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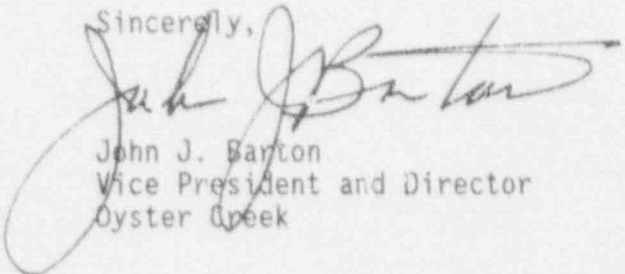
U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

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 92-001.

Sincerely,



John J. Barton
Vice President and Director
Oyster Creek

JJB\BDEM:jc
Enclosure

cc: Administrator, Region 1
Senior NRL Resident Inspector
Oyster Creek NRC Project Manager

(LER-COVLTRS)

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Oyster Creek, Unit 1 DOCKET NUMBER (2) 0 1 5 1 0 1 0 1 0 2 1 1 9 1 PAGE (3) 1 OF 0 1 4

TITLE (4) Loss of Undervoltage Protection on Safety Related Bus Caused by Short Circuit Due to Design of Lamp Socket and Circuitry

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)			
MONTH	DAY	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME		DOCKET NUMBER(S)		
0 3	1 2	9 2	0 1 0 1 1	0 0	0 4	1 0	9 2			0 1 5 1 0 1 0 1 0 1		
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OPERATING MODE (9) 1 0 0 THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 50.71 (Check one or more of the following) (11)

20.400(a)	20.400(b)	20.400(c)	20.400(d)	20.400(e)	20.400(f)	20.400(g)	20.400(h)	20.400(i)	20.400(j)	20.400(k)	20.400(l)	20.400(m)	20.400(n)	20.400(o)	20.400(p)	20.400(q)	20.400(r)	20.400(s)	20.400(t)	20.400(u)	20.400(v)	20.400(w)	20.400(x)	20.400(y)	20.400(z)	

POWER LEVEL (10) 1 0 0

OTHER (Specify in Abstract below and in Text, NRC Form 365A)

LICENSEE CONTACT FOR THIS LER (12) Paul Cervenka TELEPHONE NUMBER 6 1 0 9 1 9 1 7 1 1 - 1 4 8 1 9 1 4

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 NO

EXPECTED SUBMISSION DATE (15) MONTH DAY YEAR

ABSTRACT (Limit to 1400 words. If approximately fifteen single-space typewritten lines) (16)

On March 12, 1992 at approximately 1033 hours, the Control Room received a report that sparks were coming from the status lights for the undervoltage protection circuit located on the front of the 4160 Volt emergency switchgear. At 1200 hours, it was determined that all undervoltage protection for one of the safety related buses was inoperable. As the plant was shutting down to satisfy technical specification requirements, electrical personnel prepared and implemented a work package that replaced the damaged wiring, relay, lamp socket, and fuse. At 2223 hours, the undervoltage protection circuitry was declared operable and the reactor shutdown was terminated. The cause of this event has been attributed to the design of the lamp sockets and circuitry associated with the undervoltage protection status lamps. The force required to install a light bulb causes a reduction in the internal clearance between the base ground of the socket and the positive terminal. The circuit involved is 125 volts DC so when the light bulb burned out on March 12, 1992, an arc was formed across the reduced internal clearance which resulted in a short circuit. The safety significance of this event is minimal since the redundant safety related bus was fully operable. Corrective action will consist of an inspection of the other 4160 Volt switchgear and evaluation of the need for design changes.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1) Oyster Creek, Unit 1	DOCS# NUMBER (2) 0 5 0 0 0 2 1 9 9 1 2	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		9 1 2	0 1 0 1	0 1 0 0 2	OF	0 4

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

DATE OF OCCURRENCE

The event occurred at approximately 1033 hours on March 12, 1992.

IDENTIFICATION OF OCCURRENCE

During normal plant operation, the undervoltage protection circuit for one of the 4160 Volt emergency buses became inoperable. This condition is prohibited by Technical Specification and is reportable in accordance with 10 CFR 50.73 (a) (2) (i) (B).

CONDITIONS PRIOR TO OCCURRENCE

The plant was operating at approximately 100% power. A continuous firewatch was stationed in the 4160 Volt switchgear room due to an unrelated activity.

