

U.S. NUCLEAR REGULATORY COMMISSION

REGION I

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FACILITY NAME: Oyster Creek Nuclear Generating Station
Forked River, New Jersey
INSPECTION AT: Forked River, New Jersey
INSPECTION CONDUCTED: March 7-11, 1994
INSPECTOR: John Caruso, Operations Engineer

INSPECTOR: *John G. Caruso* 3/28/94
John G. Caruso, Operations Engineer
BWR Section, Operations Branch
Division of Reactor Safety
Date

APPROVED BY: *Richard J. Conte* 3/29/94
Richard J. Conte, Chief
BWR Section, Operations Branch
Division of Reactor Safety
Date

Inspection Summary: Inspection from March 7-11, 1994 (Report No. 50-219/94-06)

Areas Inspected: The inspection objectives were to determine the safe operation of the plant by conducting personnel interviews, surveillance test observations, and independent examination of selected procedures, records and documents. The review was focused on the surveillance activities scheduled the week of the inspection and selected review of safety-related surveillance test procedures and data.

The purpose was to determine whether the surveillance testing of safety-related equipment is conducted in accordance with approved plant procedures as required by technical specifications (TS).

Results: The surveillance testing of safety-related systems and components was conducted in accordance with approved plant procedures and technical specifications applicable to this inspection. The personnel followed the surveillance test procedures, accurately collected and analyzed the test data, and completed the closeout documentation. The surveillance test procedures were adequate, sufficiently detailed, and easy to follow. The surveillance test equipment was calibrated and controlled in accordance with the approved plant procedure. The tests were well controlled by licensed Reactor Operators or by lead I&C Technicians. The inspector observed consistent three-way communication, independent verification and self-checking techniques utilized. Good coordination and team work was observed between Operations and I&C personnel. LCOs were entered as systems were made inoperable, as required by Technical Specifications and the Operations Department Interim Guidance provided for entering LCOs.

DETAILS

1.0 INTRODUCTION AND OVERVIEW

The inspection was conducted in accordance with NRC Inspection Procedure 61700, "Surveillance Procedures and Records." The standards applied for this inspection were the American National Standard (ANSI N18.7-1976/ANS-3.2) and were required to be implemented by the GPU Nuclear Operational Quality Assurance Program, Revision 1, 12/88. The review was focused on the surveillance activities scheduled the week of the inspection and selected review of safety-related surveillance test procedures and data.

The purpose of the inspection was to determine whether the surveillance testing of safety-related equipment was adequate and was conducted in accordance with approved plant procedures as required by Technical Specifications (TS) and the in-service testing program.

Entering Technical Specification (TS) Limiting Conditions for Operation (LCOs) (as systems were made inoperable during surveillance testing) is the subject of findings identified in Operational Safety Team Inspection No. 50-219/93-81. The inspector did not attempt to review the findings during this inspection, since the licensee had not yet responded in writing. However, the inspector did verify for the testing observed, that LCOs were entered as systems were made inoperable as required by TS and by the Operation's Department Interim Guidance provided for entering LCOs.

2.0 OBSERVATION OF SURVEILLANCE TESTING

2.1 Scope

The inspector observed the performance of surveillance testing by operations, instrumentation and control (I&C) personnel. The observations included the following: content of the surveillance procedure, surveillance test data collection, plant equipment response, and the surveillance test documentation closeout. The review was to determine if personnel followed procedures, adequately coordinated the surveillance test activity, equipment operated as designed, and surveillance test data was properly evaluated for the acceptance criteria. Attachment 1 contains the list of surveillance tests and related documentation reviewed by the inspector.

In addition, the inspector made the following verifications concerning these tests:

- Surveillance procedures were reviewed to verify the procedures adequately demonstrated system operability as required by Cyster Creek's Technical Specifications.
- Tests were completed within the required time frequencies.
- Testing was performed by qualified individuals based on the review of the training records of the assigned I&C technicians.

- Limiting Conditions for Operation (LCOs) were entered as systems were made inoperable as required by Technical Specifications and by the Operations Department's Interim Guidance provided for entering LCOs.
- System and Test Instruments were maintained within calibration and met procedural requirements.
- Test data was accurate, complete, and met the established acceptance criteria.
- Systems were properly returned to service following test completion.

