

October 29, 2001

Mr. Ron J. DeGregorio  
Vice President - Oyster Creek  
AmerGen Energy Company, LLC  
P.O. Box 388  
Forked River, New Jersey 08731

SUBJECT: OYSTER CREEK GENERATING STATION - NRC INTEGRATED INSPECTION  
REPORT 50-219/01-08

Dear Mr. DeGregorio:

On September 30, 2001, the NRC completed an inspection at your Oyster Creek reactor facility. The enclosed report documents the inspection findings which were discussed on October 12, 2001, with Mr. Ernie Harkness and other members of your staff.

This inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

No findings of significance were identified.

Since September 11, 2001, Oyster Creek Generating Station has assumed a heightened level of security based on a series of threat advisories issued by the NRC. Although the NRC is not aware of any specific threat against nuclear facilities, the heightened level of security was recommended for all nuclear power plants and is being maintained due to the uncertainty about the possibility of additional terrorist attacks. The steps recommended by the NRC include increased patrols, augmented security forces and capabilities, additional security posts, heightened coordination with local law enforcement and military authorities, and limited access of personnel and vehicles to the site.

The NRC continues to interact with the Intelligence Community and to communicate information to AmerGen Energy Company, LLC. In addition, the NRC has monitored maintenance and other activities which could relate to the site's security posture.

Mr. Ron J. DeGregorio

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Sincerely,

*/RA/*

John F. Rogge, Chief  
Projects Branch No. 7  
Division of Reactor Projects

Docket No. 50-219  
License No. DPR-16

Enclosure: Inspection Report 50-219/01-08  
Attachment: Supplemental Information

cc w/encl: Amergen Energy Company - Correspondence Control Deck  
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Mr. Ron J. DeGregorio

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| NAME   | L. Dudes/JFR f/ |   | J. Rogge/JFR |   |  |  |  |  |
| DATE   | 10/29/01        |   | 10/29/01     |   |  |  |  |  |

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U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No. 50-219

License No. DPR-16

Report No. 50-219/01-08

Licensee: AmerGen Energy Company, LLC (AmerGen)

Facility: Oyster Creek Generating Station

Location: Forked River, New Jersey

Dates: August 12, 2001 - September 30, 2001

Inspectors: Laura A. Dudes, Senior Resident Inspector  
Steve Dennis, Resident Inspector  
George Morris, Reactor Inspector, 08/13-17/01  
Julian H. Williams, Senior Operations Engineer, 09/10/01  
Aniello Della Greca, Senior Reactor Engineer, 08/20-24/01

Approved By: John F. Rogge, Chief  
Projects Branch 7  
Division of Reactor Projects

## SUMMARY OF FINDINGS

IR 05000219-01-08, on 08/12 - 09/30/01, AmerGen, Oyster Creek Generating Station, resident inspector report.

This inspection was conducted by resident and region based inspectors. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609 "Significance Determination Process" (SDP). Findings for which the SDP does not apply are indicated by "No Color" or by the severity level of the applicable violation. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website at <http://www.nrc.gov/NRR/OVERSIGHT/index.html>.

A. Inspector Identified Findings

No findings of significance were identified.

B. Licensee Identified Violations

No findings of significance were identified.

## Report Details

### Summary of Plant Status:

Oyster Creek began the inspection period at full power. A planned power reduction to sixty percent power occurred on September 8, 2001, in order to perform core maneuvers for reactivity flux shaping. The plant returned to full power on September 10, 2001. A second power reduction occurred on September 16, 2001, when power was reduced to approximately eighty percent power for a control rod shuffle, restoring a control rod that was out for maintenance, back to service. Full power was restored on September 17, 2001.

