

Corrected version



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February 24, 2000
1940-00-20041

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 00-001: Manual Scram Following Multiple Reactor
Recirculation Pump Trip

Enclosed is Licensee Event Report 00-001. This event did not affect the health and safety of the public or plant personnel.

If any additional information or assistance is required, please contact Mr. Paul Czaya of my staff at 609-971-4139.

Very truly yours,

A handwritten signature in black ink, appearing to read "Sander Levin".

Sander Levin
Acting Site Director

SL/PFC/TC

c: Administrator, Region I
NRC Project Manager
Senior Resident Inspector

IE22

LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (IT-8 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20542-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

Oyster Creek Unit 1

DOCKET NUMBER (2)

05000 - 219

PAGE (3)

1 of 5

TITLE (4)

Manual Scram Following Multiple Reactor Recirculation Pump Trip

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 NAME	DOCKET NUMBER
01	21	00	00	001	0	02	24	00		05000
										05000

OPERATING	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR (101): (Check one or more) (11)			
		20.2201(b)	20.2203(a)(2)(v)	50.73(a)(2)(i)	50.73(a)(2)(viii)
POWER	100	20.2203(a)(1)	20.2203(a)(3)(i)	50.73(a)(2)(ii)	50.73(a)(2)(x)
		20.2203(a)(2)(i)	20.2203(a)(3)(ii)	50.73(a)(2)(iii)	73.71
		20.2203(a)(2)(ii)	20.2203(a)(4)	X 50.73(a)(2)(iv)	OTHER
		20.2203(a)(2)(iii)	50.36(c)(1)	50.73(a)(2)(v)	
		20.2203(a)(2)(iv)	50.36(c)(2)	50.73(a)(2)(vii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME

Thomas Corcoran, Plant Operations Engineer

TELEPHONE NUMBER (include Area Code)

609-971-4986

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

SUPPLEMENTAL REPORT EXPECTED (14)

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

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On January 21, 2000, at approximately 1049 hours, control room operators manually scrambled the reactor in response to a multiple reactor recirculation pump trip. Human error caused the multiple pump trip during performance of an isolation condenser actuation system surveillance. The isolation condenser actuation system also inserts trip signals into the reactor recirculation pump trip system. After testing the first instrument, the recirculation pump trip system was not properly reset before proceeding to the second instrument. When a test signal was introduced to the second instrument, the pumps tripped as designed. Plant response to the manual scram was normal.

A human performance assessment has been completed and corrective actions to reinforce management expectations will be completed.

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TEXT (If more space is required, use additional copies of NRC Form 366A) (17).

DATE OF OCCURRENCE

The event occurred at approximately 1049 hours on January 21, 2000.

IDENTIFICATION OF OCCURRENCE

On January 21, 2000, control room (EIS-NA) operators manually scrammed the reactor (EIS-AC) in response to a trip of all five reactor recirculation (EIS-AD) pumps. The pumps tripped due to actuation of the ATWS (Anticipated Transient Without Scram) protection system (EIS-JE). This is reportable in accordance with 10 CFR 50.73(a)(2)(iv).

CONDITIONS PRIOR TO DISCOVERY

The plant was operating at 65% power with all five reactor recirculation pumps in service. The "A" feedwater (EIS-SJ) string was removed from service for maintenance.

DESCRIPTION OF OCCURRENCE

Procedure 609.3.113, Isolation Condenser Automatic Actuation Bistable Calibration and Test, was scheduled to be performed on January 21, 2000 during a plant power reduction. During the review of planned down-power activities, the impact of conducting the surveillance was reviewed. It was determined that at the time the surveillance was to be performed, the plant would be stable at 65%, with work on feedwater and condensate systems occurring. The performance of the surveillance would not be impacted by this work, so it remained on the schedule for performance during the down-power period.

A pre-shift briefing was held within the instrumentation and control (I&C) shop prior to the performance of the surveillance. A management representative observed the briefing. The comments relative to the briefing indicated that operating experience was reviewed, procedure use and adherence were emphasized, and self-checking was reviewed. Also discussed during the briefing was the schedule for completing the work, and any plant conditions impacting the surveillance. The pre-job brief was concluded such that all the participants were provided a clear set of goals for accomplishment of the task. The 3 I&C technicians involved in the performance of the surveillance were present for the briefing.

At the pre-shift brief conducted by the operating crew, the performance of this surveillance was not discussed. The pre-shift briefing focused on plant status (65% power) and upcoming activities associated with the down-power (feedwater and condensate maintenance).

Shift staffing normally includes 3 control room operators (CRO) and 3 plant operators. Due to the power reduction, one of the shift CROs was assigned to conduct switching and tagging evolutions at the start of the shift. The remaining 2 CROs were assigned control room tasks.

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TEXT (If more space is required, use additional copies of NRC Form 366-A) (17)

DESCRIPTION OF OCCURRENCE (cont'd.)

