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transformer will be sent to the General Electric Company the cause of its failure. All Engineered Safety Features actuated as designed. At this event endanger the public health or safety.	h Flu 2, ire a ipply pof 12 ivert to to to to actor lacem letin lefec y to	ix (PRH Startu and pre ying P 20 VAC ter the tri tion) t alread channel r trip. ment n 84-11 ctive determ	SHF) p, at ssure. ower power P, o y in 41 as a dine				

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION					U.S. NUCLEAR REGULATORY COMMISSION APPROVED OMB NO. 3150-0104 EXPIRES: 8/31/88						
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TEXT (If more space is required, use additional NRC Form 306A's) (17)

On 4/16/86 at 1424 CST, a reactor trip and a Feedwater Isolation (FWIS) occurred as a result of a Power Range High Setpoint (PRHSHF) High Flux signal. At the time of the trip the reactor was in Mode 2, Startup, at 0% of rated thermal power and normal operating temperature and pressure.

Following the trip, the operators stabilized the plant and recovered from the trip per plant operating procedures at approximately 1520 CST on 4/16/86.

The PRHSHF trip occurred due to loss of 120 VAC power supplying Power Range Nuclear Instrumentation (PRNI) channel 41. Loss of 120 VAC power to PRNI channel 41 was caused by failure of the NN-11 inverter transformer (1) that supplies bus NN-01, the power source for PRNI channel 41. Previous to the trip, PRNI channel 44 had been placed out of service (in tripped condition) to facilitate core physics testing following a refueling. Since PRNI channel 44 was already in the tripped condition, failure of the power supply to PRNI channel 41 satisfied the 2 of 4 logic necessary to initiate the reactor trip.

Following identification of inverter failure, the transformer assembly was replaced. An investigation to determine the root cause of the inverter transformer failure proceeded as follows:

- 1. A search of all NN system Work Requests was conducted to determine if the problem had occurred previously. None were found.
- 2. An evaluation of inverter loading during Refuel 1 was conducted to determine if the inverters were operated unloaded for any amount of time. The vendor manual indicated this could lead to transformer magnetic overheating and failure. Inverter loads throughout Refuel 1 were nearly the same as during normal plant operation.
- A search of NPRDS data was conducted to determine if other plants had experienced similar failures. The root causes were indeterminate for similar failures.
- 4. Westinghouse Technical Bulletin 84-11 was re-evaluated for applicability. This bulletin recommended conducting of a hi-pot test to determine insulation integrity on inverter transformers in service less than six months. Initial evaluation of 84-11 determined that Callaway inverter transformers did not require this test since the devices had been in service greater than six months with no failures in this period. Re-evaluation of this Technical Bulletin, following this trip, led to testing of the replacement NN-11 transformer as well as the other redundant transformers. These transformers tested satisfactorily.

9-83)	LICENSEE EVENT REPO	ORT (LER) TEXT CONTI	NUAT	TIO	N		A	CLEAR REP PPROVED (PIRES: 8/3	MB NO		
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Callaway Plant

May 15, 1986

U. S. Nuclear Regulatory Commission Document Control Desk Washington, DC 20555

ULNRC-1313

Gentlemen:

DOCKET NUMBER 50-483 CALLAWAY PLANT UNIT 1 FACILITY OPERATING LICENSE NPF-30 LICENSEE EVENT REPORT 86-010-00 REACTOR TRIP ON POWER RANGE HIGH SETPOINT HIGH FLUX SIGNAL

The enclosed Licensee Event Report is submitted pursuant to 10 CFR 50.73(a)(2)(iv) concerning a reactor trip on a Power Range High Setpoint High Flux signal.

A2 Randolph

G. L. Randolph Manager, Callaway Plant

GLR/RDA/TPS/DBP/drs

Enclosure

cc: Distribution attached

cc distribution for ULNRC-1313

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