### **1. REACTOR SAFETY Initiating Events, Mitigating Systems, Barrier Integrity (REACTOR-R)**

#### 1R04 Equipment Alignment

##### 34.5 kilovolt Offsite Power Transmission Lines

##### a. Inspection Scope

Oyster Creek transmits its generated power over the General Public Utilities Energy (GPUE) transmission system. The plant depends on the local 34.5 kilovolt (kV) sub-transmission and distribution systems to serve as the offsite power source for the Oyster Creek plant safety related loads in the event of a plant trip. The inspectors reviewed corrective action process (CAP) documents O2001-1267 and O2001-1271, which identified multiple trips of the 34.5 kV lines feeding the Oyster Creek 34.5 kV substation. Both CAPs documented entry into a technical specification (TS), limiting condition for operation (LCO) 3.7.A.3.b, which requires a shutdown within 30 hours, upon loss of both 34.5 kV lines. The inspectors interviewed Oyster Creek plant operators, responsible system engineers; reviewed the updated final safety analysis report (UFSAR) and TS, to determine the licensing basis history of the 34.5 kV system supply to Oyster Creek. The inspectors performed a partial walkdown of the transmission one-line drawings, electrical rights-of way and selected circuit switches to confirm the system was lined-up to support procedures 2000-ABN-3200.01 and 2000-ABN-3200.36. The inspectors also walked down the control board to determine available indication to aid the operator in identifying problems and restore the off-site power line-up through the GPUE system dispatcher if required.

##### b. Findings

No findings of significance were identified.

#### 1R05 Fire Protection

##### a. Inspection Scope

The inspectors conducted fire protection inspection activities consisting of plant walkdowns, discussions with fire protection personnel, and reviews of procedure 333, "Plant Fire Protection System," and the Oyster Creek Fire Hazards Analysis Report to

verify that the fire program was implemented in accordance with all conditions stated in the facility license. Plant walkdowns included observations of combustible material control, fire detection and suppression equipment availability, and compensatory measures. The inspectors conducted fire protection inspections in the following areas due to the potential to impact mitigating systems:

- ! Redundant Fire Pump and Tank
- ! Turbine Building Basement
- ! Turbine Building Mezzanine
- ! Diesel Driven Fire Pumps
- ! Station Blackout Transformer Deluge System
- ! Lower Cable Spreading Room

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures

a. Inspection Scope

The inspector reviewed the preventive maintenance and surveillance testing programs for electrical cables in three different underground locations. The inspector also reviewed the water intrusion mitigation equipment for one of the underground cable pits. The Oyster Creek Probabilistic Risk Assessment, Section 10, "Internal Flooding Analysis," was reviewed to determine risk significance of internal flooding to the areas in the plant.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

.1 Quarterly Simulator Assessment Observations

a. Inspection Scope

The inspectors observed licensed operator simulator training on September 24, 2001, to verify that the Oyster Creek operator requalification program adequately evaluated how well operators have mastered the training objectives, including training on high-risk operator actions. In addition the inspectors observed the training critique to assess the licensee's effectiveness in evaluating and correcting any observed deficiencies. The inspection activities were performed using NUREG 1021, Rev. 8, "Operator Licensing Examination Standards for Power Reactors," Inspection Procedure Attachment 71111.11, "Licensed Operator Requalification Program," Appendix A "Checklist for Evaluating Facility Testing Material," and Oyster Creek Procedure, 2611-PGD-2612, "Oyster Creek Licensed Operator Requalification Training Program," as acceptance criteria.

b. Findings

No findings of significance were identified.

.2 Requalification Test Results

a. Inspection Scope

A review was conducted of licensee requalification exam results for the biennial testing cycle. The inspection assessed whether pass rates were consistent with the guidance of NUREG-1021, Revision 8, "Operator Licensing Examination Standards for Power Reactors," and NRC Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process (SDP)."

The inspector verified that:

- ! Crew pass rate was greater than 80%. (Pass rate was 85%)
- ! Individual pass rate on the written exam was greater than 80%. (Pass rate was 89%)
- ! Individual pass rate on the walk-through job performance measures (JPMs) was greater than 80%. (Pass rate was 100%)
- ! More than 75% of the individuals passed all portions of the exam. (85% of the individuals passed all portions of the exam)

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation

Maintenance Rule 10 CFR 50.65 Quarterly Review

a. Inspection Scope

The inspectors reviewed the following maintenance rule safety significant systems in a(2) status to verify that: (1) failures of the system and components were properly characterized; (2) the goals and performance criteria for the system were correctly defined; (3) the monitoring of the system performance was acceptable; and (4) identified system problems were properly evaluated and corrected.

