

U.S. NUCLEAR REGULATORY COMMISSION  
REGION I

Report No. 50-219/84-14

Docket No. 50-219

License No. DPR-16 Priority -- Category C

Licensee: GPU Nuclear Corporation  
Madison Avenue at Punch Bowl Road  
Morristown, New Jersey 07960

Facility Name: Oyster Creek Nuclear Generating Station

Inspection At: Forked River, New Jersey

Inspection Conducted: May 11, 1984

Inspectors: J. J. Kottan  
J. J. Kottan, Radiation Laboratory  
Specialist

6-14-84  
date

J. J. Kottan  
for M. E. Kramarc, Radiation Specialist

6-14-84  
date

Approved by: W. J. Pasciak  
W. J. Pasciak, Chief, Effluents Radiation  
Protection Section, Radiation Protection  
Branch

6/15/84  
date

Inspection Summary: Inspection on May 11, 1984 (Report No. 50-219/84-14)

Areas Inspected: Routine, announced inspection of the licensee's bioassay whole body counting program. Areas reviewed included: results of the whole body counting phantom analysis comparison, procedures, and QA and calibration data.

Results: Of the areas inspected, no violations were identified.

## DETAILS

### 1. Individuals Contacted

#### Principal Licensee Employees

- \*P. Fiedler, Vice President/Director of Site Operations
- \*D. Turner, Manager, Radiological Controls
- M. Littleton, Radiological Engineer

\*denotes those present at the exit interview.

### 2. Purpose

The purpose of this inspection was to verify the capability of the licensee to adequately perform radiological bioassay using a whole body counting system. A whole body counting phantom containing radioactive sources traceable to the National Bureau of Standards (NBS) was submitted to the licensee for analysis. The phantom duplicated the nuclides and the organ burdens that the licensee might encounter during normal operation. The phantom was analyzed using the licensee's normal methods and equipment.

### 3. Results Comparison

The licensee currently has two whole body counting systems: a moving bed system and a standup counting system. The NRC phantom was counted in both systems by the licensee. The lung results are based on an average of five measurements and the GI tract results are based on an average of two measurements. Table I contains the results of the intercomparison. Based on the intercomparison results, no violations were identified in this area.

### 4. Procedures and Data

The inspector reviewed the licensee's procedures for the operation and calibration of the whole body counting systems. The Quality Assurance (QA) program for the whole body counting systems was also reviewed. The licensee's procedures contain detailed instructions for performing gain checks, source checks, and calibration checks at specified frequencies. Also included in the procedures are acceptance/rejection criteria for the various checks. The inspector reviewed the data for 1983 to date and noted that all QA checks were performed in accordance with procedural requirements. No violations were identified in this area.

### 5. Exit Interview

The inspector met with the licensee representatives denoted in Paragraph 1 at the conclusion of the inspection on May 11, 1984. The inspector discussed the purpose, scope, and findings of the inspection.

TABLE I

Type of Counting System: Moving Bed System

| <u>Isotope</u> | <u>Organ</u> | <u>NRC Value</u> | <u>Licensee Value</u> | <u>Licensee Value</u><br><u>NRC Value</u> |
|----------------|--------------|------------------|-----------------------|---|
|----------------|--------------|------------------|-----------------------|---|

RESULTS IN TOTAL NANOCURIES

|        |          |    |     |      |
|--------|----------|----|-----|------|
| Cs-137 | Lung     | 99 | 130 | 1.31 |
| Co-60  | Lung     | 97 | 116 | 1.20 |
| Cs-137 | GI Tract | 89 | 122 | 1.37 |
| Co-60  | GI Tract | 87 | 111 | 1.28 |

Type of Counting System: Stand-up Counting System

| <u>Isotope</u> | <u>Organ</u> | <u>NRC Value</u> | <u>Licensee Value</u> | <u>Licensee Value</u><br><u>NRC Value</u> |
|----------------|--------------|------------------|-----------------------|---|
|----------------|--------------|------------------|-----------------------|---|

RESULTS IN TOTAL NANOCURIES

|        |          |    |     |      |
|--------|----------|----|-----|------|
| Cs-137 | Lung     | 99 | 145 | 1.46 |
| Co-60  | Lung     | 97 | 118 | 1.22 |
| Cs-137 | GI Tract | 89 | 151 | 1.70 |
| Co-60  | GI Tract | 87 | 136 | 1.56 |