GPU NUCLEAR

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November 26, 1996
6730-96-2358

Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Dear Sir:

Subject: Oyster Creek Nuclear Generating Station
Docket No. 50-219
LER 96-009: Actuation of Engineered Safety Features Caused by a Loss of Power Due to a Cable Fault

Enclosed is Licensee Event Report 96-009. This event did not impact the health and safety of the public.

If any additional information or assistance is required, please contact Mr. John Rogers, Regulatory Affairs Engineer, at 609-971-4893.

Very truly yours,

Michael B. Roche
Vice President and Director
Oyster Creek

MBR/JJR/gl

Attachment

cc: Administrator, Region I
NRC Project Manager
NRC Sr. Resident Inspector

NRC FORM 366 (4-95) U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

APPROVED BY OMB NO. 3150-0104
EXPIRES 04/30/98

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
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TITLE (4)

Actuation of Engineered Safety Features Caused by a Loss of Power due to a Cable Fault

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
10	27	96	96	-- 09 --	00					05000
									FACILITY NAME	DOCKET NUMBER
										05000

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)			
POWER LEVEL (10)	0	20.2201(b)	20.2203(a)(2)(v)	50.73(a)(2)(i)	50.73(a)(2)(viii)
		20.2203(a)(1)	20.2203(a)(3)(i)	50.73(a)(2)(ii)	50.73(a)(2)(x)
		20.2203(a)(2)(i)	20.2203(a)(3)(ii)	50.73(a)(2)(iii)	73.71
		20.2203(a)(2)(ii)	20.2203(a)(4)	X 50.73(a)(2)(iv)	OTHER
		20.2203(a)(2)(iii)	50.36(c)(1)	50.73(a)(2)(v)	Specify in Abstract below or in NRC Form 366A
		20.2203(a)(2)(iv)	50.36(c)(2)	50.73(a)(2)(vii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Ronald Harkleroad	609.971.4809

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)			EXPECTED SUBMISSION	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)

On October 27, 1996 at 2358 hours, power to the 4160 VAC 1D bus was lost due to a ground fault on the cable between Diesel Generator 2 and the 1D bus. The plant was in a cold shutdown condition for a maintenance outage prior to this event.

The loss of the bus led to: 1) a trip of Reactor Protection System Channel 2; and 2) a full reactor scram signal and main steam line isolation, which isolated the reactor vent path being used, as designed.

Immediate actions were taken to restore the actuated systems, and reestablish the reactor vent path. Additional corrective actions were taken to replace the faulted cable and test the other diesel cables. Long term corrective actions include sending the failed cable to an outside testing laboratory for fault analysis.

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

DATE OF OCCURRENCE

This event occurred on October 27, 1996, at 2358 hours.

IDENTIFICATION OF OCCURRENCE

An electrical fault on an underground cable (EIIS Component CBL5) between the output breaker of Diesel Generator 2 (EIIS Code DG) and the 4160 VAC bus 1D (EIIS Component BU) led to the actuation of Engineered Safeguards functions. This event is reportable under 10 CFR 50.73(a)(2)(iv).

CONDITIONS PRIOR TO THE OCCURRENCE

The reactor mode switch was in the refuel position, coolant temperature was less than 212 degrees Fahrenheit, and the reactor was vented to the main condensers (EIIS Component COND) through the main steam isolation valves (EIIS Component ISV).

DESCRIPTION OF OCCURRENCE

On October 27, 1996, at 2358 hours, power to the 4160 VAC 1D bus was lost when breaker 1D tripped and locked out due to a ground fault. The lockout of the faulted bus prevented Diesel Generator 2 from starting and reenergizing the 1D bus. The ground fault was determined to be on the power feeder cables between the output breaker of Diesel Generator 2 and 4160 VAC bus 1D.

This resulted in a loss of Reactor Protection System 2 (RPS2) and a reactor full scram. A reactor scram was generated with only one RPS channel because reactor pressure was less than 600 psig. A main steam line isolation occurred as a result of this event, which lost the reactor vent path.

On October 28 at 0013 hours, which was approximately fifteen minutes later, power was restored to RPS2 from an alternate supply, the reactor scram and isolation signals were reset, and the reactor vessel ventilation path was reestablished via the Isolation Condenser (EIIS Component BL) vents.

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

APPARENT CAUSE OF OCCURRENCE

Power from Diesel Generator 2 to the 4160 VAC 1D bus is supplied via two parallel sets of three-phase feeder cables in underground conduits. There is approximately 400 feet of cable between Diesel Generator 2 and the 1D switchgear bus. A circuit breaker is installed at the Diesel Generator end of the cable, and the bus end of the cable is hardwired. Maintenance testing determined that one of the Phase 'C' feeder cables had faulted to ground between the output breaker and the 1D bus.

ANALYSIS OF OCCURRENCE AND SAFETY ASSESSMENT

The loss of the 1D bus has been previously analyzed. Power was available to essential loads, as power to the other safety bus (1C) remained intact throughout this incident.

The Engineered Safety Features performed as designed. The reactor scram signal and main steam line isolation occurred because power was lost to RPS2. When system pressure is less than 600 psig, a loss of electrical power to either RPS Channel will result in a full scram signal and main steam line isolation.

The closure of the MSIVs removed the vent path from the reactor, removing it from the defined cold shutdown condition, and placed the reactor in a condition. Approximately fifteen minutes later, a vent path was established through the Isolation Condenser vents.

This event occurred while the plant was shutdown. Power to two of the three Shutdown Cooling pumps was lost. However, the remaining shutdown cooling pump was sufficient to remove decay heat.

As power was available to essential loads, and the Engineered Safety Features performed as expected, the safety significance of this event is considered minimal.

CORRECTIVE ACTIONS

IMMEDIATE CORRECTIVE ACTIONS

1. Power was restored to RPS2 from an alternate supply.

2. The reactor ventilation path was restored through the Isolation Condenser vents.

PRIOR TO RESTART

1. The faulted cable set associated with Diesel Generator 2 and Switchgear 1D was replaced. The post installation testing indicated satisfactory performance for the new cable.

2. The other three phase set of cables on Diesel Generator 2 was tested satisfactorily.

3. Both parallel cable sets associated with Diesel Generator 1 and switchgear bus 1C were tested. The test results were satisfactory.

LONG TERM

1. The faulted cable will be sent to an outside testing laboratory for analysis.

2. Engineering will review the present cable testing program and evaluate if and where enhancements can be made to the program.

SIMILAR OCCURRENCES

LER 88-022, Electrical fault on 1D bus and subsequent trip of 1D breaker.

LER 77-004, Electrical fault on 1C bus and subsequent trip of 1C breaker.

LER 75-009, Electrical fault on 1C bus and subsequent trip of 1C breaker.