The inspector observed the performance of 3 scheduled surveillance tests:

- "Containment Spray and ESW Pump System 2 Operability," 607.4.005 performed monthly to verify the operability of the System 2 Containment Spray pumps and Emergency Service Water pumps and selected valves in each system.
- "Core Spray System 1 Instrument Channel and Level Bistable Calibration and Test and System Operability," 610.3.115 performed once every 3 months to test the operability of the Core Spray Pumps and selected system valves, the automatic initiation logic of the Core Spray System 1 by simulation of Reactor Low-Low Level and/or Drywell High Pressure signals, and to test other related automatic control logic circuits.
- "Core Spray Isolation Valve Actuation Test and Calibration," 610.3.006 performed monthly to test core spray parallel isolation valve actuation by simulation of low pressure at respective pressure switches.

2.2 Findings

The tests were well controlled by licensed Reactor Operators or by lead I&C Technicians. The Containment Spray and ESW pump system 2 Operability test was performed by only Operations Department personnel and the other two (Core Spray System) tests were performed utilizing the coordinated efforts of both Operations and I&C personnel. The Core Spray System 1 Instrument Channel and Level Bistable Calibration and Test and System Operability 610.3.115 was a relatively complex test requiring a significant amount of coordination and involving the efforts of 9 Operations and I&C personnel. The inspector observed consistent three-way communication, independent verification and self-checking techniques utilized. Good coordination and team work were observed between Operations and I&C personnel. The I&C technicians received Operations approval prior to starting and upon completion of each surveillance test. In addition, good supervisory oversight of both Operations and I&C personnel was observed. Overall, these tests were conducted in a professional manner.

Applicable surveillance test (ST) procedures were descriptive and provided written guidance for each specific switch or test component manipulation. Operations personnel and I&C technicians followed the ST step-by-step with the procedure in hand. The ST performance steps were followed by the corresponding data collection steps. The surveillance documentation was completed on separate data collection sheets that were included as attachments to each procedure. The surveillance testing of safety-related systems and components was conducted in accordance with approved plant procedures and technical specifications applicable to this inspection.

The surveillance test scheduling was coordinated between the maintenance job planner (responsible for maintenance of the plant master surveillance test schedule) and individual departments through issuance of the weekly surveillance schedule and the "Oyster Creek Operating Cycle 14 Two Week Schedule." The master surveillance test schedule was maintained as part of the Maintenance Department's data base and was updated by the responsible maintenance job planner as the tests were completed.

In one instance, during the performance of the Core Spray System 1 Instrument Channel and Level Bistable Calibration and Test and System Operability surveillance 610.3.115, control room operators recognized a discrepancy between the surveillance procedure expected response and the control room annunciator response. Approximately 8 minutes after the automatic start of the Emergency Diesel Generator (EDG) 1, Annunciator T-7-b, "EDG 1 DAY TANK LVL HI/LO/LUBE OIL FAIL," was received. Investigation showed normal Day Tank level, normal discharge pressure on Circulating Oil pump and Turbo Oil pump and the Fuel Oil Transfer pump switch was verified "ON." The Transfer Pump Switch was cycled and annunciator T-7-b cleared. The control room operators documented the problem on Deviation Report number 94-109 in order to troubleshoot and resolve this problem.

During performance of the Core Spray Isolation Valve Actuation Test and Calibration, 610.3.006, the inspector questioned the meaning of steps 6.2.4.7 and 6.3.4.7, "Time for System 1 (2) Overpressure Alarm to be Received from the Time the First Parallel Valve Begins to Open," and the logging of greater than 2 minutes when the test specifies "**Over Two Seconds**": (Up to 2 minutes). The licensee explained that this condition was desirable since it demonstrated that the parallel check valves are effective in preventing system backleakage. However, the licensee agreed that the logging of greater than 2 minutes when the test specifies "Over Two Seconds": (Up to 2 minutes) was confusing. The licensee agreed to evaluate and consider a possible procedure revision to clarify these sections of the procedure.

Interviews were conducted with I&C technicians and supervisors. These interviews did not identify any problems with the training received, quality of procedures, and test equipment. In general, the technicians were satisfied with the initial and refresher training programs in preparing them to perform their jobs. The technicians indicated that vast improvements in training have occurred in the last three to four years. The technicians indicated that their management and training staff have listened to, and acted upon, the technician feedback

concerning training needs. The technicians stated the surveillance test procedures required only infrequent clarification and/or revision. The preventive maintenance procedures were judged to be adequate but improving in quality. Very infrequent problems were experienced with the use of the maintenance and test equipment provided. The inspector's independent observations and findings agreed with and supported these interview comments.