- ! Reactor building closed loop cooling water system
- ! Diesel driven fire pumps, start failure documented in CAP 2001-1344



b. Findings

No findings of significance were identified

1R13 Maintenance Risk Assessment and Emergent Work Evaluation

.1 Risk Management during the Main Steam Line Low Pressure Relay Replacement

a. Inspection Scope

The inspector reviewed the online maintenance risk assessment associated with the replacement of a main steam low pressure reactor protection system relay. The inspector reviewed procedure 2000-ADM-3022.01, "Work Management and On-Line Risk Management & Assessment," Attachment 1, to verify the appropriate work restrictions associated with components in RPS system were in place while the reactor protection system relay for RPS system II was being replaced.

b. Findings

No findings of significance were identified.

.2 Emergency Service Water Keep Fill System Piping Replacement

a. Inspection Scope

The inspector reviewed the risk management actions taken during the replacement of the emergency service water (ESW) keep fill line on September 27, 2001. The inspector used guidelines outlined in procedure 2000-ADM-3022.01, "Work Management and On-Line Risk Management & Assessment," to identify specific actions to be taken during the piping replacement. Specifically, the inspector verified that one of the ESW System I pumps was running, maintaining the piping filled and vented at all times.

b. Findings

No findings of significance were identified.

.3 Emergency Diesel Generator #2 Overspeed Limit Switch Adjustment

a. Inspection Scope

The inspector performed walkdowns of the #1 Emergency diesel generator (EDG) and the safety-related equipment associated with it to assure that all equipment was aligned to perform its safety function while the #2 EDG was out-of-service for emergent maintenance. The inspector used the EDG and core spray system operating procedures to verify that the equipment was aligned and ready to perform its safety function.

b. Findings

No findings of significance were identified.

#### 1R15 Operability Evaluations

##### a. Inspection Scope

The inspectors reviewed operability evaluations associated with the following plant equipment deficiencies to verify that all equipment was capable of performing its design basis function and in order to determine that operability justifications were performed in accordance with procedures OC-2, "Operability Review and Analysis," and 2000-ADM-7216.01, "Corrective Action Process." In addition, where a component was determined to be inoperable, the inspectors verified the TS LCO implications were properly addressed.

- ! ESW Pump 52A discharge piping elbow corrosion (CAP 2001-1342).
- ! ESW System I, pin hole leaks on keep fill line (CAP 2001-1437). Reviewed against system procedure IST acceptance criteria and NRC Generic Letter 90-05, "Guidance for Performing Temporary Non-Code Repair of ASME Code Class 1,2,3 Piping."
- ! "B" Control Room HVAC system duct heater failure (CAP 2001-1445).

##### b. Findings

No findings of significance were identified.

#### 1R17 Permanent Plant Modifications

##### .1 Reactor Protection System (RPS)1A Alternate Trip Signal

##### a. Inspection Scope

The inspectors reviewed engineering change request (ECR) No. OC-01-00552, Rev. 0, dated August 18, 2001. The ECR was issued to develop a design modification that would permanently correct an intermittent closure signal received from the 10% closure switch associated with main steam isolation valve NS03A. Specifically, the valve closure switch occasionally closed, without apparent cause, initiating a half scram. The modification obtained a valve closure signal from the 5% closure switch through an auxiliary relay. The review included an evaluation of the CAP items written in conjunction with the switch problems, troubleshooting activities, applicable revised drawings, and the safety evaluation in accordance with 10 CFR 50.59. The inspectors also conducted appropriate interviews of engineering and management personnel.

##### b. Findings

No findings of significance were identified.

