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Writer's Direct Dial Number:

February 1, 1996
6730-96-2015

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 95-009

Enclosed is Licensee Event Report 95-009. This event did not impact the health and safety of the public.

If any additional information or assistance is required, please contact Mr. John Rogers of my staff at 609.971.4893.

Michael B Roche
Michael B. Roche
Vice President and Director
Oyster Creek

MBR/JJR
Enclosure

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

9602080211 960201
PDR ADOCK 05000219
S PDR

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 (T-6 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, 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)

50-219

PAGE (3)

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TITLE (4)

Two Average Power Range Monitors Were Inoperable Due To A Lack of Understanding of Circuitry

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
Month	Day	Year	Year	Sequential No.	Rev.	Month	Day	Year	FACILITY NAME	DOCKET NUMBER
01	03	96	95	-- 009	-- 0				FACILITY NAME	DOCKET NUMBER
Operating Mode			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 8: (Check one or more) (11)							
N			20.2201(b)			20.2203(a)(2)(v)		x	50.73(a)(2)(i)	50.73(a)(2)(viii)
Power Level			100			20.2203(a)(1)			50.73(a)(2)(ii)	50.73(a)(2)(x)
			20.2203(a)(2)(i)			20.2203(a)(3)(i)			50.73(a)(2)(iii)	73.71
			20.2203(a)(2)(ii)			20.2203(a)(4)			50.73(a)(2)(iv)	OTHER
			20.2203(a)(2)(iii)			50.36(c)(1)			50.73(a)(2)(v)	Specify in Abstract below or in NRC Form 366A
			20.2203(a)(2)(iv)			50.36(c)(2)			50.73(a)(2)(vii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME

Mark Budaj

TELEPHONE NUMBER (include Area Code)

609.971.4788

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 SUBMISSION	MONTH	DAY	YEAR

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

On December 31, 1995, at 1330 hours, an "APRM HI" alarm was received for APRM Channel 2. Upon investigation the recirculation flow signal for APRM 2 was reading 117% while the flow signal for the other seven channels read approximately 98%. Maintenance was performed on APRM 2 on January 2, 1996, and the channel was declared operable.

A subsequent review of records revealed that inadequate post maintenance testing had been performed on APRM 2 following a component replacement. APRM 2 was believed to be operable but was not. Also revealed was APRM 1 had been bypassed for maintenance during this time period. This combination exceeded the allowed out of service time for two APRM channels in the same Reactor Protection Trip System.

The root cause of this event was the lack of a complete understanding of the APRM flow bias circuitry. This resulted in inadequate post maintenance testing being performed. Long term corrective actions have been initiated to provide additional training on the APRM system, revise the quarterly surveillance test procedure, revise the vendor's manual, and identify if any administrative controls may be warranted to prevent recurrence.

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		95 -- 009 -- 0	

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

DATE OF DISCOVERY

A problem with the Average Power Range Monitor (APRM)(EIIS: IG) Channel 2 operability was identified on December 31, 1995. A subsequent review of records on January 3, 1996, revealed Channel 2 had been inoperable since inadequate post maintenance testing had been performed following a component replacement on August 29, 1995. Additionally, the review revealed APRM Channel 1 had been bypassed for approximately fifteen hours on September 16 and 17, 1995.

IDENTIFICATION OF OCCURRENCE

Two APRMs in the same Reactor Protection Trip System (EIIS:JL) were inoperable for a period of time in excess of that allowed by Technical Specifications. This condition has been determined to be reportable under 10 CFR 50.73(a)(2)(i).

CONDITIONS PRIOR TO DISCOVERY

The reactor plant was in the RUN mode at 1930 MWth at the time of discovery and during the time of this event.

DESCRIPTION OF OCCURRENCE

On December 31, 1995, at 1330 hours, an "APRM HI" alarm was received for APRM Channel 2. Upon investigating the alarm, the recirculation flow signal for APRM Channel 2 read 117% while the other seven APRM flows read approximately 98%. The APRM was declared inoperable and subsequently bypassed in accordance with plant procedures. Maintenance personnel were contacted to investigate.

