

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-333/89-06

Docket No. 50-333

License No. DPR-59 Priority - Category C

Licensee: Power Authority of the State of New York
P.O. Box 41
Lycoming, NY 13093

Facility Name: James A. FitzPatrick Nuclear Power Plant

Inspection At: Lycoming, New York

Inspection Conducted: April 3-7, 1989

Inspectors:

J. Furia
J. Furia, Radiation Specialist

4-24-89
date

Approved by:

W. Pasciak
W. Pasciak, Chief, Effluents
Radiation Protection Section

4-15-89
date

Inspection Summary: Inspection on April 3-7, 1989 (Inspection Report No. 50-333/89-06)

Areas Inspected: Routine unannounced inspection of the effluent, environmental monitoring, transportation and solid radioactive waste programs including: management controls; audits; quality assurance; and implementation of the above programs.

Results: Within the areas inspected, no violations or deviations were noted.

8905220012 890503
PDR ADOCK 05000333
Q PNU

DETAILS

1. Personnel Contacted

1.1 Licensee Personnel

- *W. Fernandez, Resident Manager
- R. Liseno, Superintendent of Power
- *E. Mulcahey, Superintendent, Radiological & Environmental Services (RES)
- *R. Patch, Superintendent, Quality Assurance
- *A. McKeen, Chemistry Supervisor, RES
- *G. Tasick, Quality Assurance Supervisor
- K. Szeluga, Radiation Protection Supervisor, RES
- W. Hamblin, Radiochemistry Supervisor, RES
- *D. Johnson, Waste Management General Supervisor, Operations
- A. Young, Decon & Shipping Supervisor, Operations
- J. Scott, Quality Assurance Engineer
- J. Wierowski, Training Technical Supervisor
- B. Gorman, Environmental Supervisor, RES
- *J. Solini, Health Physics General Supervisor, RES
- *D. Lindsey, Planning Superintendent
- *G. Vargo, Radiological Engineering General Supervisor, RES

1.2 NRC Personnel:

R. Plasse, Jr., Resident Inspector

*Denotes personnel who attended the exit interview of April 7, 1989.

2. Scope

This routine safety inspection reviewed the licensee's program for the areas of liquid and gaseous effluents, radiological environmental monitoring, transportation and solid radioactive waste.

3. Licensee Actions on Previously Identified Items

(Closed) Violation (50-333/88-28-01) Improper radioactive waste shipment to Barnwell, South Carolina. The licensee has taken steps to ensure only acceptable radioactive material is sent to another licensee. Procedural changes include additional testing of finished product to ensure proper waste form and greater process monitoring to identify abnormal conditions. This item is closed.

4. Effluent Monitoring

Monitoring of liquid and gaseous effluents released from the licensee's facility is the responsibility of the Chemistry General Supervisor, who

reports through the Superintendent for Radiological and Environmental Services. In addition, responsibility for calibration of liquid and gaseous effluent monitors is also the responsibility of the Chemistry General Supervisor. Testing of the plant gaseous effluent filter systems is performed by a contractor (NCS Corporation) under the direction of the Radiation Protection Supervisor. As part of this inspection, the following licensee procedures related to the effluent program were examined:

- PSP-4, Rev 11, "Wastewater Sampling and Analysis"
- PSP-5, Rev 10, "Gaseous Effluent Sampling and Analysis"
- PSP-6, Rev 5, "SBGTS, CREVASS and TSCVASS Filter Testing"
- PSP-13, Rev 5, "Service Water, Liquid Radwaste Discharge and RCLC Monitor Operation and Calibration"
- PSP-14, Rev 4, "Main Steam Line and SJAE Radiation Monitor Calibration"
- PSP-18, Rev 2, "Stack Automatic Iodine and Particulate Sample System"
- PSP-22, Rev 2, "Gaseous Effluent Monitors Calibration and Use"
- PSP-23, Rev 3, "Steam Jet Air Ejector and Recombiner Effluent Sampling and Analysis"
- PSP-24, Rev 2, "Representative Sampling and Determination of Radioactive Materials"

4.1 Monitoring and Documentation

Chemistry technicians under the direction of the Radiological Chemistry Supervisor are responsible for drawing effluent samples prior to and during releases in accordance with the license Radiological Effluent Technical Specifications (RETS) 2.1 for liquids and 3.1 for gases. As part of this inspection, records for the period July 1988 - March 1989 were reviewed and found to be complete. The licensee utilizes two dose calculation programs, RETDAS and DOSETRAK, for the calculation of offsite doses as required in the Offsite Dose Calculation Manual (ODCM). Accuracy of these computer calculations was verified by the inspector.

