U. S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-193/92-01

Docket No. 50-193

License No. R-95

Licensee: Rhode Island Nuclear Science Center
Rhode Island Atomic Energy Commission
South Ferry Road
Narragansett, Rhode Island

Facility Name: Rhode Island Nuclear Science Center

Inspection At: Narragansett, Rhode Island

Inspection Conducted: June 29 - 1 July, 1992

Inspectors: Stephen Holmes 8/7/92
for Thomas Dragoun, Project Scientist, Effluents date
Radiation Protection Section (ERPS), Facilities
Radiological Safety and Safeguards Branch (FRSSB)

Stephen Holmes 8/7/92
Stephen Holmes, Radiation Specialist, ERPS,FRSSB date

Approved By: James P. Durr 8/7/92
for Robert Bores, Chief, ERPS, FRSSB, date
Division of Radiation Safety and Safeguards

Areas Inspected: Audits and oversight, safety surveillances, maintenance and operational logs and procedures, effluent releases, and the operator requalification program.

Results: Health physics postings and general housekeeping were significantly improved. Written procedures for some surveillances did not exist, or contained only limited guidance as to frequency or specification of limits. Similarly, some training documentation was weak. These difficulties, in part, seemed related to the non-standard Technical Specifications. The licensee may reformat the TS at the time of conversion to low enriched fuel. No safety concerns or violations of regulatory requirements were identified.

DETAILS

1.0 Persons Contacted

*T. Tehan, Director, Rhode Island Nuclear Science Center
*W. Simoneau, Acting Assistant Director
B. Smith, Senior Reactor Operator
D. Jones, Health Physicist

* Present at exit briefing.

2.0 Status of Previously Identified Items

2.1 (Closed) Followup Item Audits did not include formal written reports. The licensee had a reciprocal agreement to have independent audits performed, however no formal report was available of the audits. The inspector reviewed the audits performed during the last two years and verified that they were documented by formal written reports of findings and recommendations. This item is closed.

2.2 (Closed) Followup item Housekeeping by the licensee was poor. During tours of the facility the inspector observed that general housekeeping, including health physics posting, was significantly improved. This item is closed.

2.3 (Closed) Unresolved Item (50-146/90-01) Licensee had no written procedures for calculation of shutdown margin, excess reactivity, and fission density. Written procedures for these operations were now available. This item is closed.

3.0 Surveillances

The licensee is required by technical specifications (TS) to perform periodic surveillances to ensure that reactor safety equipment performance is within the limits specified in the license and the facility Safety Analysis Report. The inspector interviewed the staff, and reviewed surveillance records and procedures. Surveillances generally were being performed at the required intervals and the results were within required parameters. The licensee was also performing additional appropriate surveillance tests and verifications not specifically required by their present TS. This additional effort in ensuring safe operations is encouraged. However, a weakness was noted in that a number of surveillances had no formal written procedure, while others had limited guidance as to frequency or specification of limits. An example was the procedure (which was not prescribed by the present TS) that included the annual control rod inspection. This procedure required the staff to perform a visual inspection of the control rods, but no guidance was given on what constituted an acceptable inspection. The licensee stated that the safety surveillance procedures would be reviewed to determine the need for additional guidance and formal written procedures.

The ability of the secondary water monitor to measure radionuclide concentrations on a daily basis, when the reactor operates using forced convection cooling, at levels

required by TS K.3.d.(3) could not be verified. The licensee stated that an evaluation of the instrumentation and procedure for monitoring the secondary water would be performed to determine whether modifications to the procedure, instrumentation, or to the technical specifications would be the appropriate corrective action. The licensee stated that these tasks would be accomplished by the first of August 1992. These actions will be reviewed in a future inspection. Within the scope of this review, no safety concerns were noted.

4.0 Operations

4.1 Maintenance

Maintenance of the reactor systems is required by Technical Specification K.4. The inspector reviewed logs, equipment, and system maintenance records. Maintenance, operational, and calibration checks of the reactor systems were being performed in accordance with written schedules and procedures. Calibration followed either American National Standards Institute (ANSI) recommendations or the individual manufacturer's instructions. The logs and records of repaired and replaced items were good. One area of concern was the number of failed rod position indicator lights that had not been replaced. The licensee stated that a new indicator system had been ordered. This action will be reviewed in a future inspection. These rod position indicator lights, however, are not specifically required by the present TS. Maintenance was adequate.