##### 2. Power Supply Modification

##### a. Inspection Scope

The power circuit for the new radwaste air compressor had been fed from a unit sub-station. The power supply cable had faulted and was scheduled to be replaced with a smaller circuit and cable from a downstream motor control center under modification OC-MD-H947-001. The inspectors reviewed the sizing of the cable and the effect of the load on the new power supply to assure that the modification met the current electrical design basis standards.

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing (PMT)

a. Inspection Scope

The inspector reviewed and observed portions of the PMT associated with the following maintenance activities because of their function as mitigating systems and/or their potential role in increasing plant transient frequency. The inspectors reviewed the PMT documents to verify that they were in accordance with the licensee's procedures and that the equipment was restored to an operable state.

- ! 'A' CRD Pump bearing oil change and breaker maintenance (WO R0808483), surveillance test 617.4.001, "CRD Pump Operability Test," performed as the PMT.
- ! Main Steam Line Low Pressure Switch, RE23D Pressure switch replacement (WO C2001343), performed surveillance 619.3.008, "Low Pressure Main Steam Line Functional and Calibration Test while Operating," on RE23D as PMT.
- ! Emergency Diesel Generator #2, Over Speed Trip Limit Switch Replacement (WO C2001411). Performed 636.4.013, "Emergency Diesel Generator Load Test," as PMT.
- ! ESW system 2 keepfill line check valve V-3-131 replacement (WO R0805226). Operations initially performed an inservice leak test for operability. Based upon the inspectors review of the maintenance work package, which specified an additional PMT (WO R0805226 activity 6), operations performed surveillance test 607.4.015, "Containment Spray and ESW System #2 operability test."

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspector observed pre-test briefings and portions of the surveillance performance for procedural adherence, and verified that the resulting data associated with the test met the requirements of technical specifications. The inspector also reviewed the results of past performances of the surveillance test (ST) with the system engineer to verify that degraded or non-conforming conditions were identified and corrected. The following STs were observed:

- ! Procedure 619.3.001, "Turbine Load Rejection Scram Test at > 45% Power."
- ! Procedure 609.3.113, "Isolation Condenser Automatic Actuation Bistable Calibration and Test."
- ! Procedure 619.3.011, "Scram Discharge Instrument Volume (SDIV) Digital Level Calibration and Test, and SDIV Valve exercise and IST."
- ! 610.3.115, "Core Spray System 1 Instrument Channel and Level Bistable Calibration and Test, and System Operability."

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

.1 Bypass Jumper on Recirculation Pump Loop B Temperature Interlock

a. Inspection Scope

The inspectors reviewed temporary modification document EJ 2001-027 and Safety Evaluation SE 000223-010, "Temporary Modification for Placing a bypass jumper on recirculation pump Loop B Temperature Interlock." The modification was prepared to bypass a malfunctioning thermocouple located inside containment. The review included a verification that the change did not adversely impact the design functions of the system and was performed in accordance with licensee procedure 108.8, "Temporary Modification Control." The inspectors reviewed applicable documents and conducted appropriate personnel interviews.

b. Findings

No findings of significance were identified.

#### 4. OTHER ACTIVITIES (OA)

##### 4OA1 Performance Indicator Verification

###### .1 Reactor Coolant System Specific Activity

###### a. Inspection Scope

The inspectors reviewed performance indicator (PI) data from the 3rd quarter of 2000 through the 2nd quarter of 2001, for "Reactor Coolant Specific Activity" to verify its accuracy. The inspectors used Nuclear Energy Institute (NEI) 99-02, Revision 0, "Regulatory Assessment Performance Indicator Guideline," as guidance, observed a chemistry technician obtain and analyze a sample, and interviewed licensee personnel responsible for compiling and trending the data. The inspectors also verified that the monthly sample analyses maximum value for dose equivalent iodine (DEI) were below the TS limitation.

###### b. Findings

No findings of significance were identified.