The inspector reviewed control charts, self absorption curves and voltage plateau graphs for the equipment utilized in the analysis of effluent samples. At the present time the licensee has available two intrinsic germanium detectors, and three proportional counters for use in this program. Licensee procedures include the immediate investigation of any control chart point outside the three sigma limit or a set of five consecutive data points trending on the same side of the mean. The licensee's chemistry laboratory was found to be well equipped, with a considerable number of instruments interfaced with computers.

The inspector reviewed the July - December 1988 Effluent Release Report filed by the licensee in accordance with the reporting requirements of RETS 7.3. This document accurately reflected the nature and scope of the effluent releases made by the licensee as

substantiated by the documentation reviewed during this inspection. In addition, the current ODCM, Revision 7, was reviewed. This document has not been changed since July 1987.

4.2 Monitor Calibration

Gaseous and liquid effluent monitor calibration records for the past eighteen months were examined by the inspector. Only one instance of a monitor needing repair was noted, and this repair was completed in a timely manner. All monitors, when calibrated, include a determination of count rate to concentration conversion factor (termed k-factor). These values are posted in the control room. Calibration of monitors is accomplished by placing a series of gamma sources whose activities have been determined by the licensee through isotopic gamma analysis at the monitor and reading out both the computerized digital readout and chart recorder values in the control room.

4.3 Filter Testing

Testing of HEPA charcoal filters utilized in the licensee's air handling systems is conducted by a contractor, who the licensee has utilized since the facility first came on line. Tests were conducted in accordance with ANSI standards and were performed on a quarterly bases unless plant conditions required more frequent testing as was done on the charcoal filters of the B train Standby Gas Treatment System when the charcoal was changed out while between testing dates.

4.4 Quality Assurance

The licensee's Quality Assurance (QA) program includes surveillances of the chemistry group and annual audits. Audit No. 652, dated November 15, 1988 was the most recent audit of both the effluent and environmental monitoring programs. This audit was conducted by trained auditors, one of whom was a contractor, and utilized a 129 page checklist. This audit was found to be comprehensive in scope and to adequately evaluate the licensee's program in this area.

5. Transportation and Solid Radioactive Waste

Responsibility for the processing and transportation of radioactive materials is split by the licensee between its operations and RES departments. Operations processes waste streams into a proper form, packages the material and ships it to a disposal site, through its Waste Management group. RES provides determination of transportation and waste classification through the use of a RADMAN computer code, and is also responsible for the packaging and shipment of non-waste radioactive materials.

5.1 Radwaste

The licensee's Waste Management group currently dewateres resins in High Integrity Containers (HIC), compacts low level dry active waste, and solidifies certain resins and evaporator bottoms. Solidification is accomplished on-site using a LN Technologies system operated by contractor personnel under the direction of the licensee. During this inspection, the following procedures were reviewed as they related to the radwaste program:

F-OP-34, Rev 11, "Resin Transfer, Regeneration and Cleaning"
 F-OP-48, Rev 15, "Solid Radwaste System"
 F-OP-48A, Rev 17, "Documentation of Radwaste Shipments"
 F-OP-48B, Rev 14, "Waste Packaging and Handling"
 F-OP-48C-9, Rev 6, "Handling Procedure for the NUS 14-170 Cask"
 F-OP-48C-10, Rev 6, "Handling Procedure for the NUS 10-135 Cask"
 F-OP-48C-11, Rev 2, "Handling Procedure for the TFC High Integrity Container"
 F-OP-48C-12, Rev 12, "Handling Procedure for the CNSI 3-55 Cask"
 F-OP-48C-13, Rev 0, "Handling Procedure for the CNSI 1-13C Cask"
 F-OP-48C-14, Rev 0, "Handling Procedure for the CNSI 1-13G Cask"
 F-OP-48C-15, Rev 0, "Handling Procedure for the CNS 14-195H Cask"
 F-OP-48D, Rev 6, "Scheduling of Radwaste Shipments"
 F-OP-48E, Rev 0, "Radioactive Material Segregation"
 F-OP-48F, Rev 0, "Waste Oil Processing"
 F-OP-49, Rev 26, Liquid Radioactive Waste"

The licensee currently maintains an inventory of one trailer with shipping cask and liner or HIC in the truck lock area of the Radwaste building. Here the liner or HIC is loaded and dewatered or solidified as appropriate. In addition, the licensee has two additional trailers on site, one holding the returned liner from the LOMI decontamination, which the licensee is attempting to dispose of by gaining a burial site variance, and the other which holds an ATCOR cask which is used on an as needed basis for temporary storage. Also the licensee has two flatbed railroad cars which have covers affixed and contain low pressure turbine blades.

