

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Oyster Creek, Unit 1	DOCKET NUMBER (2) 0500021191	PAGE (3) 1 OF 04
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TITLE (4)
SDV Drain Valve Closure Failure

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)
08	17	84	84	019	00	09	18	84			05000
THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)											

OPERATING MODE (9) N	POWER LEVEL (10) 000	20.402(b)	20.408(e)	90.73(a)(2)(iv)	73.71(b)
		20.408(a)(1)(i)	90.38(e)(1)	X 90.73(a)(2)(v)	73.71(e)
		20.408(a)(1)(ii)	90.38(e)(2)	90.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Part 3, NRC Form 306A)
		20.408(a)(1)(iii)	90.73(a)(2)(i)	90.73(a)(2)(vii)(A)	
		20.408(a)(1)(iv)	90.73(a)(2)(ii)	90.73(a)(2)(vii)(B)	
		20.408(a)(1)(v)	90.73(a)(2)(iii)	90.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME K. F. Barnes, Licensing Engineer	TELEPHONE NUMBER 609971-4909
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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
E		IISVV	V10137	Y					

SUPPLEMENTAL REPORT EXPECTED (14)

<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On Friday, August 17, 1984, while performing a surveillance test of Scram Discharge Volume (SDV) drain valves V-15-121 and V-15-134, both valves failed to close upon command. A maintenance crew was dispatched and discovered that the mechanical override to valve V-15-121 had been positioned such that the air operator could not close the valve. V-15-134 failed to close due to binding. The mechanical override for V-15-121 was repositioned and V-15-134 was overhauled. The surveillance was repeated and both valves performed satisfactorily.

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

DATE OF OCCURRENCE

The event occurred on August 17, 1984.

IDENTIFICATION OF OCCURRENCE

Scram Discharge Volume (south bank) drain valves did not pass surveillance testing for closure following receipt of a closure signal as outlined in Technical Specification 4.2.H.

This event is considered a reportable event as defined in 10 CFR 50.73(a)(2)(v) and (vi).

CONDITIONS PRIOR TO OCCURRENCE

The reactor was flooded to 240" and the mode switch was in the REFUEL position.

DESCRIPTION OF OCCURRENCE

On August 17, 1984, a Scram Discharge Volume high water level test was being performed per station procedure 619.3.011. This procedure requires recording of the closure times of drain valves V-15-121 and V-15-134. Following repeated attempts by control room operators, neither of the two valves would close. The Group Shift Supervisor dispatched an immediate maintenance crew to investigate. The crew discovered that the mechanical override to valve V-15-121 had been positioned such that the air-operator could not close the valve. The mechanical handwheel was then used to move the mechanical override to a position that would allow the air-operator to perform its intended function. Valve V-15-134 was found to be binding heavily and was subsequently overhauled. This maintenance proved sufficient to restore the valve to a non-binding and operationally acceptable condition. Once the surveillance test was completed, the two valves were returned to the open position and the mechanical overrides were locked in the neutral position.

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APPARENT CAUSE OF THE OCCURRENCE

The apparent cause of the V-15-121 failure to close is attributed to administrative control error. The SDV operating procedure did not require a check of either the position of the mechanical override nor if the override had been locked out. Both of the valves (V-15-121 and V-15-134) have the ability to have their mechanical operators locked in a neutral position such that the valve is free to operate upon receiving an air-operator signal from the control room. Additionally, the handwheels of the mechanical overrides rotate extremely easily. Any personnel in the vicinity of these handwheels could very easily accidentally rotate the handwheels far enough so that free valve stem travel would be affected. If the mechanical override handwheels had been locked in the neutral position, V-15-121 would have closed properly.

V-15-134 failed to close due to binding due to brittle packing which resulted from the valve being in warehouse storage for several years prior to installation.

ANALYSIS OF OCCURRENCE and SAFETY ASSESSMENT

The primary function of the SDV is to ensure that an adequate volume will always be available to accommodate the discharge resulting from a scram. The second function of the SDV is to isolate the reactor coolant contained in the SDV system under a scram condition. The drain valves are positioned open to avoid any inadvertent filling of the SDV during normal operation which would leave no volume available for the scram discharge. Once the scram occurs, the valves are commanded to close thereby containing the pressurized reactor coolant. Valve failure in the open position would allow for unmonitored loss of reactor coolant during a scram. Valve failure in the closed position would potentially allow the SDV to fill with leakage flow to a point where the SDV would have insufficient volume remaining to accept the discharge resulting from a scram.

Aspects of this occurrence to consider are as follows: (1) the installation document associated with the SDV did not specifically address positioning of the override; and, (2) the potential problem with the override position was not identified by plant staff personnel during either the installation or turnover phase.

The problem with V-15-121 was that the mechanical override handwheel had been inadvertently rotated such that the indicator on the mechanical operator was fully in the open range. Upon returning the indicator to the neutral

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position, the valve operated satisfactorily. Following an overhaul of V-15-134, the valve performed properly without undue binding. At the time of the overhaul the valve packing was observed to be brittle and in need of replacement.

During the review and turnover process of this modification, an oversight occurred in that the significance of the handwheel being maintained in the proper position was not addressed. Special attention should have been paid to the handwheels of these mechanical overrides, especially in view of the fact that other maintenance work was in progress in the general vicinity of V-15-121 and V-15-134 (e.g., scaffold erections, personnel traffic, craftsmen under several supervisions, etc.). A worker could easily bump one of these handwheels and deflect the mechanical override far enough to affect stem travel.

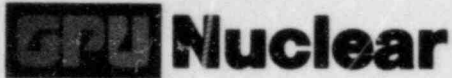
By installing locks on the mechanical operators the valves are adequately protected from either unintentional or deliberate improper positioning and should (and probably would have) operate(d) properly.

Since the plant was in a refueling outage and the reactor was in the refuel mode at the time of occurrence, the safety significance is considered minimal.

CORRECTIVE ACTION

The immediate corrective action was to reposition the mechanical overrides and overhaul V-15-134. The long-term solution, which has already been implemented, was to lock all drain valve mechanical overrides in the neutral position with permission from the Group Shift Supervisor required to remove the locks. The long term corrective actions include the following:

- 1) The mechanical overrides for all SDV drain valves have been locked in the neutral position. Permission of the Group Shift Supervisor is required prior to removing the locks.
- 2) The procedures for performing the valve check-off during system line-up will be revised to include verification of proper mechanical override position and the locked status.
- 3) Additionally, required reading will be issued to personnel involved in the preparation of procedure valve line-up lists and to operations personnel to ensure they are aware of this occurrence.



GPU Nuclear Corporation
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609 971-4000
Writer's Direct Dial Number:

September 18, 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. 84-019.

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
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NRC Resident Inspector
Oyster Creek Nuclear Generating Station
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