

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

Region I

Report No. 50-219/82-18

Docket No. 50-219

License No. DPR-16 Priority -- Category C

Licensee: GPU Nuclear Corporation

100 Interpace Parkway

Parsippany, New Jersey 07054

Facility Name: Oyster Creek Nuclear Generating Station

Inspection at: Forked River, New Jersey

Inspection conducted: July 6 - August 2, 1982

Inspectors: 

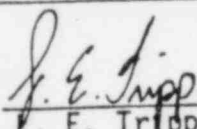
J. Thomas, Resident Inspector

8/9/82

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Approved by: 
L. E. Tripp, Chief, Reactor Projects
Section 2A

8/27/82

date signed

Inspection Summary: Inspection on July 6 - August 2, 1982 (Report No. 50-219/82-18)
Routine inspection by the resident inspector (83 hours) including review of plant
operations, plant tours, log and record review, surveillance observation, review of
licensee event reports, and on-site followup of Licensee Event Reports.

Results: Three violations (Failure to follow procedures pertaining to protection
of electrical equipment and instrumentation, detail 2.2.2; Failure to implement
equipment control procedures, detail 2.2.5; and Violation of Safeguards Contingency
Plan, detail 2.2.7).

DETAILS

1. Persons Contacted

J. Carroll, Director, Plant Operations
P. Fiedler, Vice President and Director, Oyster Creek
K. Fickeissen, Plant Engineering Director
J. Knubel, Manager, BWR Licensing
M. Laggart, Supervisor Oyster Creek Licensing
R. Mc Keon, Manager, Plant Operations
J. Riggart, Security Supervisor
W. Stewart, Plant Operations Manager
J. Sullivan, Plant Operations Director
D. Turner, Radiological Controls Manager

The inspector also interviewed other licensee personnel during the inspection including management, clerical, maintenance, and operations personnel.

2. Review of Plant Operations

2.1 The inspector routinely toured the following plant areas:

- Control Room
- Turbine Building
- Augmented Off-Gas Building
- New Rad-Waste Building
- Cooling Water Intake and Dilution Plant Structure
- Monitoring Change Area
- 4160 Volt Switchgear, 460 Volt Switchgear, and Cable Spreading Rooms
- Diesel Generator Building
- Battery Rooms
- Maintenance Work Areas
- Yard Areas

2.2 The inspector observed the following:

2.2.1 Daily inspection tours of the Control Room included examination of instrumentation, recorder traces, annunciator panels, switch positions, and logs and records to verify adherence to applicable Limiting Conditions for Operation (LCO). The inspector verified availability and proper alignment of emergency cooling systems and onsite and offsite electrical power sources. Recorder traces were examined for indications of unexplained or unplanned plant transients. Stack Gas Monitor recorders were examined for indications of abnormal releases. Panels were examined to verify operability and proper alignment of containment systems, proper containment inerting, and proper containment temperature and pressure. Control rod density and nuclear instrumentation limits were verified. Status of alarmed annunciators was discussed with operators to verify that corrective action was being taken if required. The inspector observed evolutions in progress to verify that approved procedures were in use. Shift turnovers were frequently observed for adequacy. The inspector verified proper Control Room manning and access control.

2.2.2 The inspector examined local plant instrumentation necessary to support safe plant operation. The instruments were verified to be in service with proper on-scale indication and channel correlations where applicable. Root valve alignment and cable connections were checked when possible. The inspector verified that activities in the area did not impair instrument operability.

On July 29, 1982, the inspector found three reactor protection system terminal boxes on instrument rack RK04 that had not been secured after entry. The hinged covers were in place but were not dogged. In addition, 'E' Recirculation Pump Flow transmitter 1A-60-E1, Core Differential Pressure transmitter 1A-07, and Reactor Head Cooling Flow transmitter FIT-RV20, were not tightly closed. The covers on these transmitters were held in place by only one of the four bolts, and that bolt was not tight. Failure to secure the covers on these electrical components could allow water intrusion and possible instrument failure in the event of water spray. This is a violation of procedure 105, "Conduct of Maintenance", which requires that when work involves opening of electrical or instrument enclosures, the enclosure be closed following maintenance with the enclosure seal present and in good condition (219/82-18-01).

This is a repetitive item of noncompliance. A similar event was cited in inspection 50-219/82-02 conducted January 3 to March 1, 1982. In response to that citation, the licensee revised procedures to include the requirement to insure that electrical enclosures were properly closed. However, the corrective action taken to date appears to be inadequate in that the violation has recurred.