4.2 Logs

Reactor operating records are required by Section 3.c. of the TS. The inspector audited these records, interviewed operators, and observed uses of logs during reactor operations. Records of power level, operating periods, emergency shutdowns, inadvertent scrams, and installed experiments were being kept. Within the scope of this inspection reactor operating records were adequate. No safety concerns were noted.

5.0 Effluent Releases

Technical Specification K.3.g. provides the limits for release of liquid and gaseous radioeffluents and the requirements for the associated instrumentation. The inspector reviewed the release records and instrumentation calibrations for both liquids and gases, interviewed the staff, and toured related facility areas. The releases were within the required limits and documented. Calibration of related instrumentation was adequate as was the written procedure, except that the documentation for the calibration of the gaseous monitor and the calculation of the alarm set point was minimal. The license stated that this procedure would be reviewed to determine the additional guidance needed. The liquid radioeffluent procedures requiring both the technician and the radiation protection officer to check the calculations before release is excellent. Within the scope of this inspection no safety concerns were noted.

6.0 Operational Procedures

The inspector reviewed the operational procedures, interviewed staff members, and observed reactor start-ups and operators use of check sheets. Operational procedures were adequate and available to the operators in the control room. Within the scope of this inspection no safety concerns were noted.

7.0 Oversight

The inspector reviewed the Rhode Island Atomic Energy Commission's, the Utilization, and Radiation Safety Committees' minutes for the past two years and audits conducted by outside experts. The committees' meeting schedule and membership satisfy requirements provided by Technical Specification 7.1. Though not required by the TS the formation and use of a Radiation Safety Committee is commendable and encouraged. It was noted that the Utilization Committee member from Providence College attended very infrequently. The licensee confirmed that the attendance of the Utilization Committee member from Providence College would be remedied. Review of the minutes indicated the committees provided appropriate guidance, direction and oversight to the safety program and ensured suitable use of the reactor. The committees performed their duties as required by license and Technical Specification requirements. The outside audits were relevant in both scope and depth, however, follow-up on the audit recommendations was poor. The inspector could not verify which recommendations had or had not been evaluated or adopted by the licensee. The licensee stated that future audit results would be properly evaluated and documented. Oversight by the committees is considered adequate.

8.0 Operator Requalification Program

An examination of the training records, exams, and interviews with operators indicated that all current operators successfully completed the operational and written exams, the emergency procedure exercises, and minimum operator manipulations as required by the, NRC approved requalification plan. Exam questions demonstrated good technical depth. It could not be verified, however, if all operators received all the specific classes required by 10CFR part 55.59(c)(2) because documentation was limited to formal classes given in four of the nine required areas. No records were being kept of tutoring sessions which are acceptable under the approved training plan in lieu of formal classes. Neither the current TS nor the approved training plan specifically require this documentation to demonstrate that all such training has been given. The licensee stated that all required classes identified in 10CFR55 would be presented and documented with written instructional guidance. These actions will be reviewed in a future inspection. The requalification program was being implemented adequately to ensure appropriate training of the operators.

9.0 Technical Specifications

As this review progressed an area of concern became apparent to the inspectors. The present Technical Specifications for the facility are, for the most part, the original ones issued when the facility was first licensed. The TS are non-standard and out of date in relation to the present format and content recommended by ANSI. The surveillances required are scattered, vague, and sometimes do not specifically require tests, process monitoring, surveillance limits or frequencies that are considered standard at the present. For example the current TS do not require control rod inspections, control rod position indication, or training records of tutoring sessions. However, due to the experienced staff, appropriate additional surveillances are being performed which alleviates any safety concern. Updating these TS to the format and content recommended by ANSI/ANS 15.1 which would contain explicit surveillance requirements along with objectives and basis for the requirements would enhance the safety program and ensure that, when the present staff departs, the program will continue in a safe manner. Since the licensee anticipates a conversion from high enriched to low enriched fuel in late 1992 or early 1993 for which a new safety analysis report will be required along with changes to the TS, the entire TS could be reformatted at that time with minimal effort.

10.0 Exit Interview

The inspectors met with the licensee representatives indicated in Section 1.0 on June 29 through July 1, 1992 and summarized the scope and findings of this inspection.