

U.S. NUCLEAR REGULATORY COMMISSION  
REGION I

Report No. 50-219/88-06

Docket No. 50-219

License No. DPR-16 Priority -- Category C

Licensee: GPU Nuclear Corporation  
P. O. Box 388  
Forked River, New Jersey 08731-0388

Facility Name: Oyster Creek Nuclear Generating Station

Inspection At: Forked River, New Jersey

Inspection Conducted: February 22-26, 1988

Inspectors:

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Specialist, EPS, FRSSB, DRSS

April 27, 1988  
date

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4/29/88  
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Inspection Summary: Inspection on February 22-26, 1988 (Report No. 50-219/88-06)

Areas Inspected: Routine, announced inspection of emergency preparedness activities including: Emergency Plans and Implementing Procedures; Emergency Facilities, Equipment, Instrumentation and Supplies; Organization and Management Control; Independent Reviews/Audits; application of NRC Inspection and Enforcement Division Information Notices Nos. 83-28 and 84-80; Emergency Operation Procedures - Emergency Plan Implementing Procedure interface; software for backup dose projections program; Plant Engineer Training; Emergency Preparedness Training; operation of the Parsippany Technical Functions Center; and Security-Emergency Preparedness Interface.

Results: One violation was identified, (failure to evaluate for adequacy the State interface) two outstanding, non exercise-related inspector follow-up items were closed, and five were opened.

## DETAILS

### 1.0 Persons Contacted

- \*J. Barton, Deputy Director - Oyster Creek
- G. Bond, Director, Systems Engineering, Technical Functions Division, GPUNC - Parsippany
- \*J. Bontempo, Lead Emergency Planner, GPUNC - Oyster Creek
- P. Clark, President, GPUNC
- R. Coe, Director, Training and Education - GPUNC
- G. Cropper, Senior Reactor Operator - Oyster Creek
- E. Demonch, Group Shift Supervisor - Oyster Creek
- \*B. DeMerchant, Licensing Engineer, GPUNC - Oyster Creek
- \*M. Douches, Lead Monitor Operations, Quality Assurance
- R. Ewart, Security Lieutenant, GPUNC - Oyster Creek
- \*P. Fiedler, Vice President and Director, Oyster Creek
- S. Kempf, Jr., Emergency Offsite Planner, GPUNC - Oyster Creek
- J. Kowalski, Site Licensing Manager, GPUNC - Oyster Creek
- H. Lapp, Manager, Plant Training, Training and Education Division, GPUNC - Oyster Creek
- A. Lindberg, Manager, Southern District, JCP&L Co.
- \*D. MacCarlane, Manager, Site Audits, GPUNC - Oyster Creek
- S. Parsons, Manager, Corporate Training - Parsippany
- S. Polon, Manager, Public Information, GPUNC - Oyster Creek
- A. Rone, Director, Plant Engineering, Oyster Creek
- M. Roche, Vice President and Director, Quality and Radiation Controls - GPUNC
- J. Rogers, Licensing, GPUNC - Oyster Creek
- C. Ruth, Operations, Quality Assurance
- J. Sevelle, Security Sergeant, GPUNC - Oyster Creek
- \*J. Sullivan, Director, Plant Operations, Oyster Creek
- \*R. Sullivan, Emergency Preparedness Manager, GPUNC - Oyster Creek
- S. Surgeoner, Manager, Public Relations, GPUNC - Oyster Creek
- \*M. Slobodien, Director, Radiological Controls, GPUNC - Oyster Creek
- \*P. Thompson, QA Audits, GPUNC - Oyster Creek
- \*I. Wazzan, Emergency Planner, GPUNC - Oyster Creek
- \*J. Williams, Manager, Support Program Training, Plant Training, Training and Education Department, GPUNC - Oyster Creek
- T. Wilson, Vice President and Director, Technical Functions - Parsippany
- \*K. Wolf, Manager, Radiological Engineering, GPUNC - Oyster Creek

The inspectors also observed the actions of, and interviewed, other licensee personnel.

\*Denotes those present at the exit interview.

## 2.0 Operational Status of the Emergency Preparedness Program

### 2.1 Corporate Emergency Plan

The GPU Nuclear Corporation Plan for Three Mile Island and Oyster Creek Nuclear Station has been revised (Revision 1) and submitted to the NRC. The equipment lists in those sections of Revision 1 relating to Emergency Response Facilities and Equipment at Oyster Creek were checked against facilities, equipment, communications systems and monitors. The facilities, equipment, communications and monitors were determined by the inspector to be in agreement with the description. Comments on the Revision are being provided separately.

