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U.S. ATOMIC ENERGY COMMISSION

DIRECTORATE OF REGULATORY OPERATIONS

REGION I

RO Inspection Report No: 50-219/75-01 Docket No: 50-219

Licensee: Jersey Central Power and Light Company License No: DPR-16

Madison Avenue at Punch Bowl Road Priority:

Morristown, New Jersey 07960 Category: C

Location: Oyster Creek, Forked River, New Jersey Safeguards Group:

Type of Licensee: BWR (GE) 1930 MW(t)

Type of Inspection: Special, Announced

Dates of Inspection: January 14-15, 17 and 20, 1975

Dates of Previous Inspection: November 19-22, 1974

Reporting Inspector: Edward G. Greenman 2/28/75
E. G. Greenman, Reactor Inspector Date

Accompanying Inspectors: D. L. Caphton 2/28/75
D. L. Caphton, Senior Reactor Inspector Date

Date

Date

Date

Date

Other Accompanying Personnel: None

Date

Reviewed By: D. L. Caphton 2/28/75
D. L. Caphton, Senior Reactor Inspector Date
IE:I Operations Branch

B1878

## SUMMARY OF FINDINGS

### Enforcement Action

A. Infraction

1. Contrary to 10 CFR 50.59(c) and Supplement 2 to Amendment No. 68 - Application For A Full Term License dated December 12, 1972, no change was requested or authorized to the commitment regarding correction of exceptions concerning: (a) capacity plate for the auxiliary five (5) ton hook, (b) cab ladder and railing requirements and (c) crane warning device to signal crane movement. (Details 5.i)

B. Deficiencies

None

### Licensee Action on Previously Identified Enforcement Items

Not inspected

### Design Changes

Not inspected

### Unusual Occurrences

None

### Other Significant Findings

A. Current Findings

1. Acceptable Areas

a. Plant Logs and Records

An audit of plant logs and records was conducted related to spent fuel shipment. (Details 3 and 5)

b. Spent Fuel Handling Operations

Spent fuel shipments are in progress from Oyster Creek to NFS, West Valley, N.Y. Initial shipment was made January 18, 1974. (Details 5)

c. Fuel Shipment and Survey Records

An audit was conducted of fuel shipment and Health Physics survey and smear records. (Details 6 and 7)

d. Chromate Water Removal

No chromated water now remains in temporary tank car storage on site. Five (5) tank cars have been flushed and two (2) have been released and removed from the site. (Details 8.c)

e. Bank Stabilization Program

Grading work is continuing along the length of the discharge canal. (Details 8.d)

B. Status of Previously Reported Unresolved Items
Shift Manning Requirements (IE Inspection 74-07)

Licensee has assigned Radiation Technicians for operating shifts. Item is considered closed. (Details 2)

Management Interview

An exit interview was conducted on January 20, 1975 with Mr. J. T. Carroll, Station Superintendent. Inspection results were discussed further with Mr. D. A. Ross, Manager, Nuclear Generating Stations by telephone on February 19, 1975. Items discussed are summarized below:

A. General

The inspector summarized the scope of the special announced inspection relative to review of records, procedures and handling operations involving spent fuel shipments from the Oyster Creek site.

B. Personnel Safety - Cask Drop Protection System (CDPS) Area

The inspector stated that he had observed inconsistencies in wearing of life preservers by personnel in the spent fuel pool area and noted that no hand rails were installed in the area of the CDPS for Safety.

A licensee representative acknowledged the inspectors remarks, and stated that actions would be implemented to install an appropriate barrier. (Details 8.b)

C. Fuel Cask Handling Procedure

The inspector stated his position that the referenced procedure should be reviewed and refined as necessary following initial shipment. Location of stop removal in the procedure was used as an example of the inspector's concern.