- 2.2.3 During entry to and exit from radiation controlled areas (RCA), the inspector verified that proper warning signs were posted, personnel entering were wearing proper dosimetry, that personnel and materials leaving were properly monitored for radioactive contamination and that monitoring instruments were functional and in calibration. Posted extended Radiation Work Permits (RWP's) and survey status boards were reviewed to verify that they were current and accurate. The inspector observed activities in the RCA to verify that personnel complied with the requirements of applicable RWP's and that workers were aware of the radiological conditions in the area.

- 2.2.4 Systems and components were examined for evidence of abnormal vibration and fluid leaks. Selected pipe hangers and seismic restraints were visually examined for indications of mechanical interference or fluid leaks.

Valves and components in safety related systems were observed to verify proper system alignment. Accessible major flow path valves in the Core Spray, Containment Spray, Control Rod Drive Hydraulic, and Isolation Condenser systems were examined for proper alignment by direct observation and by observation of remote position indicators. All breakers in the 4160 Volt and selected breakers in the 460 Volt and 125 Vdc electrical systems were examined for proper alignment.

- 2.2.5 Equipment Control procedures were examined for proper implementation by verifying that tags were properly filled out, posted, and removed as required, that jumpers were properly installed and removed, and that equipment control logs and records were complete.

During the conduct of inspection tours, the interiors of cabinets and control panels were examined for the presence of uncontrolled jumpers, lifted leads, or tags. Tags found on systems and components were examined to verify that the component was in the condition specified on the tags and that tags were properly filled out and authorized.

Equipment control logs were examined to verify that jumpering or tagging of system components did not remove redundant safety systems from service or violate technical specification limiting conditions for operation.

On July 28, 1982, the inspector reviewed the cleared switching and tagging sheets filed in a control room notebook. Of the 47 sheets reviewed, the following discrepancies were noted:

- Outage 82-912 tagged out fire protection deluge system 7 and 8 by tagging shut valves V-9-184 and V-9-177 on July 15, 1982. The position after removal of the tags on July 15 was shown on the cleared sheet as "open". The valve lineup checklist in procedure 333, revision 15, June 22, 1982, "Plant Fire Protection System" specifies these valves as "locked open".
- Outage 82-923 tagged out demineralized water pump 1-2 on July 21, 1982 for breaker maintenance by racking out the pump motor breaker and leaving the control switch in "Auto". No position after tag removal was indicated on the switching and tagging sheet when the outage was cleared on July 21.
- Outage 82-924 tagged out Supply Fan (SF) 1-16 for maintenance on July 22, 1982 by racking out the fan motor breaker and by placing the fan control switch in "off/normal". After tag removal on July 22, 1982, the cleared sheet indicated that the breaker was racked-in and the fan control switch was left in "off/normal". The system lineup check list does not address the control switch position, however, the startup section of procedure 331, revision 3, June 18, 1980, "Office Building Heating, Ventilation, and Air Conditioning System" states that for normal system operation, SF 1-16 should be on.
- Outage 82-926 tagged out fire protection deluge system 7 and 8 by tagging shut valves V-9-184 and V-9-177. This outage was initiated on July 22, 1982, and cleared later that day. The cleared switching and tagging sheet had the same discrepancies as outage 82-912 discussed above.

- Outage 82-933 tagged out Standby Gas Treatment System Fan 1-8 for maintenance on July 26, 1982. The outage was cleared later that day, however, the position after tag removal for the fan control switch was noted as "off" on the cleared switching and tagging sheet. The system lineup checklist does not address the control switch position, however, procedure 330, revision 8, March 30, 1982, "Standby Gas Treatment System", specifies that to place the system in standby readiness as required by Technical Specifications, the control switch for fan 1-8 must be in "Auto".
- Outage 82-943 tagged shut a condensate transfer isolation valve, V-11-104, for repairs to valve V-11-17. The outage was cleared on July 27, 1982, but no position after tag removal was specified on the cleared switching and tagging sheet.

