2)(vii)							

NAME J. D. Schnack, Supervising Engineer, QA Regulatory Support	TELEPHONE NUMBER AREA CODE: 5 7 3 6 7 6 - 4 3 1 9
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)									
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)	<input checked="" type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
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ABSTRACT (Limit to 1400 spaces, i.e. approximately fifteen single-space typewritten lines)(16)

On August 12, 1999, with the plant in Mode 3 (Hot Standby), switchyard voltage was observed to decrease below the minimum operability limit established in station procedures. During investigations, it became apparent that large amounts of power were being transported across the United States grid. The magnitude of power being transported had not been previously observed concurrent with near peak service territory loads, and it was far in excess of typical levels. This resulted in system conditions above previously analyzed design basis values. It was determined that inadequate administrative controls existed to ensure the station's design analysis encompassed these atypical system conditions. Load flow analyses were reperformed with these atypical system conditions modeled. Restrictions on plant electrical lineups were subsequently implemented to support short term operability of the new minimum voltage established by this analysis. Additional corrective actions under evaluation include changing transformer tap settings, the installation of capacitor banks, and the installation of Static VAR Compensators for each of the plant's offsite sources.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1) Callaway Plant Unit 1	DOCKET NUMBER (2) 0 5 0 0 0 4 8 3			LER NUMBER (6)			PAGE (3)				
				YEAR		SEQUENTIAL NUMBER		REV NO			
				9 9	-	0 0 5	-	0 0	0 2	OF	0 4

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

DESCRIPTION OF EVENT:

On August 12, 1999, with the plant in Mode 3 (Hot Standby), the switchyard voltage supplied from the grid was observed to decrease below the minimum operability limit established in station procedures. The Technical Specification action statement for inoperability of both offsite sources was entered and the Control Area Operator within the Energy Supply Operations Department was contacted to initiate actions to increase switchyard voltage. The Control Area Operator's actions, combined with a decreasing system demand, restored switchyard voltages above the minimum operability limitation, and the Technical Specification action statement was exited. Both offsite power sources were inoperable for approximately 12 hours.

(Note: Grid refers to the North American Eastern Interconnection of which Ameren's Control Area is a part.)

Due to high ambient temperatures, service territory loading was near peak levels. Even at these peak levels, it was predicted that switchyard voltage would remain above the established operability limits based on previous load flow analyses. During investigations to establish the cause for this unanticipated switchyard voltage, engineering reviews determined that large amounts of power were being transported across the grid on the day of this occurrence. This power was being transported from northern utilities to the southern portion of the United States due to a shortfall in generation in that area and a significant weather diversity. The magnitude of the power being transported across the grid had not been previously observed and was far in excess of typical levels. The deregulated wholesale power market contributes to conditions where higher grid power flows are likely to occur. These large flows were observed at this time. Since load flow analyses had not analyzed this level of system loading, the minimum voltage previously established was not valid for verifying that the offsite source would have adequate capability to supply station loads during a design basis accident.

During plant operations, switchyard voltage indications were not adequate for determining operability of the offsite source in the event the plant should trip offline. Similar grid loading conditions were present on August 10, 1999, the day before the plant tripped. Low switchyard voltages were not observed at that time since Callaway generation was locally supporting grid voltage. Therefore, the capability of the offsite source could not be readily verified when the unit was in operation. Offsite source capability is normally confirmed by an analysis that considers the anticipated loading conditions on the grid. With grid loading above these previously analyzed values, the plant was placed in a condition which was outside of its design basis analysis for verifying the offsite source would have adequate capacity to supply station loads during a design basis accident.

BASIS FOR REPORTABILITY:

These events are reportable per 10CFR50.73(a)(2)(ii)(B) as an event or condition that resulted in the facility being in a condition outside the design basis of the plant.