###### .2 Reactor Coolant System Leakage

###### a. Inspection Scope

The inspectors reviewed performance indicator (PI) data from the 2nd quarter of 2000 through the 2nd quarter of 2001, for "Reactor Coolant System Leakage" to verify its accuracy. The inspectors used Nuclear Energy Institute (NEI) 99-02, Revision 0, "Regulatory Assessment Performance Indicator Guideline," as guidance. The inspector also reviewed the calculated leak rates as defined in procedure 106, "Conduct of Operations," and verified that operators were logging the appropriate leak rates as required by TSs.

###### b. Findings

No findings of significance were identified.

##### 4OA3 Event Follow-up

###### Problem Identification and Resolution

- a. (Closed) Unresolved Item 05000219/2001-005-01: Emergency Diesel Generator (EDG) Fuel Oil Supply. TS Section 3.7.C requires a minimum volume of 14000 gallons of diesel fuel oil in the 15000 gallon fuel oil storage tank. The safety system design performance and capability inspection team identified that Calculation C-1302-862-5360-002 was inadequate in that it had assumed operation of only one EDG following a loss of coolant accident concurrent with a loss of offsite power. As a result, the calculation did not

support one of the bases for the TS Section 3.7.C requirements. During the current review, the inspectors determined that the licensee had revised the calculation, but had assumed concurrent operation of the EDGs for only eight hours. After the eight hours, to conserve fuel, the licensee intended to shut down one of the EDGs, but an evaluation of this action had not been completed. Pursuant to additional discussions with the inspectors, the licensee issued CAP item No. O2001-1307, in which they correctly addressed the issue and identified required actions. Because the fuel inventory was always maintained above the TS limit, no violation of NRC requirements occurred. This item is closed.

#### 40A6 Meetings, including Exit

##### Exit Meeting Summary

On October 12, 2001, the resident inspectors presented the inspection results to Mr. Ernie Harkness and other members of licensee management. The licensee acknowledged the findings presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

**ATTACHMENT**

**SUPPLEMENTAL INFORMATION**

a. Key Points of Contact

V. Aggarwal, Director, Engineering  
R. DeGregorio, Vice President  
E. Harkness, Plant Manager  
R. Hillman, Manager, Chemistry & Radwaste  
J. Magee, Director, Maintenance  
M. Massaro, Director, Work Management  
D. McMillan, Director, Training  
M. Newcomer, Senior Manager, Design  
D. Slear, Manager, Regulatory Affairs  
C. Wilson, Senior Manager, Operations

b. List of Items Opened, Closed, and Discussed

Closed

|                 |     |  |
|-----------------|-----|--|
| 50-219/01-05-01 | URI | Emergency Diesel Generator (EDG) Fuel Oil Supply<br>(Section 4OA3) |
|-----------------|-----|--|

c. List of Acronyms

|         |   |
|---------|---|
| ADAMS   | Agencywide Documents Access and Management System |
| AmerGen | AmerGen Energy Company, LLC                       |
| ASME    | American Society of Mechanical Engineers          |
| CAP     | Corrective Action Process                         |
| CFR     | Code of Federal Regulations                       |
| CRD     | Control Rod Drive                                 |
| DEI     | Dose Equivalent Iodine                            |
| ECR     | Engineering Change Request                        |
| EDG     | Emergency Diesel Generator                        |
| ESW     | Emergency Service Water                           |
| GPUE    | GPU Energy  |
| HVAC    | Heating, Ventilation and Air Conditioning         |
| IST     | Inservice Test                                    |
| JPMs    | Job Performance Measures                          |
| kV      | Kilovolt  |
| LCO     | Limiting Condition for Operation                  |
| NEI     | Nuclear Energy Institute                          |
| NRC     | Nuclear Regulatory Commission                     |
| PI      | Performance Indicator                             |
| PMT     | Post Maintenance Test                             |
| SDIV    | Scram Discharge Instrument Volume                 |
| SDP     | Significance Determination Process                |
| SE      | Safety Evaluation                                 |
| ST      | Surveillance Test                                 |
| TS      | Technical Specification                           |
| UFSAR   | Updated Final Safety Analysis Report              |
| URI     | Unresolved Item                                   |