A licensee representative stated that plans included a review and critique conducted by responsible personnel involved in handling operations. (Details 4 and 5h)

D. Enforcement Action

The Infraction listed under Enforcement Action above was identified as an apparent item of noncompliance. (Details 5.i)

## DETAILS

1. Persons Contacted

Mr. D. A. Ross, Manager, Nuclear Generating Stations
Mr. J. T. Carroll, Station Superintendent
Mr. D. L. Reeves, Chief Engineer
Mr. J. P. Maloney, Operations Supervisor
Mr. R. F. Swift, Maintenance Engineer
Mr. E. I. Riggle, Maintenance Supervisor
Mr. E. D. Skalsky, Radiation Protection Supervisor
Mr. R. L. Stoudnour, Staff Engineer
Mr. F. H. Rodies, Engineering Assistant
Mr. G. Hicks, Shift Foreman
Mr. D. Arbach, Radiation Protection Foreman
Mr. D. Kaulback, Radiation Protection Foreman
Mr. F. Anderson, Mechanical Maintenance Foreman
Mr. T. L. Johnson, Instrument and Electrical Foreman - Nuclear
Mr. B. Mays, Operating Foreman

2. Administration and Organization

Shift Staffing - Radiation Protection

The inspector was appraised that effective January 5, 1975, Radiation Technicians were assigned by the licensee, to operating shifts (one per shift). Implementation of this change meets the Regulatory staff position on shift manning for nuclear power plants.* This item is considered resolved.

3. Logs and Records

The following logs and records were reviewed without comment except as noted elsewhere within this report:

a. Refueling Level Access Log - January 17-20, 1975
b. Refueling Level Exposure Log - January 17-20, 1975
c. Spent Fuel Cask Handling Procedure 219 Revision 0, dated January 14, 1975.

*IE Inspection Report 50-219/74-07, Details 3a.

4. Procedures

Fuel Handling

The inspector reviewed Plant Procedure 219, Rev. 0 dated January 14, 1975 - NFS 4 SPENT FUEL CASK HANDLING PROCEDURE. The inspector verified that procedural changes required during the course of initial procedural usage were completed in accordance with Technical Specification requirements. This procedure was discussed at the exit interview with respect to additional PORC review and refinement subsequent to initial shipment. This item will be reinspected during a future inspection.

5. Fuel Handling

a. General

The inspector observed preparations for initial spent fuel shipments. The licensee was using the NFS 4 shipping cask. Shipments were scheduled for storage at Nuclear Fuel Services, Inc., West Valley, N. Y. The carrier was TriState Motors. The initial shipment of spent fuel bundles (two) designated JC 236 and JC 332 departed the Oyster Creek site on January 18, 1975. The NFS cask initially arrived on site January 13, 1975. According to licensee representatives, arrangements have been made to transfer approximately 240 fuel bundles on a long term basis. The licensee plans to terminate operations for receipt of new fuel, and during the annual refueling outage scheduled to begin March 30, 1975.

b. Spent Fuel Pool Status

Prior to initiating spent fuel shipments the spent fuel pit contained 308 fuel bundles. Total fuel pool capacity is 840 bundles. Completion of licensee shipments will result in full core off-loading capability. This item is considered open pending reestablishment of total core off-loading capability by the licensee.

c. Crane Testing Requirements

The inspector reviewed the crane load test record for the facility 100 ton crane. Records indicated that testing was conducted on January 3, 1975 utilizing the double hook and again on January 11, 1975 using the single hook. Load application was the top north reactor shield plug - total weight approximately 86 tons. QA inspection report documentation (QAIR No. 75-01 dated January 13, 1975) verified crane testing for all modes of handling the load. A magnetic particle check was performed on the 100 ton crane hook, results dated January 2, 1975.

