

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)
Oyster Creek, Unit 1

DOCKET NUMBER (2)
05000219

PAGE (3)
1 OF 03

TITLE (4)
LIGHTNING ARRESTOR INSULATOR FAILURE INDUCED VOLTAGE TRANSIENT CAUSED CONTAINMENT ISOLATION AND SBGTS INITIATION DUE TO AUTOMATIC BUS TRANSFER TIME EXCEEDING RPS RELAY DROPTIME

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)		
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES		
04	22	87	87	030	00	09	11	87	DOCKET NUMBER(S) 050000		
									DOCKET NUMBER(S) 050000		

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §. (Check one or more of the following) (11)

OPERATING MODE (9)	20.402(b)	20.408(a)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)	20.406(a)(1)(i)	50.38(a)(1)	50.73(a)(2)(v)	73.71(c)
	20.406(a)(1)(ii)	50.38(a)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 386A)
	20.406(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
	20.406(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
	20.406(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME: John P. McGrane, Operations Engineer

TELEPHONE NUMBER: 610 991 7111 - 2412 15

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15)

MONTH	DAY	YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On April 22, 1986 at approximately 0700 hours, primary and secondary containments isolated and the Standby Gas Treatment System (SBGTS) initiated as a result of a voltage transient caused by a lightning arrester insulator failure. The voltage transient caused Vital AC Power Panel 1 (VACP-1) to transfer to its alternate power supply. The power supply transfer caused several Reactor Protection System (RPS) relays to deenergize, causing the containment isolations and SBGTS initiation. At the time of this event, the reactor mode switch was locked in the SHUTDOWN position, the vessel head had been removed and the vessel and reactor cavity had been flooded in preparation for refueling. The shortest transfer time achievable with the automatic transfer switch exceeds the dropout time for the RPS relays. The isolation signal was reset and SBGTS was secured following the event. The safety significance of this event is minimal as only a challenge to containment isolation and SBGTS initiation logic circuits occurred. To prevent recurrence of this event, engineering has proposed a continuous power supply be connected to the circuit which contains the relays that cause containment isolations and SBGTS initiations when certain power interruptions occur. This proposal is currently being considered by corporate management for approval.

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		8 7	— 0 3 0	— 0 0	0 2	OF 0 3

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

DATE OF OCCURRENCE

This event occurred April 22, 1986 at approximately 0700 hours.

IDENTIFICATION OF OCCURRENCE

Primary and secondary containments isolated and the Standby Gas Treatment System (SBGTS) (EIIS code BH) initiated as a result of a voltage transient caused by a lightning arrester insulator failure. The voltage transient caused Vital AC Power Panel 1 (VACP-1) to transfer to its alternate power supply. The power supply transfer caused several Reactor Protection System (RPS) (EIIS system code JC) relays to deenergize, causing the containment isolations and SBGTS initiation.

This event is considered reportable under 10CFR50.73(a)(2)(iv).

CONDITIONS PRIOR TO OCCURRENCE

The reactor mode switch was locked in the SHUTDOWN position, the vessel head had been removed and the vessel and reactor cavity had been flooded in preparation for refueling.

DESCRIPTION OF OCCURRENCE

On April 22, 1987 at approximately 0700 hours, the primary and secondary containments isolated and the SBGTS initiated as a result of a voltage transient caused by a lightning arrester insulator failure. The voltage transient caused Vital AC Power Panel 1 (VACP-1) to transfer to its alternate power supply. The power supply transfer caused several Reactor Protection System (RPS) relays to deenergize, causing the containment isolations and SBGTS initiation. The lightning arrester had exploded and caught on fire. The plant fire brigade extinguished the insulator fire by 0710 hours. Immediately following this event the containment isolation signal was reset, the SBGTS was secured, and instrument panel VACP-1 automatically transferred to its normal power supply.

APPARENT CAUSE OF OCCURRENCE

The voltage transient which resulted from a lightning arrester insulator failure caused an automatic bus transfer to alternate power for instrument panel VACP-1. The automatic bus transfer for VACP-1 is a break-before-make design and its transfer time to alternate power is not sufficiently fast to prevent the containment isolation and SBGTS initiation relays from deenergizing.

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		87	030	00	03	OF	03

TEXT (If more space is required, use additional NRC Form 386A's) (17)

ANALYSIS OF OCCURRENCE AND SAFETY ASSESSMENT

Primary and secondary containments are designed to isolate during a loss of coolant accident to limit radioactive releases to the environment. The SBGTS filters and exhausts the reactor building atmosphere to the stack during secondary containment isolations, providing a minimum release of radioactive material to the environs. All of these functions initiated as designed upon deenergization of the initiation relays. Technical Specifications for offsite power availability requirements were not violated at any time during the event.

During the voltage transient and automatic bus transfer, all automatic actuations which would be expected did occur. If this transient had occurred while the plant was operating at power, the containment isolation and SBGTS initiation would not have occurred because the plant's main generator supplies plant loads through the auxiliary transformer. The safety significance of this event is minimal as only a challenge to the containment isolation and SBGTS initiation circuits occurred.

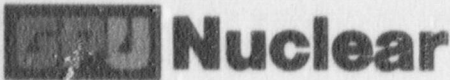
CORRECTIVE ACTION

Immediate corrective action was taken to restore electrical configuration to normal, containment isolation signals were reset and SBGTS was secured. A previous investigation revealed that the shortest bus transfer time achievable with the automatic bus transfer switch currently installed is approximately two times longer than the drop out time for the sealed-in relays which initiate the containment isolations and SBGTS. To prevent a recurrence of this event, engineering has proposed an existing rotary-inverter fed continuous power supply be connected to the VACP-1 circuit which contains the relays that cause the containment isolations and SBGTS initiations. This proposal is currently being considered by corporate management for approval.

SIMILAR EVENTS

- LER 86-012
- LER 86-017, Rev. 1
- LER 87-027

(0377A)



GPU Nuclear Corporation
Post Office Box 388
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Writer's Direct Dial Number:

September 11, 1987

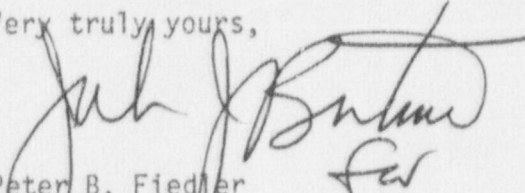
U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Dear Sir:

Subject: Oyster Creek Nuclear Generating Station
Docket No. 50-219
Licensee Event Report

This letter forwards one (1) copy of Licensee Event Report (LER) No. 87-030. The event occurred on April 22, 1986, and a four (4) hour NRC notification was made. This report, however, was not submitted within 30 days of the event due to an administrative oversight. A deviation report, which triggers the LER report writing sequence, was not issued at the time of the event as required by existing procedures. This is an isolated instance. Three similar events which occurred during the same time frame (cycle 11 refueling outage) were reported on time as required.

Very truly yours,



Peter B. Fiedler
Vice President and Director
Oyster Creek

PBF:MH:dmd (#0377A)
Encs.

cc: Mr. William T. Russell, Administrator
Region I
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

NRC Resident Inspectors
Oyster Creek Nuclear Generating Station

Mr. Alex Dromerick
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7920 Norfolk Avenue, Phillips Bldg.
Bethesda, MD 20014

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