On January 2, 1996, technicians performed troubleshooting and calibration on APRM Channel 2 in accordance with the vendor's manual. The APRM was found to be out of calibration. The flow signal was restored to the correct level, and the channel was declared operable.

A review of records revealed that maintenance had been performed on APRM Channel 2 on May 22, 1995, and August 29, 1995. On May 22, 1995, technicians attempted to replace the trip bias unit (EIIS:EC) to resolve an unstable trend in the Scram Clamp Setpoint. This effort was aborted when they were unable to achieve setpoints within tolerance and an indicating light failed to illuminate on the replacement unit. The original unit was reinstalled and tested

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DESCRIPTION OF OCCURRENCE (con't.)

satisfactorily. The cause for the deficiencies noted with the replacement unit installed were not resolved by the technicians. On August 29, 1995, the original APRM Channel 2 trip bias unit was again removed and the replacement unit installed utilizing the same Job Order from the previous attempt. A post maintenance test utilizing the existing APRM Surveillance Test and Calibration Procedure yielded acceptable results.

This review also determined that the Surveillance Test and Calibration Procedure was inadequate for post maintenance testing for the maintenance task which was performed on the replacement unit. As a result it has been determined that APRM Channel 2 had been inoperable from August 29, 1995, until January 2, 1996.

A review of maintenance history for the other seven APRMs was conducted to assess compliance relative to Technical Specification required APRMs. This review revealed that on September 16 and 17, 1995, for a period of approximately fifteen hours, APRM Channel 1 was out of service for troubleshooting. This is a violation of the tech spec allowable limit of twelve hours for two inoperable APRM channels in the same Reactor Protection Trip System.

APPARENT CAUSE OF OCCURRENCE

The root cause of this event was a lack of a complete understanding of the APRM flow bias circuitry. This resulted in an inadequate post maintenance test at task completion. A contributing cause to this event was ineffectively addressing the problems experienced during an earlier attempt to replace the APRM trip bias unit.

ANALYSIS OF OCCURRENCE

The safety significance of having APRM Channels 1 and 2 concurrently bypassed for greater than twelve hours is minimal. Two events which could potentially be affected by this configuration are thermal hydraulic instability and rod withdrawal error. The thermal hydraulic instability analysis requires the flow biased response from the APRM high flux scram function. Rod withdrawal error transient analysis takes credit for a high flux rod block function to mitigate the event.

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APPARENT CAUSE OF OCCURRENCE ((cont'd.).)

Technical Specification 3.1.B.3 defines APRM channel input operability requirements in order to ensure a sufficient APRM response to thermal hydraulic instability. At all times during the period of August 1995 to January 1996 this specification was met and APRM sensitivity was adequate to sense and suppress thermal hydraulic instability. The APRM configuration assumed in the analysis bounds the configuration where APRM Channels 1 and 2 are inoperable, as long as specification 3.1.B.3 is met.

The rod withdrawal error analysis for the present operating cycle (cycle 15) is not mitigated by the high flux rod block function. The results of the analysis shows that the rod withdrawal proceeds to full out position prior to the APRM reaching the high flux rod block level. As a result, even if both channels 1 and 2 were assumed inoperable, the rod withdrawal error analysis results would not change.

CORRECTIVE ACTIONS**Short Term:**

Upon discovery of the APRM Channel 2 flow discrepancy it was declared inoperable and bypassed. Troubleshooting and calibration were performed to restore channel operability. Maintenance history was reviewed to assess Technical Specification compliance, and to ensure that no other APRM Channel flow bias signals had been improperly set since the last scheduled full calibration during the last refueling outage. No other occurrences were identified.

Long Term:

Training on the APRM system will be enhanced to provide a greater level of detail regarding the APRM flow bias circuitry performance. The quarterly APRM Surveillance Test and Calibration procedure will be revised to include a comparison of recirculation flows for all APRM Channels at the conclusion of each test/calibration. Also, the vendor's technical manual will be revised to provide clarification regarding flow bias adjustments.

An investigation is in progress to review the circumstances surrounding the problems experienced during the earlier work attempt and to identify any additional administrative controls which may be warranted to prevent recurrence.

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SIMILAR EVENTS

LER 94-019: SBO Power Source Unavailable Due to Inadequate Design of Modification Due to Inadequate Administrative Control.