NRC FORM 366
(7-77)

U. S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT

CONTROL BLOCK: (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

Line	Field	Entry
01	Licensee Code (2)	NEFCS1
01	License Number (3)	00-00000-00
01	License Type (4)	41111
01	CAT (5)	
01 CON'T	Report Source (6)	L
01 CON'T	Docket Number (7)	05000285
01 CON'T	Event Date (8)	091080
01 CON'T	Report Date (9)	091180

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

02 Transformer (T4) of DG-1 failed. This transformer feeds the control circuitry for the 15 kw diesel oil immersion heater as well as supplying power to alarm relays for
03 the following items: low lube oil pressure, low lube oil level, high and/or low
04 lube oil temperature, water temperature, water level and water pressure. During
05 the time of the transformer failure, DG-2 as well as the 161 kv and 345 kv systems
06 were available and operable. In addition, DG-1 was considered inoperable only during
07 the time that the transformer and associated equipment were being changed out, i.e.
08 only while DG-1 was in "Local Maintenance".

Line	System Code (11)	Cause Code (12)	Cause Subcode (13)	Component Code (14)	Comp. Subcode (15)	Valve Subcode (16)
09	EE	E	A	TRANSF	Z	Z

(17) LER/RO Report Number	Event Year		Sequential Report No.		Occurrence Code	Report Type		Revision No.
	80	—	021	/	03	L	—	0

Action Taken (18)	Future Action (19)	Effect on Plant (20)	Shutdown Method (21)	Hours (22)	Attachment Submitted (23)	NPRD-4 Form Sub. (24)	Prime Comp. Supplier (25)	Component Manufacturer (26)
A	Z	Z	Z	0000	N	N	A	G080

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

10 A moveable armature located on the immersion heater contactor was loose on the plunger
11 shaft & therefore, causing a slight binding problem on the contactor. It is
12 postulated that this binding of the contactor caused the contactor control trans-
13 former to draw excessive current and eventually fail. The moveable armature was re-
14 paired and the diesel satisfactorily tested and returned to service.

Line	Facility Status (28)	% Power (29)	Other Status (30)	Method of Discovery (31)	Discovery Description (32)
15	E	100	NA	A	OPERATOR OBSERVATION

Line	Activity Released (33)	Content of Release (34)	Amount of Activity (35)	Location of Release (36)
16	Z	Z	NA	NA

PERSONNEL EXPOSURES

Line	Number (37)	Type (38)	Description (39)
17	000	Z	NA

PERSONNEL INJURIES

Line	Number (40)	Description (41)
18	000	NA

LOSS OF OR DAMAGE TO FACILITY (43)

Line	Type (42)	Description
19	Z	NA

PUBLICITY

Line	Issued (44)	Description (45)
20	N	NA

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NRC USE ONLY

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GPO 917-926

LER 80-021
Omaha Public Power District
Fort Calhoun Station Unit No. 1
Docket No. 05000285

ATTACHMENT NO. 1

Safety Analysis

The Fort Calhoun Station Unit No. 1 Engineered Safety Features System is so designed that no single failure can prevent the safe shutdown of the plant if necessary. During the time diesel generator DG-1 was inoperable, diesel generator DG-2 was operable as were the 161 KV and 345 KV supplies thus providing more than adequate capability for safe shutdown of the plant should the unlikely event of an accident occur.

It should be pointed out that DG-1 was considered inoperable only during the time that the transformer was being changed out since this transformer only feeds the oil immersion heater for DG-1 and associated annunciation. Should the need have arisen, DG-1 would still have automatically started per engineered safeguards and performed its design function as described in the Final Safety Analysis Report.

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ATTACHMENT NO. 2

Corrective Action

M.O. #7057 was written to investigate possible causes for the failure of the control transformer. As a result, it was discovered that a moveable armature (moveable in the vertical direction) was loose on the immersion heater contactor's plunger shaft, thus allowing the armature to rotate from 0° to 360° horizontally with respect to the plunger shaft. Normally, when the contactor is picked up or energized the plunger shaft is drawn vertically via magnetic forces until the armature mates with a designated seating surface on the contactor and correspondingly the main contacts are completely closed. However, if the armature is allowed to rotate horizontally such that when the armature and plunger shaft are magnetically drawn upwards, the armature does not mate with its designated contactor seating surface; the result is armature binding and partial closure of the contact main contacts. Further the control transformer will draw excessive amps as it tries to fully close the contactor contacts.

To correct the problem, the armature was secured to the plunger shaft in such a position that proper seating between the armature and armature seating surface of the contact would be achieved.

As a further consequence of this problem, the remaining diesel control panel (DG-2) was inspected for a similar problem. However, the armature shaft was found to be firmly riveted to the plunger shaft.

The failed control transformer was replaced with an electrically equivalent transformer (See EEAR FC-80-101). Any wires or relays which may have been damaged by the transformer overheating were also replaced with identical equipment. The diesel was satisfactorily tested and returned to service.

No further action is planned or scheduled in conjunction with this event.

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ATTACHMENT NO. 3

Failure Data

This is the second failure of this type at the Fort Calhoun Station. The first being documented per LER 80-014.