Union Electric
Callaway Plant

PO Box 620
Fulton, MO 65251

November 13, 2001

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

ULNRC-04563

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Gentlemen:

DOCKET NUMBER 50-483
CALLAWAY PLANT UNIT 1
UNION ELECTRIC CO.
FACILITY OPERATING LICENSE NPF-30
LICENSEE EVENT REPORT 2001-005-00
Auxiliary Feedwater Actuation due to loss of DC Buss, PK01

The enclosed licensee event report is submitted in accordance with 10CFR50.73(a)(2)(iv)(A) to report an event that resulted in an automatic actuation of the Auxiliary Feedwater System, and a Steam Generator Blowdown Isolation. This is characterized by a loss of power to DC Bus PK01 in preparation for planned battery maintenance.

Warren A. Witt

Warren A. Witt
Manager, Callaway Plant

WAW/EWH

Enclosure

IE22

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NRC FORM 366 (1-2001) U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

APPROVED BY OMB NO. 3150-0104 EXPIRES 6-30-2001

Estimated burden per response to comply with this mandatory information collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to bjs1@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Callaway Plant Unit 1	05000	1 OF 4

TITLE (4)

Auxiliary Feedwater Actuation due to loss of DC Bus, PK01

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
										05000
09	17	2001	2001	– 005	– 00	11	9	2001	FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply) (11)							
POWER LEVEL (10)		20.2201(b)		20.2203(a)(3)(ii)		50.73(a)(2)(ii)(B)		50.73(a)(2)(ix)(A)	
		20.2201(d)		20.2203(a)(4)		50.73(a)(2)(iii)		50.73(a)(2)(x)	
		20.2203(a)(1)		50.36(c)(1)(i)(A)	X	50.73(a)(2)(iv)(A)		73.71(a)(4)	
		20.2203(a)(2)(i)		50.36(c)(1)(ii)(A)		50.73(a)(2)(v)(A)		73.71(a)(5)	
		20.2203(a)(2)(ii)		50.36(c)(2)		50.73(a)(2)(v)(B)		OTHER Specify in Abstract below or in NRC Form 366A	
		20.2203(a)(2)(iii)		50.46(a)(3)(ii)		50.73(a)(2)(v)(C)			
		20.2203(a)(2)(iv)		50.73(a)(2)(i)(A)		50.73(a)(2)(v)(D)			
		20.2203(a)(2)(v)		50.73(a)(2)(i)(B)		50.73(a)(2)(vii)			
		20.2203(a)(2)(vi)		50.73(a)(2)(i)(C)		50.73(a)(2)(viii)(A)			
		20.2203(a)(3)(i)		50.73(a)(2)(ii)(A)		50.73(a)(2)(viii)(B)			

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
M. A. Reidmeyer, Supervisor, Regional Regulatory Affairs	(573)676-4306

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

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

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 15 single-spaced typewritten lines) (16)

At 1207, 9/17/01, with the Plant in Mode 1 at 100 percent Reactor (Rx) Power, non-safety related DC electrical bus PK01 was inadvertently de-energized while cross-tying power sources in preparation for planned battery maintenance. One lube oil pressure switch for each Main Feed Pump was de-energized which generated an Auxiliary Feedwater Actuation Signal. This resulted in both Motor Driven Auxiliary Feedwater Pumps (MDAFP) starting and Steam Generator (S/G) Blowdown isolating. Reactor Coolant System (RCS) Letdown isolated due to power being lost to the operator's solenoids for valves BBLCV459 and BBLCV460. The MDAFPs injected cold water from the Condensate Storage Tank into all four S/G's during the initial phase of this event. This cold water caused RCS pressure to momentarily decrease to 2218 psig, and Rx power to momentarily rise to 101.18 percent. Rx power and RCS pressure were restored to normal parameters within allowed time limits with no adverse effects. Power was restored to PK01 and plant systems returned to normal operating conditions. The event was caused by inadequate procedural guidance concerning indications of successful electrical bus cross-connection. Corrective actions include procedure revisions to incorporate adequate guidance on electrical equipment manipulations.

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(1-2001)
LICENSEE EVENT REPORT (LER)

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NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)* **(17)**

I. DESCRIPTION OF THE REPORTABLE EVENT

A. REPORTABLE EVENT CLASSIFICATION

This Licensee Event Report (LER) is submitted because of an incident that resulted in an Auxiliary Feedwater Actuation Signal (AFAS) being generated, which started both Motor Driven Auxiliary Feedwater Pumps (MDAFP). This event was classified as an 8-hour Reportable Event per 10CFR50.72(b)(3)(iv)(A) and reported as NRC Event Number 38291. This event is also reportable as an LER per 10CFR50.73(a)(2)(iv)(A) "Any event or condition that resulted in manual or automatic actuation of the systems listed in paragraph (a)(2)(iv)(B)..." which includes PWR auxiliary feedwater systems.

