GPU Nuclear

GPU Nuclear Corporation
Post Office Box 388
Route 9 South
Forked River, New Jersey 08731-0388
609 971-4000
Writer's Direct Dial Number:

C321-92-2145
May 19, 1992

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 92-002.

Sincerely,

John J. Barton
Vice President and Director
Oyster Creek

JJB\MH:jc
Enclosure

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

(LER-COVLTRS)

IE22
1/1

NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES 8/31/85

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Oyster Creek Nuclear Generating Station	0 5 0 0 0 2 1 9	1 OF 0 5

TITLE (4)
Inoperability of Diesel Generator for Greater Than 7 Days Caused by Failed Breaker Spring

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	DOCKET NUMBER(S)
0 4	2 1	9 2	9 2	— 0 0 2	— 0 0	0 5	1 9	9 2		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9): 1

POWER LEVEL (10): 1 0 0

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

20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
20.405(a)(1)(iii)	X 50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
Lynne W. Munzing	AREA CODE 6 0 9 — 9 7 1 1 — 4 1 1 8 9

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
E	E K	5 2 0	D 0 8 0	Y					

SUPPLEMENTAL REPORT EXPECTED (14)

	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO			

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

Diesel Generator 2 was out of service for greater than a seven-day period from March 23 to April 9, 1992. The plant was operating at full power at the time. The diesel generator failed to successfully complete its operability test at 0930 hours on March 23, 1992 but completed the test successfully later in the day.

The test failure was attributed to an auto synchronizer problem which would not have affected the diesel generator's emergency operation. The diesel generator failed its next scheduled biweekly test on April 5, 1992 at 0940 hours. After an extensive evaluation, a broken component in the 4160 volt output breaker was discovered. The breaker was replaced and Diesel Generator 2 was returned to service at 0855 hours on April 9, 1992. The cause of the event was fatigue failure of the breaker's prop spring, which intermittently prevented the breaker from latching in the closed position. Corrective actions included replacing the damaged breaker, inspecting and replacing the 4160 volt output breaker for Diesel Generator 1, and developing a schedule for overhaul of other 4160 volt breakers. This report will be made required reading for engineers normally involved in review of equipment operation for operability determinations. Safety significance is minimal because the other diesel generator and its associated engineered safety features remained operable while Diesel Generator 2 was out of service.

DATE OF OCCURRENCE

The condition was determined reportable on April 21, 1992, upon receipt of test results for a failed component.

IDENTIFICATION OF OCCURRENCE

Diesel Generator 2 was out of service for greater than a seven-day period from 0930 hours on March 23, 1992 to 0855 hours on April 9, 1992. This condition is prohibited by Technical Specifications 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. The biweekly operability test of Diesel Generator 2 was being conducted on March 23, 1992.

DESCRIPTION OF OCCURRENCE

On March 23, the biweekly operability test of Diesel Generator 2 (IEEE-EK, CFI-DG) was commenced at approximately 0930 hours. It was given a start signal, the diesel properly idled 90 seconds before acceleration, accelerated to full speed, flashed the field, built up voltage and began to automatically synchronize. The 4160 volt output breaker (CFI-52) closed and immediately reopened. A local SEQUENCE light (CFI-IL) was illuminated and DISABLED alarm (CFI-AA) was received in the Control Room. The diesel was then stopped from the Control Room. Engineering personnel were contacted and the test was rerun later that day. During the second test, Diesel Generator 2 started and loaded normally. An engineering evaluation concluded that the earlier problem was with the autosynchronizer (CFI-25) adjustment, which is bypassed during emergency operation. Since it was believed that there was no failure or degradation of equipment required for emergency mode operation, Diesel Generator 2 was considered operable based on the retest. A work order was issued to review synchronizer performance.

The next biweekly test of Diesel Generator 2 was performed on April 5, 1992 at 0940 hours. The same start sequence was observed: start signal, idle 90 seconds before acceleration, accelerate to full speed, flash the field, build up voltage, and begin to automatically synchronize. Again the 4160 volt output breaker closed and immediately reopened. A Control Room DISABLED alarm was received, but no local alarms were illuminated. A stop signal was given from the Control Room.