The inspector additionally verified on a sampling basis that procedures including preoperational checklists and physical exams for crane operators as defined in OSHA and Safety Code B30.2.0 were used for test performance and operational requirements.. These items were considered acceptable*.

d. Cask Dimensions, Weight, CG Location, Lifting Devices and Handling Characteristics

The inspector reviewed documentation prepared by the licensee's consultant dated January 14, 1975, which indicated a comparison of the NFS-4 spent fuel shipping cask and yoke design had been completed with respect to designs described in Supplements 1 and 2 to Amendment 68 to the JCP&L application for a full term license. Characteristics were considered to be within the envelope of parameters established in the referenced supplements. This item was considered acceptable**.

e. Diametral Clearance Between Case Base Plate and Top Plate Opening

The inspector observed various portions of the cask manipulations by the licensee and traverse from the refueling floor to the top plate and entry into the cask drop protection system. The licensee constructed a mockup to demonstrate the ability to repetitively (twice) position the cask load within accuracies required by the transfer path and insertion area. This item was considered acceptable***.

f. Cask Base Plate Attachment

The inspector reviewed documentation from NFS dated January 13, 1975 providing approval for the usage of a base plate as required by the Oyster Creek Cask Drop Protection System and the method of attachment of the base plate to the NFS-4 cask. The inspector also observed initial attachment operations during this inspection. This item was considered acceptable****.

g. Limit Switch Performance Testing

The inspector verified that two vertical limit switches were provided to limit the height the cask was raised to six inches above the top plate of the guide structure. Both crane limit switches

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* DL letter to JCP&L dated April 13, 1973, Condition 7
** DL letter to JCP&L dated April 13, 1973, Condition 1
*** DL letter to JCP&L dated April 13, 1973, Condition 2
**** DL letter to JCP&L dated April 13, 1973, Condition 3

were set to limit vertical travel to approximately 5-5.5 inches above the CDPS top plate upper surface. Additionally, procedural requirements included "Go-No-Go" gauge verification to provide assurance that base plate height did not exceed three (3) inches with respect to the CDPS top plate. This item was considered acceptable*.

h. Bridge and Trolley Safety Controls and Procedures

The inspector verified that visual aids consisting of guide lines, and mechanical rail stops had been installed. Stops were mounted on bridge rails to prevent over travel of the crane in the North and South directions and on the trolly rails to prevent over travel in the West direction. The inspector also verified that stop installation was conducted in accordance with approved written procedures, and reviewed documentation from the licensee's consultant dated May 21, 1973, establishing a perferred/required path of travel over the operating floor, to insure structural safety of the floor system. This item was considered acceptable**.

Observations of spent fuel shipping cask handling operations and procedures for initial shipment disclosed no inadequacies with respect to path restrictions. The removal of the north rail stop following loaded cask withdrawal from the CDPS, prior to movement into the decontamination area was discussed at the exit interview. This item is considered open.

i. Overhead Crane Compliance with OSHA 29 CFR 1910 Subpart IV 1910.179

The licensee had stated in Supplement No. 2 to Amendment No. 68 to the Application For a Full Term Licensee dated December 12, 1972 that the following areas were in the process of being corrected.

(1) Crane warning device to signal crane movement
(2) Cab ladder and railing width, diameter and spacing
(3) Capacity plate installation on auxiliary 5-ton hook

The inspectors review indicated that no corrective action had been taken concerning these items. (INFRACTION)

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* DL letter to JCP&L dated April 3, 1973, Condition 4
** DL letter to JCP&L dated April 3, 1973, Condition 6

The licensee installed a crane warning device prior to cask handling operations and usage was observed by the inspector.

6. Fuel Shipment Records

The inspector reviewed the following documentation related to fuel shipment. These items were considered acceptable.

a. Check Off Sheet (Fuel in Cask)

Assembly Identification No. JC 236
Burnup 21,150 MWD/MT
Assembly Identification No. JC 332
Burnup 19,850 MWD/MT
Reactor Discharge Date - April 1974
Estimated Heat Rate 2.69 KW (11.5KW) maximum

b. Cask Temperature Records

Following removal of the spent fuel cask surface cask temperature was measured by the licensee to be 71°F. Spent Fuel Pit water temperature was 80°F. Three hours following cask loading water samples indicated a temperature rise of the cask cavity of 8°F. Based on a decay heat output of 2.69KW, the licensee did not utilize methanol added to the water in the cask cavity for freeze protection.