DESCRIPTION OF OCCURRENCE

On March 12, 1992, at approximately 1033 hours, the Control Room received a report from a continuous firewatch stationed in the 4160 Volt switchgear room. The report indicated that sparks were coming from the status lights (CFI-1L) for the undervoltage protection circuit (CFI-27) located on the front of the 1C 4160 Volt switchgear (IEEE-EK). Electrical personnel were immediately dispatched to assess the situation. As a precaution, operators began switching major loads from the 1C bus to the 1D bus and restricted access to the 4160 Volt switchgear room. At 1200 hours, it was determined that all undervoltage protection for the 1C bus was inoperable. At 1221 hours, a controlled reactor shutdown was commenced as required by plant Technical Specifications. As a precaution, access was restricted to the yard substation and the diesel generator building. The system dispatcher was contacted and instructed to notify the Control Room in the event of grid instability or undervoltage conditions. Electrical personnel determined that a status lamp for the undervoltage protection circuitry shorted causing damage to wiring and a relay. The short also caused a common fuse on the negative side of the undervoltage protection circuit to blow. This resulted in a loss of all undervoltage protection for the 1C 4160 Volt bus. As the plant shutdown continued, electrical personnel prepared and implemented a maintenance package that replaced the damaged wiring, relay, lamp socket, and fuse. At 2200 hours, post maintenance testing was performed and at 2223 hours, the undervoltage protection circuitry was declared operable and the reactor shutdown terminated.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1) Oyster Creek, Unit 1	DOCKET NUMBER (2) 0 1 5 1 0 0 0 2 1 9	LER NUMBER (6)			PAGE (3)	
		YEAR 9 2	SEQUENTIAL NUMBER 0 0 1	REVISION NUMBER 0 0	0 3	OF 0 4

TEXT (If more space is required, use additional NRC Form 3054 (9-83))

APPARENT CAUSE OF OCCURRENCE

The cause of this event has been attributed to the design of the lamps sockets and circuitry associated with the undervoltage protection status lamps. The design of the light socket consists of a coiled wire spring into which the bulb is screwed. When a light bulb is installed, the force required to install it causes the coiled wire spring base to bend which reduces the internal clearance between the base ground of the socket and the positive terminal. The circuit involved is 125 Volts DC, so when the light bulb burned out on March 12, 1992, an arc was created across the reduced internal clearance thus causing a short circuit. The circuitry associated with the undervoltage protection is designed with only one fuse on the negative and positive power feed. The individual lamps are not provided with sub-fuses, therefore, when the short circuit occurred it caused the entire undervoltage protection circuit to become inoperable.

ANALYSIS OF OCCURRENCE AND SAFETY SIGNIFICANCE

Oyster Creek has two essential or emergency 4160 Volt buses designated as 1C and 1D. These buses supply power to both non-essential loads as well as loads important to plant safety and vital to safe shutdown under accident conditions. These bus loads are redundant in that in the event of a failure of either bus 1C or 1D, the remaining loads will satisfy the requirements for a safe shutdown under accident conditions. Both of the buses 1C and 1D are provided with an emergency diesel generator to supply power in the event that the normal power supply becomes unavailable.

The undervoltage protection that was lost for the 1C bus has two levels of protection. The first level trips and transfers safety related loads to the emergency diesel generator on total loss of voltage, but does not trip due to transient conditions such as starting large motors. The second level, on time delay, trips and transfers safety related loads to the emergency diesel generator in the event of degraded grid voltages.

On March 12, 1992, operators were aware of the condition and ready to manually trip the normal feeder breaker to the 1C bus and manually start the emergency diesel generator if it became necessary.

Based upon the above and the fact that the 1D bus and all associated safety related loads were fully operable, the safety significance of this event is considered minimal.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1) Oyster Creek, Unit 1	DOCKET NUMBER (2)				L NUMBER (8)			PAGE (3)						
	0	5	0	0	YEAR	SEQUENTIA NUMBER	REVISION NUMBER	0	4					
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TEXT (if more space is required, use additional NRC Form 365A's) (17)

CORRECTIVE ACTION

Immediate corrective action consisted of replacing the damaged wiring, relay, lamp socket and fuse. An inspection was performed on the other 4160 Volt switchgear to the extent possible with an energized bus. A more detailed inspection will be performed when conditions permit.

Additional corrective action will consist of evaluating whether a design change to the circuitry is necessary. An evaluation will also be performed to look at any other uses of these sockets to determine if modifications are necessary.

SIMILAR OCCURRENCES

None