

U.S. NUCLEAR REGULATORY COMMISSION  
REGION I

Report No. 88-02

Docket No. 50-193

License No. R-95


Licensee: Rhode Island Atomic Energy Commission  
South Ferry Road  
Narragansett, Rhode Island 02882

Facility Name: Rhode Island and Providence Plantation AEC

Inspection At: Narragansett, Rhode Island

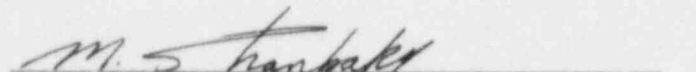
Inspection Conducted: June 22-23, 1988

Inspectors:

  
Walter V. Thomas, Radiation Specialist,  
FRSSB, DRSS

7/19/88  
date

Approved by:

  
M. M. Shanbaky, Chief, Facilities  
Radiation Protection Section, FRSSB, DRSS

7/21/88  
date

Inspection Summary: Inspection conducted on June 22-23, 1988  
(Inspection Report No. 50-193/88-02)

Areas Inspected: Routine, unannounced inspection of the radiation protection program including: status of previously identified items; training and qualifications, implementation of the radiation protection program, external exposure controls, effluent monitoring, and emergency planning.

Results: No violations were identified in this review.

## Details

### 1. Personnel Contacted

\*A. Dimeglio, Director of Operations  
\*N. Jacob, Radiation Safety Officer  
D. Johnson, Staff Health Physicist

\*Attended the exit meeting on June 23, 1988.

### 2. Purpose

The purpose of this routine, unannounced inspection was to review selected elements of the Rhode Island Atomic Energy Commission (RIAEC) Research Reactor Radiation Protection program. The following elements of the Radiation Protection Program were reviewed:

- status of previously identified items;
- training and qualification of personnel;
- implementation of the Radiation Protection Program;
- external exposure controls;
- effluent monitoring; and
- emergency planning

### 3. Status of Previously Identified Items

3.1 (Closed) 88-01-01 (UNR) TS G.3c states "A radiation monitor shall be provided to monitor all persons leaving the reactor room for Beta-Gamma contamination."

A Beta-Gamma monitor with two probes (one on each side of the hallway) is provided. Additionally, a portable Beta-Gamma survey meter is provided in the hallway if required for hand and foot surveys. Daily smears are taken at 13 points on the reactor facility floor at the end of each daily reactor run, also weekly smears at 65 points are taken. Any contamination found is immediately removed. Activities which have produced contamination in the past or have a high potential for producing contamination are closely monitored. Personnel involved in these activities are instructed to use the hand and foot survey meter when exiting the reactor room. This item is closed.

### 4. Training and Qualification of Personnel

The licensee's program for training and qualifying personnel for access and use of the research reactor facility was reviewed with respect to criteria contained in:

- 10 CFR 19.12, "Instructions to Workers."

The licensee's performance relative to the above criteria was determined by:

- review of the Rhode Island Nuclear Science Center (NSC) Radiation Safety Guide";
- review of training records of all radiation workers; and
- discussions with licensee personnel.

Within the scope of this review, no violations were identified. The licensee maintained complete records for all users of the research reactor facility. Additionally, the Radiation Safety Guide provides comprehensive instruction, procedures, and precautions to workers for compliance with regulatory requirements.

The present Radiation Safety Guide, dated June 1984, is in the process of revision by the Radiation Safety Officer. This revision will be completed and implemented for facility use by the end of the calendar year, and will be reviewed during a subsequent inspection, (88-02-01).

#### 5. Implementation of the Radiation Protection Program

The licensee's program for controlling radioactive materials and contamination providing surveillance and monitoring, and establishing and maintaining administrative radiological work controls was reviewed relative to criteria in:

- 10 CFR 19.11, 19.12, 20.201, 20.203 and 20.401;
- Technical Specification G.3, "Other Radiation Monitoring Equipment", and G.4, "High Radiation Area".

The licensee's performance relative to the above criteria was determined by:

- observations of housekeeping, postings, signs, and labels during a facility tour on June 22, 1988;
- review of records of survey instrument calibration, survey records, and access controls;

Within the scope of this review, no violations were identified. The licensee indicated that vigorous controls are exercised for access to the Nuclear Science Center through the use of keys controlled by the senior reactor operators or health physics staff. All records of surveys, logs, and calibrations were complete, thorough and timely.

#### 6. External Exposure Control

The licensee's external exposure control program was reviewed against criteria provided in:

- 10 CFR 20.101, 10.202, 20.203 and 20.401.

The licensee's performance relative to the above criteria was determined by:

- review of dosimetry records for all radiation workers for 1986, 1987 and 1988 to date.
- discussions with licensee personnel.

Within the scope of this review, no violations were identified. The licensee uses Landauer film badge service for dosimetry of record. Daily dose tracking is performed with self-reading dosimeters. In general, the licensee was conducting external exposure monitoring in accordance with regulatory requirements.

#### 7. Effluent Monitoring

The licensee's program for monitoring liquid and gaseous effluents from the Nuclear Science Center was reviewed against criteria contained in:

- 10 CFR 20.106, "Radioactivity in effluents to unrestricted areas"; and
- Technical Specifications G.1, G.2, and G.3.

The licensee's performance relative to the above criteria was determined by:

- review of calibrations of area radiation monitors;
- review of gaseous and liquid releases for 1986, 1987 and 1988 to date;
- discussions with licensee personnel.

Within the scope of the above review, no violations were identified.

#### 8. Emergency Planning

The licensee has prepared and implemented an Emergency Plan which provides the basis for actions to cope with an emergency at the Nuclear Science Center (NSC). The NSC contains a 2 MW swimming pool research reactor which is utilized for neutron activation analysis and neutron spectroscopy experiments. The reactor is housed in a nine inch thick concrete building. Adjacent and connected to the reactor building are the offices and laboratories. A basement area extending beyond the reactor building contains reactor equipment, laboratories, the heating plant, offices and general work areas.

The emergency organization is shown in figure 3-1 of the Emergency Plan dated April, 1987. It consists of three major components: NSC staff, local governmental agencies, and other offsite organizations. The offsite agencies will provide services such as fire fighting, security, medical transport, medical treatment and weather forecasting. Letters of agreement have been negotiated with each offsite agency. Copies of current letters of agreement and offsite agency response procedures are contained in the Emergency Plan.

As a result of review of the NSC emergency planning activities, it was verified that the scope of the licensee's planning is complete and adequate for the facility and in accordance with regulatory requirements.

Discussions were held with the NSC Health Physicist and reviews were conducted of previous annual emergency exercises and drills. The drills and exercises included medical, radiation emergency, and communication drills. As a result of review of the drills and the evaluations of the drills conducted by NSC it was concluded that these events could be handled with existing procedures, equipment, and personnel in a manner appropriate to protect the public health and safety.

9. Exit Interview

The inspector met with the licensee's representatives (denoted in Paragraph 1) at the conclusion of the inspection on June 23, 1988. The inspector summarized the purpose and scope of the inspection and findings as described in this report.