c. Radioactive Material Shipment Record

Data covered shipment No. OC-23-75, Carrier TriState Motor, Label Yellow III, denoting no significant removable activity on outer surface of container based on surveys SS 91-75, 92-75, 93-75 and 94-75. Shipment record was Health Physics approved for DOT certification on January 18, 1975 and involved a total activity of $9.2805 \times 10^5$Ci. Measured dose rates (mr/hour) were 40 mr at contact, 25 mr at one foot and 10 mr at three feet.

d. Uniform Straight Bill of Lading

Round trip move with container empty to Oyster Creek and returned to NFS with fissile radioactive material Cask No. NFS-4(A) Fissile Class III containing Fuel assemblies No. JC-236 and JC-332. Departure at NFS, January 12, 1975. Arrival at Oyster Creek, January 12, 1975, with departure of loaded casks January 18, 1975.

7. Radiation Protection

NFS 4 Cask Radiation and Smear Survey Results

Initial

a. Cask Arrival on Site

The inspector reviewed radiation survey record No. RS 031-75 dated January 13, 1975 which was performed following the on site receipt of the empty NFS 4 cask. Initial survey results indicated no significant radiation level above background. Smear survey record No. 067-55 dated January 13, 1975 involved 75 smears with results varying from 320-1010 d/m, Beta-gamma.

b. Removal of Loaded Cask From Spent Fuel Pit

The inspector observed the following surveys taken by the licensee subsequent to loading of spent fuel bundles No. JC 236 and JC 332 on February 17, 1975 and upon withdrawal of the cask from the CDPS.

(1) Cask removal from spent fuel pit - 25 mr at three inches and seven (7) mr at eight (8) feet.

(2) Cask removal from spent fuel pit - 30 mr at three inches.

(3) Cask fully withdrawn - 30mr at three inches was the maximum radiation level detected

c. Cask Decontamination Results

The inspector observed initial cask decontamination efforts. The cask was initially rinsed upon removal using demineralized water prior to decontamination in the cask cleaning area, where exposed cask surfaces were decontaminated. Smear Survey results were as follows:

(1) First Decontamination 35 smears varying from 1040 dpm to 20,000 dpm Beta-gamma (Survey 089-75 dated January 17, 1975)

(2) Second Decontamination 30 smears varying from 90 dpm to 7,870 dpm. Beta-gamma.

(3) Third Decontamination 46 smears varying from 40 - 980 dpm - Beta-gamma, and one smear taken at cask top reading 3,360 dpm - Beta-gamma. (Survey 090-75 and 091-75 dated January 17, 1975.)

(4) Fourth Decontamination Nine smears varying from 40 - 190 dpm Beta-gamma. Survey 093-75 dated January 18, 1975 and 26 smears of cask bottom and water samples varying from 0-560 dpm - Beta-gamma (Survey 094-75 dated January 18, 1975)

d. Cask Survey for Release from Site

The inspector reviewed the Health Physics survey for release and cask shipment which indicated the following.

(1) gamma radiation - 5 mr/hour - neutron 0 mr/hour (six feet from trailer)

(2) gamma radiation - 10 mr/hour - neutron 0 mr/hour (three feet from cask)

(3) Smearable contamination (dpm alpha/100 $cm^2$ - 0)

(4) Smearable contamination (dpm - beta gamma/100 $cm^2$ - 980 maximum)

e. Vehicle Survey Record

The inspector reviewed the transport vehicle survey record following cask loading. Survey results are depicted in Figure 1.