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

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

DESCRIPTION OF OCCURRENCE
Cont'd

Engineering personnel were contacted and the test was rerun successfully, but Diesel Generator 2 was not declared operable. Review of records (including plant computer data) indicated there was not an auto synchronizer problem, but probably a breaker or control circuitry problem. Diesel Generator 2 was declared inoperable as of 0942 hours on April 5, 1992. The breaker was replaced and Diesel Generator 2 was tested and returned to service at 0855 hours on April 9, 1992.

An evaluation using Kepner-Tregoe methods and equipment testing was conducted, and the 4160 volt output breaker was found to have a broken prop spring. The breaker was removed to the vendor's repair facility and tested. Testing on April 21, 1992 revealed that the breaker would intermittently latch closed, even with the broken prop spring.

CAUSE OF EVENT

The cause of the failure of the 4160 volt output breaker to close on both March 23 and April 5 was a broken prop spring. The prop spring is used to reset the breaker mechanism prop to a position under the prop pin, thus latching the breaker in the closed position. The spring broke due to fatigue failure. This type of failure was recognized by the vendor in 1990 and also was the subject of Information Notice 90-41, "Potential Failure of General Electric Magne-Blast Circuit Breakers and AK Circuit Breakers." Both the vendor and the Information Notice indicate that prop springs should be replaced before 2000 cycles of a breaker. This breaker had in excess of 2900 cycles at the time of spring failure. The plant had planned to inspect the 4160 volt breaker prop springs at the time of breaker overhaul, per Information Notice 90-41, but this breaker had not come due for overhaul before the spring failure.

The cause for the diesel generator being out of service greater than seven days is the failure to recognize the true cause of the diesel generator malfunction on March 23rd. The engineer reached his conclusion based on operator descriptions of the event, his past experience and successful completion of the second test. A review of plant computer records of the diesel generator start sequence could have ruled out the auto synchronizer as a cause.

ANALYSIS OF OCCURRENCE AND SAFETY SIGNIFICANCE

Oyster Creek has two essential 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. Each of the buses 1C and 1D is provided with an emergency diesel generator to supply power in the event that the normal power supply becomes unavailable.

Technical Specifications require a daily operability test of the operable diesel generator when one diesel generator is out of service. The daily test of Diesel Generator 1 was not performed between March 23 and April 5 because Diesel Generator 2 was thought to be operable at the time. Technical Specifications also require that when one diesel generator is inoperable, none of the engineered safety features normally fed by the operational diesel generator may be out of service. None of the engineered safety features fed by Diesel Generator 1 were out of service between March 23 and April 9.

Due to the intermittent behavior of its 4160 volt output breaker, Diesel Generator 2 may not have functioned to supply power in the event it was actuated between March 23 and April 5. However, since Diesel Generator 1 and all its associated engineered safety features were operable during the period, the safety significance of this event is considered minimal.

CORRECTIVE ACTION

When Diesel Generator 2 4160 volt output breaker was determined to be faulty, immediate corrective action was taken to replace it with an inspected spare breaker. The diesel generator was then tested and declared operable.

Diesel Generator 1 4160 volt output breaker was inspected and found to be satisfactory. It performed successfully in all daily operability tests run between April 5 and April 9 while Diesel Generator 2 was undergoing troubleshooting and repairs. Since the breaker had experienced approximately 1700 cycles, it was replaced with a spare and sent to the vendor for overhaul.

All other nuclear safety related 4160 volt breakers were reviewed. Emergency Service Water Pump A 4160 volt breaker had 2840 cycles. It was replaced with a spare breaker and sent to the vendor for overhaul. No other safety related breakers have greater than 2000 cycles. The schedule for the overhaul of the 4160 volt breakers is being reprioritized for nuclear safety related breakers with greater than 1000 cycles. Those breakers which are not nuclear safety related will be prioritized based on a combination of number of cycles, consequence of failure, and opportunity for repair.

This report will be made required reading for engineers normally involved in review of equipment operation to remind them to use all available sources of data when performing evaluations concerning equipment operability.

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

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

SIMILAR EVENTS

None

FAILURE DATA

Cause: E
System: EK
Component: 52
Manufacturer: G080
Reportable to NPRDS: Y