At the time of this inspection, the licensee was shipping a solidified liner to Barnwell, South Carolina. Discussions with the Waste Management General Supervisor indicated that the licensee experienced certain anomalies during the solidification process of this liner. Specifically, a "normal" exothermal reaction within the liner was not detected after mixing of the solidification agent and waste stream in the liner. Due to this abnormal occurrence, the licensee took core samples of the liner and discovered that it had not properly solidified despite meeting the procedural test for solidification (Procedure SS-013, Rev L, "Operating Procedure for LN Radwaste Solidification System No. 8901 for Work at the James A. FitzPatrick Station"). Later, a second exothermal reaction was detected from within the liner, and second liner drillings indicated

that the liner had solidified two days later than expected. Review of the acceptance criteria contained in Procedure SS-013, indicates that the acceptance criteria are qualitatively descriptive in nature only, and do not present any quantitative parameters with which to evaluate the success or failure of a solidification.

5.2 Transportation

RES utilizes the RADMAN computer code to determine waste and shipping classification of all radioactive materials transported by the licensee offsite. As part of this inspection, the records of four waste and two laundry shipments made since June 1988 were examined and found to properly classify the material. For three waste streams, evaporator bottoms, powder resin and bead resin, the Radiation Protection Supervisor collects samples of each waste shipment and makes three month composite samples. Every six months, one of these composites is sent to a vendor laboratory for total isotopic analysis, and the results are compared to the current computer data base.

As part of this inspection, the following procedures were examined:

- PSP-8, Rev 11, "Radioactive Material Shipping Procedure"
- PSP-11, Rev 2, "Sample Shipment for Offsite Analysis"
- PSP-20, Rev 3, "Radioactive Waste System Sampling and Analysis"

5.3 Training

In response to NRC IE Bulletin 79-19, the licensee had developed a comprehensive training program for both Operations and RES personnel who perform tasks in the processing and shipment of radwaste. During the past four years all employees involved in these operations have been placed through these training programs. Continuing training for RES employees who perform waste classification calculations and prepare manifests is accomplished by attendance at vendor supplied training programs.

5.4 Quality Assurance

The licensee's QA program includes surveillances of selected waste shipments and biennial audits of the waste program. Two audits, Numbers 618, dated June 4, 1987 and 607, dated February 4, 1987 have most recently been conducted in this area. Additionally, audits of LN Technologies Corporation and Science Applications International Corporation (SAIC) have also been conducted. LN Technologies provides waste solidifications and dewatering services together with on site personnel and equipment. SAIC is utilized to perform 10 CFR 61 waste stream analysis. These audits were found to be comprehensive in scope, with all findings addressed in a timely manner.

6. Environmental Monitoring

The Radiological Environmental Monitoring Program (REMP) at the licensee's facility is conducted in cooperation with the Niagara Mohawk Nine Mile Point nuclear facilities which are located adjacent to the licensee. The facilities jointly take environmental samples which are analyzed at the licensee's JAF Environmental Laboratory, with the resultant data shared by the facilities. Maintenance of the meteorological tower instrumentation is the responsibility of Niagara Mohawk.

As part of this inspection, the licensee's 1987 REMP report, submitted in accordance with RETS 7.3 was reviewed and found to be comprehensive in scope and to properly address any anomalous data. The inspector also reviewed data which will be included in the 1988 and 1989 REMP reports. In addition, the following procedures were reviewed:

- ESP-4, Rev 14, "Environmental Station Inspection and Sample Collection"
- ESP-5, Rev 13, "Analysis of Environmental Samples"
- ESP-12, "Rev 9, "Environmental Surveillance Program Quality Assurance/Quality Control Program"

The JAF Environmental Laboratory currently performs analyses of environmental samples submitted from the licensee for the James A. FitzPatrick Nuclear Power Plant REMP report, the Nine Mile Point Units 1 & 2 REMP report, and the Indian Point Units 1, 2 & 3 REMP report. At the present time, the laboratory performs analysis of all samples except tritium, iodines in milk and water, and processing of TLDs.

The licensee's QA department conducts annual audits of the REMP as part of its Appendix B Technical Specifications audit. In addition, the licensee has conducted an audit of Teledyne Isotopes, which performs isotopic analysis and TLD services in support of the REMP. These audits were found to be comprehensive in scope, with all findings addressed in a timely manner. In addition, the JAF Environmental Laboratory publishes an annual QA report showing the results of spiked, replicate and cross check samples submitted to it.

7. Exit Interview

The inspector met with licensee representatives denoted in Paragraph 1 at the conclusion of the inspection on April 7, 1989. The inspector summarized the purpose and scope of the inspection, and discussed the findings. At no time during this inspection was written material provided to the licensee by the inspector.