In the case of outages 82-912 and 82-926 on the fire protection system, the inspector verified that the valves had in fact been locked open as required, even though improperly noted on the cleared sheet. When outage 82-923 was cleared, the system was properly realigned though no realignment was documented on the cleared sheet. When outage 82-924 was cleared, the fan, SF 1-16, was left off but was later returned to service after testing, although not noted on the cleared sheet. When outage 82-943 was cleared, the stem and disc were removed from V-11-17 and a blind flange was installed on the bonnet. V-11-104 was left closed and tagged with an "Information" tag, but the blind flange was not controlled in accordance with Mechanical Jumper/Blank Control section of procedure 108. After clearing outage 80-933, the system was properly realigned on the following shift during post maintenance surveillance on the Standby Gas Treatment System, although the realignment was not noted on the switching and tagging sheet.

Procedure 108, revision 29, April 26, 1982, "Equipment Control", requires that all equipment affecting nuclear and/or personnel safety shall be in a position controlled by a procedure or shall be tagged in accordance with the requirements of procedure 108. The procedure also requires that prior to removal of tags, the Control Room Operator shall check the "Position After Removal" block and notify the Group Shift Supervisor of any discrepancies between the noted position and the normal alignment position. The "Position After

Removal" shall be that specified by the applicable lineup sheet. The above discrepancies are examples of instances where the requirements of procedure 108 were not met. However, of more significance than these procedural violations, is the impact of these discrepancies on the licensee's ability to control system alignment status. Procedure 201.1, revision 28, July 1, 1982, "Approach to Critical", provides directions for the performance of system lineup checkoffs during precritical checks. It states that if only portions of a system were affected by maintenance, then a lineup verification need not be done since strict adherence to the switching and tagging procedures will insure proper system realignment. It has become common practice for the operations department to determine that a system is properly aligned by verifying that there are no active outages in affect on the system and assuming that clearance of previous outages insured proper system realignment. The inspector questioned this practice in inspection 50-219/81-11 conducted in May 1981 and documented the concern as unresolved item 81-11-04. In response, the licensee revised procedure 108 to require that the "position after tag removal" would be that specified by the appropriate system lineup checkoff. However, as evidenced by the discrepancies noted above, this procedure is not rigorously enforced. Unresolved Item 219/81-11-04 is considered closed by escalation to a violation of Technical Specification 6.8.1 in that procedures are not adequately implemented to assure proper system alignment prior to system startup (219/82-18-02).

- 2.2.6 The inspector examined plant housekeeping conditions including general cleanliness, control of material to prevent fire hazards, maintenance of fire barriers, storage and maintenance of fire fighting equipment, and radiological housekeeping.
- 2.2.7 During daily entry and egress from the protected area, the inspector verified that access controls were in accordance with the security plan and that security posts were properly manned. During facility tours, the inspector verified that protected area gates were locked or guarded and that isolation zones were free of obstructions. The inspector examined vital area access points to verify that they were properly locked or guarded and that access control was in accordance with the security plan.

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- 2.3 Acceptance criteria for the above areas included Technical Specifications, applicable Federal Regulations, Oyster Creek Physical Security Plan, current revisions of appropriate licensee administrative and operating procedures, and inspector judgment.

3. Shift Logs and Operating Records

- 3.1 The inspector reviewed the current revisions of the following plant procedures to determine the licensee established requirements in this area in preparation for review of selected logs and records:

- Procedure 106, Conduct of Operations;
- Procedure 118, Equipment Control; and,
- Procedure 115, Standing Order Control.

The inspector had no questions in this area.

- 3.2 Shift logs and operating records were reviewed to verify that they were properly filled out and signed and had received proper supervisory reviews. The inspector verified that entries involving abnormal conditions provided sufficient details to communicate equipment status and followup actions. Logs were compared to equipment control records to verify that equipment removed from or returned to service was properly noted in operating logs when required. Operating memos and orders were reviewed to insure that they did not conflict with Technical Specification requirements.

- 3.3 The review included the following plant shift logs and operating records as indicated, and discussions with licensee personnel. Reviews were conducted on an intermittent selective basis:

- Control Room and Group Shift Supervisor's Logs, all entries;
- Technical Specification Log;
- Control Room, and Shift Supervisor's Turnover Check Lists;
- Reactor Building and Turbine Building Tour Sheets;
- Equipment Control Logs;
- Standing Orders;
- Operational Memos and Directives.