B. PLANT OPERATING CONDITIONS PRIOR TO THE EVENT

On 9/17/01, when this event occurred, the Callaway Plant was in Mode 1 operating at 100 percent Reactor Power.

C. STATUS OF STRUCTURES, SYSTEMS, OR COMPONENTS THAT WERE INOPERABLE AT THE START OF THE EVENT AND THAT CONTRIBUTED TO THE EVENT

There were no Inoperable structures, systems, or components that contributed to this event.

D. NARRATIVE SUMMARY OF THE EVENT, INCLUDING DATES AND APPROXIMATE TIMES

On 9/17/01 Workman's Protection Assurance (WPA) tagging was being placed to support a scheduled inspection of non-safety related battery PK01. A Non Licensed Operator (NLO) was cross-tying non-safety related DC busses PK01 and PK02 in accordance with plant procedures to complete the installation of the WPA. During this evolution, at 1207, power to PK01 was inadvertently lost when a fusible disconnect operated by the NLO did not close completely.

With the loss of power to PK01, an Auxiliary Feedwater Actuation Signal (AFAS) was generated, Steam Generator (S/G) Blowdown isolated, Reactor (Rx) Coolant Letdown isolated, and multiple Main Control Board (MCB) alarms were generated.

The AFAS was generated due to two Main Feedwater Pump (MFP) Lube Oil pressure switches losing power. This was sensed as a loss of lube oil on each MFP, which is indicative of a loss of the Main Feed Pumps. When the AFAS was generated, it caused both MDAFPs to start and supply water from the Condensate Storage Tank to the Steam Generators. The AFAS also generated the S/G Blowdown isolation signal.

When PK01 was de-energized, power was lost to distribution bus PK51 which supplies DC control power to the two Rx Coolant Letdown isolation valves, which caused the Letdown Isolation Valves to fail closed.

During this event, Rx power increased as a result of the injection of Auxiliary Feedwater at a temperature colder than that being supplied by Main Feedwater, with the entire transient lasting approximately 45 minutes. Rx power peaked at 3607.2 Megawatts Thermal (MWT), or 101.18 percent Rx power, and was then stabilized at 3563.7 MWT (99.96 percent Rx power). Rx power was at 101.18 percent for less than 1 minute, between 100.5 and 101 percent Rx power for approximately 3 minutes, and between 100 and 100.5 percent Rx power for approximately 40 minutes. The 8-hour MWT Rx power average was within limits as defined in NRC Inspection Manual, Inspection Procedure 61706, which states: "It is permissible to briefly exceed the 'full, steady-state licensed power level' (3565 MWT for Callaway) by as much as 2 percent for as long as 15 minutes. In no case should 102 percent power be exceeded, but lesser power 'excursions' for longer periods should be allowed, with the above as guidance. For example, 1 percent excess for 30 minutes and ½ percent for 1 hour should be

allowed. There are no limits on the number of times these 'excursions' may occur, or the time interval that must separate such 'excursions'. The above requirement regarding the 8-hour average power will prevent abuse of this allowance."

E. METHOD OF DISCOVERY OF EACH COMPONENT, SYSTEM FAILURE, OR PROCEDURAL ERROR

Electrical power was inadvertently interrupted to PK01 while aligning electrical power sources to PK01 in preparation for battery inspections. Upon loss of electrical power to PK01, numerous alarms were generated and several pieces of equipment either started or repositioned. These indications, along with the NLO contacting the Control Room, were the initial method of discovery of the event.

II. EVENT DRIVEN INFORMATION

A. SAFETY SYSTEMS THAT RESPONDED

An Auxiliary Feedwater Actuation Signal (AFAS) was generated and both Motor Driven Auxiliary Feedwater Pumps started.

Steam Generator Blowdown isolated as a result of the AFAS.

B. DURATION OF SAFETY SYSTEM INOPERABILITY

No Safety Systems were made Inoperable as a result of this event.

C. SAFETY CONSEQUENCES AND IMPLICATIONS OF THE EVENT

An evaluation was performed to estimate the risk incurred due to the event described in this LER. The estimated incremental conditional core damage probability (ICCDP) incurred, due to this event, was determined to be significantly below 1E-6. Therefore, this event was not risk significant.

III. CAUSE OF THE EVENT

The root cause of the event was identified to be inadequate procedural guidance. The procedure did not adequately verify that the bus had been properly transferred.

IV. CORRECTIVE ACTIONS

The procedure for this evolution has been revised to provide additional guidance for verifying bus transfer. In addition, other procedures will be reviewed for similar improvements.

V. PREVIOUS SIMILAR EVENTS

A review of previous LERs from 1998 until present and Callaway Action Request (CAR) documents starting with 199801000 until present revealed no similar events.

NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)* **(17)**

VI. ADDITIONAL INFORMATION

The system and component codes listed below are from the IEEE Standard 805-1984 and IEEE Standard 803A-1984 respectively.

System: EI

Component: DISC