### 2.2 Emergency Plan Implementing Procedures (EPIP)

- a. EPIPs at Emergency Response Facilities (ERFs) were verified to be current and appropriately reviewed. A review of the EPIPs indicates changes made since the last inspection have not affected the overall state of emergency preparedness. EPIPs were distributed and reviewed in accordance with GPU procedures.

Based on this review, this area is acceptable.

### 2.3 Emergency Facilities, Equipment, Instrumentation and Supplies

EPIPs, equipment, instruments, communications equipment and supplies stored or maintained in the Emergency Command Center, Technical Support Center, Operations Support Center, Emergency Operations Facility, Environmental Assessment Command Center and the off-site monitoring team assembly area were reviewed. Equipment and supplies matched inventory lists, EPIPs were current, and with one exception, which was promptly corrected, instruments were within their calibration period and operable.

Based upon the above review, this area is acceptable.

### 2.3 Organization and Management Control

- a. GPU Nuclear Corporation (GPUNC) is one of the five subsidiaries of the GPU System. GPUNC is the Oyster Creek operator. The site organizational structure is divided between line (operations) and staff (support). Operations reports to the Vice President and Director - Oyster Creek, while support units report to GPUNC headquarters in Parsippany, NJ. Of the sixteen units identified at Oyster Creek by the inspectors, seven are operations related reporting to the Vice-President Oyster Creek, while nine report to headquarters. Seven of the nine support units are involved in site Emergency Preparedness, as are a

large percentage of the Initial and Support Response Organization staffs. Included in this group are: the Emergency Preparedness Program; Training and Education; Radiation Controls; Communication (including Public Information); Security; Site Audits; and Environmental Controls. A review of the current call-out roster indicated that five of the six qualified Emergency Directors and Emergency Support Directors report to Operations.

- b. Effective June 1, 1987, Emergency Preparedness was transferred from the Nuclear Assurance Division of GPUNC to the Quality and Radiation Control Division (Q&RC), headed by the Vice President and Director for Q&RC. However, the Corporate Manager for Emergency Preparedness no longer reports directly to the Vice President, Q&RC, but rather to the Director, Emergency Preparedness and Environment, Q&RC. This reorganization eliminates direct contact by the Corporate Emergency Preparedness Manager with a Corporate Officer and alters the status of the site Emergency Preparedness manager to that of fifth level manager. Consultants responsible for off-site planning have been replaced by an experienced emergency responder with an active history in Ocean County. An Emergency Preparedness Program vacancy has been filled by a nuclear engineer.
- c. The inspectors interviewed the President of GPUNC and two Vice Presidents. The President estimated from five to ten percent of his time is devoted to Emergency Preparedness. He maintains qualification as an Emergency Support Director. The GPUNC President displayed a strong working knowledge of Emergency Preparedness issues, required action(s) and additionally, tracks corrective actions. He also maintains an on-going high level interface with Commonwealth of Pennsylvania and State of New Jersey officials. The Vice President and Director Quality Radiation Control tracks Emergency Preparedness on a daily basis and conducts monthly reviews. He showed extensive current knowledge of Emergency Preparedness operations and problems.

The inspectors concluded that corporate restructuring has not adversely affected the status of emergency preparedness readiness. Corporate officers are active in Emergency Preparedness, are aware of and track problems and issues.

Based upon the above review, this item is acceptable.

#### 2.4 Training

- a. Emergency Preparedness training is provided, in selected areas by the Training and Education Department (TED). TED staff numbers about 100 GPU system-wide with 49 assigned to Oyster Creek. Two

hundred and eighty (280) Oyster Creek site personnel are currently qualified for one or more of the 58 Emergency Response Organization (ERO) staff positions. This figure includes: members of the On-Shift Initial Response Organizations (IROs) who staff on-site Emergency Response Facilities; and members of the Emergency Support Organization (who staff the Emergency Operations Facility and the Parsippany Technical Functions Center). The Corporate Manager for Emergency Preparedness trains and requalifies Corporate officers. Plant Training has completed a job task analysis for ERO positions and maintains a hard copy and computerized database of training records. The database is currently undergoing modification which involves a transition between two systems and GPU's Reading, Pennsylvania computer staff. As a result, the inspectors noted inconsistencies and encountered difficulty in tracking requalifications. A check of hard copy records verified the accuracy of training data. Plant Training may acquire the training record tracking software of another licensee.