4. Surveillance Testing

Selected completed surveillance tests were reviewed to verify that the tests were completed as scheduled, test results were reviewed by supervisory staff and forwarded for management review, and that appropriate corrective actions were initiated as required for identified deficiencies. Portions of selected ongoing surveillance activities were observed to verify that approved procedures were used, the work was performed by qualified personnel, that test instrumentation was calibrated, and that redundant systems for components were available for service if required. Activities reviewed included the following:

- Procedure 610.4.012, revision 4, April 30, 1982, Core Spray Pump In-service Test, completed July 8, 1982.
- Procedure 619.3.005, revision 6, March 22, 1982, High Flow in the Main Steam Line Test and Calibration, completed July 13, 1982.
- Procedure 651.4.001, revision 11, March 29, 1982, Standby Gas Treatment System Test, completed July 26, 1982.
- Procedure 609.4.001, revision 8, March 22, 1982, Isolation Condenser Valve Operability Test, completed July 29, 1982.

No unacceptable conditions were identified.

5. Review of Licensee Event Reports (LER's)

The inspector reviewed LER's received in the NRC:R1 and Resident Office to verify that details of the event were clearly reported including the accuracy of the description of cause and adequacy of corrective action. The inspector also determined whether further information was required from the licensee, whether generic implications were involved, and whether the event warranted further on-site followup. The following LER's were reviewed:

<u>LER</u>	<u>EVENT</u>
*82-16	Unmonitored Release of Radioactive Water through the Storm Sewer System
82-21	Containment Atmosphere was not Inerted within 24 hours of Placing the Mode Switch in Run.
82-32	Failed Main Steam Line Radiation Monitor

- 82-33 'A' CRD Pump Failed Due to Extensive Vibration
- *82-34 Release to Environment Due to Failed Gauge Line on Demineralized Water Transfer Pump
- 82-35 Failure of Offgas Isolation Valve
- 82-36 One Core Spray Pump Removed From Service for Maintenance
- *82-37 Procedural Error Defeated Capability to Isolate the Isolation Condenser.
- 82-40 Inoperable Safety Valve Acoustic Monitor
- 82-41 Stack Gas Was Not Continuously Monitored when Sample Pump Tripped.

6. On-Site Licensee Event Followup

For those LER's selected for on-site followup, the inspector verified that reporting requirements of Technical Specifications and Regulatory Guide 1.16 had been met, that appropriate corrective action had been taken, that the event was reviewed by the licensee as required by facility procedures, and that continued operation of the facility was conducted in accordance with Technical Specification limits. The LER's selected on on-site followup are denoted by an asterisk (*) in detail 5. above. The following specific observations were made and discussed with licensee management.

- 6.1 Licensee Event Report 82-16 reported an unmonitored release of radioactively contaminated water to the environment through the storm sewer system. This event was documented in detail in inspection 50-219/82-17 conducted June 2 to July 5, 1982. Since that inspection, the licensee has completed decontamination of the storm sewer piping and begun an extensive program of identifying and marking other possible release paths to the environment to preclude recurrence of this event.
- 6.2 License Event Report 82-34 reported a release of radioactively contaminated water when a gauge nipple ruptured on a demineralized water transfer pump. This event was reviewed in inspection 50-219/82-17 conducted June 2 to July 5, 1982. The inspector had no further questions on this event.
- 6.3 Licensee Event Report 82-37 reported a procedural error which defeated the isolation condenser isolation trip system. During performance of isolation condenser isolation surveillance, the isolation valves are open

and their power supply breakers are opened while testing the trip points of the condensate and steam line high flow sensors. With the breakers open, the valves could not close if an actual isolation signal was initiated. The surveillance procedures require that an operator be stationed at the motor control central in communication with the control room to close the breakers if a need exists to isolate the isolation condenser. During review of this event, the inspector found other instances where safety systems are defeated during testing. For example, opening of valve power supply breakers defeats the containment spray system under test during system automatic actuation testing, but the redundant containment spray system remains operable. The core spray system pump operability test renders the system under test inoperable if done when reactor pressure is below 350 psig. The redundant system remains operable. The inspector questioned the practice of rendering safety systems or entire logic systems inoperable during testing and the practice of using personnel stationed to manually perform operations that would normally be automatic as compensation for inoperability of systems during surveillances. The inspector was unable to confirm the acceptability of these practices. They will remain an unresolved item pending further NRC review (219/82-18-04).

7. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. The unresolved item identified during this inspection is discussed in paragraph 6.3.

8. Exit Interview

At periodic intervals during the course of this inspection, meetings were held with senior facility management to discuss inspection scope and findings. A summary of findings was presented at the conclusion of the inspection.