At approximately 10:00am, the I&C technicians entered the control room to request permission to perform the surveillance test. The surveillance test was reviewed with the control room Group Operating Supervisor (GOS), who directed the Lead I&C technician to discuss the test with the Lead CRO (LCRO). The LCRO verified the control room copy of the surveillance test was the same revision as the one in use by the I&C technicians and gave permission to commence the surveillance. The GOS directed the LCRO to assist the I&C technicians in the performance of the surveillance.

A pre-evolutionary briefing to review and discuss the surveillance was not conducted. The GOS had intended to conduct a briefing after reviewing the surveillance procedure with the I&C technicians but due to distractions with feedwater heaters the GOS failed to conduct the briefing prior to the start of the surveillance.

Based upon interviews and discussions with the personnel involved, the following scenario explains the sequence of events that lead to the trip of the recirculation pumps and subsequent manual scram.

At the initiation of the surveillance test, the LCRO was tasked with supporting the I&C technicians in the performance of the test. This was to include resetting of alarms and equipment manipulation as required by the surveillance test.

The third shift CRO re-entered the control room following the completion of assigned switching and tagging duties. At this point, the lead I&C technician had requested that the LCRO depress the RESET "A" PUSHBUTTON, and verify that alarm E-1-a cleared. Based upon the statements of the GOS and LCRO, the control room GOS stopped this action, and directed the LCRO to turnover the surveillance duties to the third shift CRO. The LCRO believed he never reset the logic for the ATWS trip.

After continuing surveillance testing and recording data, it is required that an operator RESET "A" PUSHBUTTON and verify that alarm ACTUATE AI (E-1-a) clears. This step was not performed or performed inadequately. Alarm E-1-a remained in a tripped condition until it was reset following the manual scram.

Following the test switch restoration, the isolation condenser vent valves were opened. At this point, the testing of the A channel was complete and the test equipment was moved to channel B.

The B channel was then taken to test, which satisfied the ATWS logic circuit since E-1-a remained tripped. This resulted in a trip of multiple recirculation pumps requiring a manual scram of the reactor.

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APPARENT CAUSE OF OCCURRENCE

The cause of this event has been determined to be human error in that the personnel performing the surveillance test failed to complete the reset of the recirculation pump trip system prior to commencing the test on the second pressure instrument. The step for resetting the system is properly stated in the procedure but the step was missed due to human error. The root cause for this human error was determined by the site human performance coordinator to be that the lead I&C technician failed to maintain sufficient control over performance of the surveillance test. As a result, a critical step in the test was not performed correctly.

Contributing Causes

1. The LCRO was tasked with supporting the performance of the surveillance, as well as having additional responsibilities. As such, he could not maintain the necessary focus on the performance of the surveillance test. Additionally, it was necessary for the LCRO to turnover this responsibility to CRO2 in the middle of the surveillance, which created a discontinuity in the oversight of the surveillance test.
2. Control room personnel consider themselves in a support role for I&C surveillance tests, to perform such actions as acknowledging alarms and resetting trips when required by the procedure. This perception resulted in an insufficient focus on the performance of this surveillance test.
3. A pre-evolutionary brief by the control room GOS was not conducted prior to the execution of the surveillance test. Management expectations regarding pre-evolutionary briefs were not met.
4. The practice of only putting check marks next to completed steps, in lieu of actual initials at the time of performance, may have contributed to the failure to adequately perform the step of resetting the ACTUATE AI alarm and the ATWS logic.
5. During the course of interviews with the personnel involved with the January 21, 2000 scram, verbal communication practices within the control room were discussed. The observation of the surveillance test on January 29, 2000, confirmed that verbal communication practices related to the performance of surveillance tests and acknowledgement of alarms were not up to management expectations.

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ANALYSIS OF OCCURRENCE AND SAFETY ASSESSMENT

Although actuated due to human error, the ATWS reactor recirculation pump trip system worked as designed. The insertion of a manual scram in response to the multiple recirculation pump trip was prompt and in accordance with station procedure.

Plant response to the manual scram was normal and operator actions during the transient were in accordance with procedures. During this event, plant systems operated as designed with all control rods (EIIC-ROD) inserting in accordance with Technical Specification requirements. Following the manual scram, reactor water level decreased below the reactor low level scram setpoint, as expected, and a reactor low level scram signal was initiated. Shortly thereafter a scram discharge volume (EIS-AA) high level scram signal was initiated, also as expected. As the initial manual scram signal had not been reset, the two additional reactor protection system actuations that occurred after control rods fully inserted did not result in any further activation of engineered safety features.

CORRECTIVE ACTION

Immediate corrective actions were taken to respond to the reactor trip and place the reactor in the cold shutdown condition.

Operations and maintenance management will review this occurrence with their respective organizations and reinforce self-checking and peer checking practices. Also, a joint working group will be formed to establish and implement appropriate expectations for the conduct and control of I&C surveillance testing involving control room personnel.

SIMILAR EVENTS

None