- b. Technical staff and management training is provided in ten weeks of training over a two-year period on a modular basis. The course titles and sequences were checked by the inspectors and discussed with the TED staff. This sequence does not include training for engineers assigned to the Technical Support Center (TSC) and Parsippany Technical Functions Center (PTFC) in severe accident analysis. The Plant Engineering Department provides four hours of training in Core Damage Assessment (CDA). Various GPU staff members, when questioned by the inspectors about the adequacy of training in this area, responded that the engineer's academic training is adequate and the Emergency Operations Procedures (EOPs) will take an operator from an entry event to core melt. TSC engineers are trained in TSC operations. Core engineers in the TSC receive the CDA training.
- c. The GPU Corporate Emergency Plan (1000-PLN-1300.01, Rev 00) states in Section 8.1.2 that one of the purposes of drills is verification of the emergency preparedness of all personnel. Oyster Creek Administrative Procedure 9473-ADM-1300.01, Rev 5, Section 5.3.5 states that drill attendance should be recorded. After the inspectors noted the fact drill attendance was not recorded, the licensee's staff agreed to record such attendance in the future. In addition, the inspectors noted one senior ERO manager had not been drilled in a year. The licensee agreed to schedule this individual for drill(s).
- d. The Plant Training staff assists in drill and exercise scenario development, observes drills and exercises and participates in debriefings.
- e. A check of EP training written requests and follow-up verbal requests for rescheduling indicated a large number of repeated

requests, rescheduling and EP training sessions. Attitude, quality of training, perception of the importance of EP Training and priorities were discussed as possible causes. A definitive cause was not identified.

- f. Senior operators receive Emergency Director training. When on the simulator and responding to an incident scenario, operators are evaluated as to their ability to go from the Emergency Operations Procedures to event classification, emergency notifications and call-in of the Initial Response Organization.

The inspectors determined that adequate resources have been committed to Emergency Preparedness training. Lessons plans are current. Hard copy training records are adequate, but the computerized data base is not yet fully functional. Training of engineers assigned to the TSC is limited to CDA, an unidentified cause persists resulting in repeated training requests, drill attendance records are not maintained for key staff members, reactor operators are trained in event classification and emergency communications, and 280 staff members are qualified in Emergency Preparedness.

With the exception of improvements to the computerized training record system, repeated EP training scheduling, limited TSC engineer training, and drill attendance records the inspectors concluded an adequate training program is in place. The exceptions are inspector follow-up items (50-219/88-06-01) subject to future inspections.

## 2.5 Independent Reviews/Audits

The inspector interviewed licensee personnel and reviewed Quality Assurance (QA) audit S-OC-87-01 and determined that the internal review/audit of the emergency preparedness program had been done within 12 calendar months. It was ascertained that management does review and support QA determinations and that commitments are made and corrective actions are timely and technically adequate. With regard to QA audit scope and depth, it was determined that audit report S-OC-87-01 did address the offsite interface. However, only the local government interface was addressed and the State interface was not evaluated.

10 CFR 50.54(t) requires licensees to review their emergency preparedness plan at least once every 12 months. This review shall include an evaluation for adequacy of interfaces with State and Local governments. Contrary to this requirement, an evaluation for adequacy of the State interface was not audited. This is a violation (50-219/88-06-02).

Exercise/drill reports and audit records were reviewed; emergency preparedness personnel were interviewed and it was determined that the licensee has an adequate corrective action system for deficiencies and weaknesses identified during drills and exercises.

Interviews with corporate management indicates that management does review and support, as well as follow through on resolution and correction of deficiencies and weaknesses in a timely manner.

Based on these observations, the inspectors concluded that with the exception of the State interface adequacy evaluation, the requirements of 10 CFR 50.54(t) were met.

## 2.6 Security/Emergency Preparedness Interface

The inspector interviewed both Security and Operations licensee personnel and reviewed procedures to determine if a security/emergency preparedness interface is present. NUREG/CR-4093, "Safety/Safeguards Interactions During Safety-Related Emergencies at Nuclear Power Reactor Facilities," was used as a basis for this portion of the inspection. It was determined that a triggering mechanism to alert both operators and security personnel to sabotage is in place. Guidelines are present for the security of other safety systems, and procedures specifying counter measures to consider have been developed.

It was noted that radiological protection equipment is not available to security forces at the main gate. The licensee stated that should a radiological emergency occur and affect that area, these guards would be evacuated. Security forces sent to assist in the evacuation of on-site personnel also would not have radiological equipment if a radiological emergency were to occur at their post. Another area of concern is there appears to be no rapid way for these guards to put on protective clothing should their search pattern require them to enter into a radiation area. Finally, the Main and North gates are not shielded or provided with filter ventilation for protection against radiation. The Central and Secondary Alarm Center are located within the Main Gate building. In the event of an evacuation of this facility, an alternate access point is needed. There is no provision for such an alternate.

The licensee is reviewing this area for possible improvements.