2.3 Conclusions

The surveillance testing of safety-related systems and components was conducted in accordance with approved plant procedures and technical specifications applicable to this inspection. The personnel followed the surveillance test procedures, accurately collected and analyzed the test data, and completed the closeout documentation. The surveillance test procedures were adequate, sufficiently detailed, and easy to follow. The surveillance test equipment was calibrated and controlled in accordance with the approved plant procedure. The tests were well controlled by licensed Reactor Operators or by lead I&C Technicians. The inspector observed consistent three-way communication, independent verification and self-checking techniques utilized. Good coordination and team work were observed between Operations and I&C personnel. LCOs were entered as systems were made inoperable as required by Technical Specifications and the Operations Department Interim Guidance provided for entering LCOs.

3.0 QA AUDITS

The inspector reviewed 6 previously-issued QA audit reports listed in Attachment 1. The reports covered the areas of Plant Operations, Maintenance, Chemistry, and Engineering. The inspector concluded that the audits appeared to be thorough in scope. Several significant findings were identified affecting the conduct of the Surveillance Program. These findings were critical, insightful, and reflected proper technical knowledge of the areas being audited. Followup audits verified that corrective actions taken were adequate to resolve the deficiencies previously identified.

4.0 EXIT MEETING

The inspector met with licensee representatives at the conclusion of the inspection on March 11, 1994. The inspector summarized and discussed the findings and observations made during the inspection.

Key Personnel contacted during the inspection were:

Oyster Creek Nuclear Generating Station

*S. Levin	Director, Operations and Maintenance
*P. Scallon	Manager, Plant Operations
*J. Hildebrand	Maintenance Director
*K. Mulligan	Manager, Operations Support
*T. Sensue	Licensing Engineer
D. McMillan	Technical Functional Systems Engineering Manager
*P. Thompson	Site Audit Manager
*M. Bradley	Instruments and Controls Superintendent
*P. Crosby	Supervisor, System Engineering
*G. Busch	Manager, Licensing
T. Osborne	Instruments and Controls Job Supervisor
M. Button	Instruments and Controls Job Coordinator
C. Gaydos	Operations Control
R. Baren	Safety Review Engineer
R. Randol	Job Planning SRI
J. Galantio	System Engineer

United States Nuclear Regulatory Commission

*L. Briggs	Senior Resident Inspector
*J. Caruso	Operations Engineer
*S. Pindale	Resident Inspector

*Denotes those present at the exit meeting on March 11, 1994. The inspector also held discussions with other licensee management, operations, and maintenance personnel.

Attachment: Documents Reviewed

ATTACHMENT 1

DOCUMENTS REVIEWED

<u>Procedure Number</u>	<u>Title</u>	<u>Revision</u>
●6234-PGD-2664	"Integrated Maintenance Training Program Instrument and Control Technicians - Nuclear,"	Rev. 3
●6234-PGD-2664-980.00	"Oyster Creek Instrument and Control Technician OJT Assignments,"	Rev. 3
*Surveillance Procedure 610.3.115	"Core Spray System 1 Instrument Channel and Level Bistable Calibration and Test and System Operability"	Rev. 3
*Surveillance Procedure 610.3.006	"Core Spray Isolation Valve Actuation Test and Calibration,"	Rev. 32
*Surveillance Procedure 607.4.005	"Containment Spray and Emergency Service Water Pump System 2 Operability and In-service Test,"	Rev. 17
●116	"Surveillance Test Program"	Rev. 39
●125.1	"In-Service Test Program Administration"	Rev. 9

* Denotes the surveillance procedures directly observed.

QA Audit Reports

●S-OC-92-09	Plant Operations (8/20/92-12/23/92)
●S-OC-93-04	Plant Chemistry (3/11/93-5/18/93)
●S-OC-93-03	Plant Engineering (2/25/93-5/20/93)
●S-OC-93-14	Plant Maintenance (10/28/93-12/13/93)
●S-OC-92-14	Plant Maintenance (10/29/92-3/16/93)
●S-OC-93-11	Plant Operations (8/12/93-9/27/93)

Miscellaneous

- Operating Cycle 14, two week schedule, dated 3/4/94
- Oyster Creek Nuclear Generating Station Surveillance Schedule
- Oyster Creek Technical Specifications
- Oyster Creek Nuclear Generating Station Updated Final Safety Analysis Report

Memoranda

- Memorandum, Oyster Creek 2100-94-024, dated 1/26/94, "Clarification Memo Titled Verification of System Operability."
- Memorandum, Oyster Creek 2000-94-025, dated 1/27/94, "Interim Guidance for Entering LCOs While Performing Surveillance Tests."
- Memorandum, Oyster Creek 2100-94-053, dated 2/8/94, "Interim Guidance for Entering LCOs While Performing Surveillance Tests."
- Memorandum, Oyster Creek 2100-94-062, dated 2/14/94, "Guidelines for Using GMS2 When Verifying System Operability."