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, Unit 1	0 5 0 0 0 2 1 9	1 OF 0 3

TITLE (4)
Drywell Vent and Purge Valve Design Deficiency

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 5 0 0 0
1 0	2 3	8 4	8 4	0 2 3	0 0	1 1	2 1	8 4		0 5 0 0 0

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	0 0 0	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)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	X 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
	AREA CODE
Ralph C. Larzo, Spare Parts Engineer	6 0 9 9 7 1 - 4 6 3 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	
B		I S V	C 1 8 2	N							

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)

A design deficiency was discovered with containment isolation valves V-27-1, 2, 3 and 4 in that they did not fail closed upon loss of instrument air. These valves were locked closed prior to requiring primary containment integrity and an accumulator system was designed, installed, and tested to enable them to close upon loss of instrument air. Additionally, an investigation was completed that determined that no other containment isolation valves have the same design deficiency.

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

DATE OF OCCURRENCE

The date of occurrence was October 23, 1984.

IDENTIFICAION OF OCCURRENCE

During an engineering evaluation of replacement parts for containment isolation valves V-27-1, 2, 3, and 4, it was discovered that upon loss of instrument air to the operators these valves would not fail closed.

This event is considered reportable as defined in 10CFR50.73 sections (a)(2)(V) and (a)(2)(ii)(B).

CONDITIONS PRIOR TO OCCURRENCE

The plant was shutdown with fuel loaded.
Mode Switch Position - REFUEL
Reactor Coolant Temperature - 177°F

DESCRIPTION OF OCCURRENCE

During an engineering evaluation of containment isolation valves V-27-1, 2, 3, and 4, it was discovered that a design deficiency existed in that the valves did not fail closed upon loss of instrument air. Since these valves are of the same design, a test was performed on V-27-3 and 4 to isolate the air to their operators and attempt to shut the valves. The valves failed to shut when this test was performed. The Facility Description and Safety Analysis Report (FSDAR) section V.1.6 states that "Upon loss of motive power and when containment closure action of the valve is called for, the valve will fail as shown in Table V-1-4". This table in the FDSAR shows that these valves should fail closed upon loss of power. Since Oyster Creek does not rely on the operation of the instrument air system in safety analyses, the potential exists for these valves to remain open when required to be closed if the instrument air system is lost. It should be noted that this occurrence deals with the potential for a failure to exist and not an actual failure.

APPARENT CAUSE OF OCCURRENCE

The cause of the occurrence is inadequate design specification of valves installed for the application. Valves with a spring to close mechanism or stored air accumulator system should have been employed.

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

ANALYSIS OF OCCURRENCE

Valves V-27-1, 2, 3, and 4 provide redundant primary containment isolation of the supply and exhaust lines to the drywell HVAC system. The ability to automatically initiate primary containment isolation must be maintained when the reactor is critical or when reactor coolant temperature is above 212°F with fuel loaded in the core. This system mitigates the potential for a release of fission products from primary containment. Since the instrument air lines supplying the operators of V-27-1, 2, 3, and 4 are not designed to function following a seismic event and these valves do not fail closed upon loss of air, a potential would exist for a release of fission products past the primary containment boundary.

CORRECTIVE ACTION

Since primary containment integrity was not required at the time of discovery, the immediate corrective action was to determine if the same problem existed with any other containment isolation valves. After completion of this evaluation, it was determined that no other valves had this design deficiency. In order to allow plant startup V-27-1, 2, 3, and 4 had their air lines disconnected and the valves were locked closed. Subsequently, a seismically qualified accumulator system was designed, installed, and tested to enable them to close upon loss of instrument air.

COMPONENT DATA

Component information for V-27-1, 2, 3, and 4 is as follows:

Manufacturer: Center Line Corp.
Model : V-27-1 and 2
Series LTM Butterfly with Series 5948 Operator
V-27-3 and 4
Series LT Butterfly with Series 5948 Operator

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:

November 21, 1984

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. 84-023.

Very truly yours,

Peter B. Fiedler
Vice President and Director
Oyster Creek

PBF:dam
Enclosures

cc: Dr. Thomas E. Murley, Administrator
Region I
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

NRC Resident Inspector
Oyster Creek Nuclear Generating Station
Forked River, NJ 08731

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