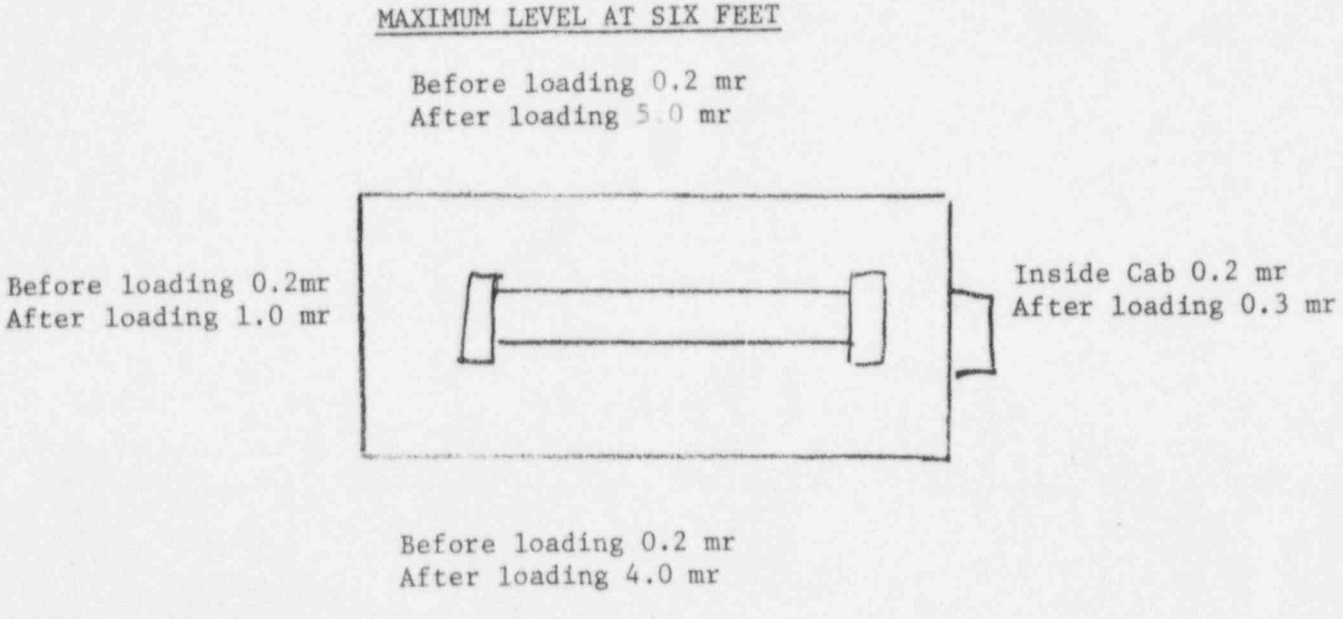


Figure 1

8. Miscellaneous

a. Personnel Control - 119' Elevation, Refueling Floor

The inspectors observed health physics and access controls in effect during the conduct of fuel shipment operations. Access was restricted by security personnel, RWP coverage was provided (50 mrem exposure limit) and two (2) health physics technicians were observed present on the refueling floor.

Personnel involved with jib crane and fuel handling tool manipulations were determined to be licensed reactor operators. Cask handling operations were conducted by the licensee's maintenance group.

b. Personnel Safety

Observations of cask handling operations in the vicinity of the spent fuel pool indicated inadequate hand rails to protect personnel and inconsistencies in wearing of life jackets while working with the cask and CDPS. A life ring was observed to be available. Resolution of this matter was discussed with cognizant licensee representatives and at the exit interview regarding equipment use and removable hand rails. This item will be reviewed during a future inspection.

c. Chromate Water Storage Status*

A review of licensee records and discussion indicated that all trucks and tanks located on site have been emptied. Five trailers have been flushed, and two trailers were released and removed from site. Processing of permanently stored chromate water, and tank and truck disposition remain outstanding. A licensee representative stated that work in this area would be resumed in about two weeks, following winterizing of equipment. This item remains unresolved.

d. Bank Stabilization Program**

The inspector observed grading equipment at work along the length of the facility discharge canal. Estimate of completion status of this program was undetermined.

* IE Inspection Report 50-219/74-18, Details 13.c
** IE Inspection Report 50-219/74-16, Details 3a