This will be reviewed during a future inspection. (50-219/88-06-03)

## 2.7 Public Information Program

The inspector reviewed "Emergency Information for Neighbors of the Oyster Creek Nuclear Generation Station and for Visitors in Ocean County" dated April, 1987, and determined that this brochure was in the process of being updated and distributed to the public. It was

further determined, through interviews, that the material had been coordinated with and concurred in by offsite authorities. Additionally, FEMA had acknowledged receipt of the brochure from the State of New Jersey. It was verified that the local telephone directory and the brochure contain the requisite information required in 10 CFR 50.47(b)(7), Appendix E, Part IV.D.2 and NUREG 0654, Planning Standard G. Signs which provide emergency information for transients are posted along routes which they would use. A phone number is provided in both the brochure and phone directory for the public to acquire additional information.

In addition to providing an information brochure to the public, the licensee has provided, quarterly, a news letter entitled "Oyster Creek Neighborhood Update" to the public which provides a reinforcement of previously provided emergency preparedness information to include Offsite emergency preparedness. It also provides additional information on plant status as well as human interest stories.

Based upon the above review, this area is acceptable.

## 2.9 Emergency Operating Procedures (EOPs)

The EOPs were upgraded and became effective January 1988. They are in flow chart format. One set will be laminated and kept in the control room. There are four, color coded sets covering the reactor vessel; primary containment; secondary containment (the reactor building); and release to the environment. The EOPs contain "prompts" referring operators to the appropriate emergency classification in Exhibit 1 to EPIP 9430-IMP-1300.01, Rev. 4, "Classification of Emergency Conditions." Reactor operators were trained and knowledgeable in EOP-Emergency Plan Implementing Procedure interface.

Based on the above, this area is acceptable.

## 2.10 Dosimetry

- a. The inspectors reviewed the Oyster Creek Emergency Dose Manual (9300-ADM-4010.3, Rev. 0) and discussed calculation of projected doses and dose commitments with Radiation Control staff. Calculations are made using one of three computer systems: MIDAS; the Radiological Assessment Computer Program (called RAC) and the Back-up Dosimetry Program (BUD). The last two programs are run on personal computers and may be used in any Emergency Response Facility as long as input data is available. A MIDAS intelligent terminal is available only in the Emergency Operations Facility when the Environmental Accident Assessment Center is functional. Projected thyroid dose commitment calculations requires measured iodine release rates or, in absence of these, a partition of a gross release rate into noble gas and iodine components using measured or default iodine to noble gas ratios.



At Oyster Creek the stack release is measured and reported as a count rate which is converted to a gross activity release rate using a calibration factor. Until a sample of the release can be obtained and analyzed, a conservative iodine to noble gas ratio would be used following procedures in the Emergency Dose Manual resulting in over-estimates of projected thyroid dose commitment.

- b. The actual iodine to noble gas ratio can be obtained from analysis of silver zeolite cartridge located in a sampling point for the stack. This point is within a room at the stacks base and the collection point is a component of the Radioactive Gas Effluent Monitoring System (RAGEMS). Under severe accident conditions the dose rate in the RAGEMS room might preclude entry or restrict access time to a value which might preclude successful sample collection assuming the Emergency Director would authorize an informed volunteer to collect the sample by approving an emergency worker dose limit. GPU recognizes these problems and has completed a time and motion study with respect to collection of a RAGEMS sample, posting administrative limits for the RAGEMS room and providing RADCON support for the Chemistry Technician collecting the sample.
- c. The NRC has addressed the problem of over-estimating calculated doses in IE Information Notice 85-52, noting that such values could lead to confusion, delay protective action or lead to unnecessary protective action. The licensee's Radiation Control staff acknowledged the problem and that stated steps would be taken to correct the default rates to a realistic value, but no timetable was given for completing the corrective action.

This will be reviewed during a future inspection.  
(50-219/88-06-04)

### 2.11 Field Sampling

The volume collected for iodine analysis by on and off-site monitoring teams was reviewed by the inspectors with the staff of Environmental Controls. It was agreed, that a volume of one cubic foot was sufficient if the sample were to be analyzed by a Ge-Li or NaI detector. However, such agreement could not be reached for off-site sampling when a field analysis using a Distenfeld Collector and a G-M tube. The licensee agreed to review this matter and compute the minimum sample volume needed for a specified statistical performance specification. The licensee acknowledged collection of an excessive sample was not consistent with dose minimization practices and reduces the time available for field teams to undertake additional field measurements.

This item will be subject to future inspection. (50-219/88-06-05)

### 3.0 Exit Meeting

The inspectors met with licensee personnel listed in Section 1 at the conclusion of the inspection. The licensee was informed that one violation was identified. The inspectors also discussed areas for improvement. The licensee acknowledged these finding and agreed to evaluate them, institute corrective action as necessary and include needed corrections in the Consolidated Plan and Implementing Procedures. At no time during the course of the inspection did the inspectors give the licensee written material.