U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-333/94-07

Docket No. 50-333

License No. DPR-59

Licensee: New York Power Authority
Post Office Box 41
Lycoming, New York 13093

Facility Name: James A. FitzPatrick Nuclear Power Plant

Inspection At: Lycoming, New York

Inspection Conducted: February 28 - March 4, 1994

Inspector: _____ 3/6/94
J. Furia, Senior Radiation Specialist date

Approved by: _____ 3/17/94
R. Bores, Chief, Facilities Radiation Protection Section date

Areas Inspected: Maintenance of occupational exposures as low as reasonably achievable (ALARA), radiological controls during normal operations, radiological instrumentation, dosimetry and assurance of quality.

Results: Changes to the licensee's internal and external dosimetry program, as required under the revisions to 10CFR20, were successfully implemented. ALARA performance was generally improved from past years, but a weakness was noted in communications between groups involved in the irradiated hardware shipping campaign. Additionally, one violation of NRC requirements was identified in the area of procedural compliance. Furthermore, in addition to the two examples cited, several additional examples of procedural non-compliance have been identified by the licensee's Quality Assurance Department in the five months preceeding the inspection. While this is indicative of a strong self-identification program, it may also indicate that the licensee's corrective action program has not always been effective in preventing recurrence.

## DETAILS

### 1.0 Personnel Contacted

#### 1.1 Licensee Personnel

* R. Barrett, General Manager - Operations
  T. Bergene, ALARA Supervisor
* R. Converse, Senior Assessment Engineer
  D. Dull, Instrumentation Technician
  R. Graben, Instrumentation and Respiratory Protection Supervisor
* J. Hoddy, Senior Licensing Engineer
* J. McCarty, Senior Quality Engineer
  M. McMahon, Health Physics General Supervisor
* C. Moreau, Quality Assurance Engineer
* E. Mulcahey, Operational Review Group
* T. Phelps, Radiation Protection Supervisor
  P. Policastro, Radiation Protection Supervisor
* M. Redding, Communications Specialist
* H. Salmon, Resident Manager
* J. Sipp, Radiological and Environmental Services Manager
  J. Solini, Radiological Engineering General Supervisor
  J. Solowski, Radiation Protection Supervisor
  K. Szeluga, Dosimetry Supervisor
* D. Topley, Acting General Manager Support Services
* D. Vandermark, Quality Assurance Supervisor
  A. Young, Decontamination and Shipping Supervisor

#### 1.2 NRC Personnel

* D. Dempsey, Acting Resident Inspector

* Denotes those present at the exit interview on March 4, 1994.

### 2.0 Radiation Protection Program

Since the last inspection in this area, the licensee completed its move of personnel into the new Administration Building, consolidating the radiation protection staff, with the exception of the instrumentation and respiratory protection staff. The whole body counters were moved from the old administration facility, and the instrumentation calibration facility was moved to the old administration area. At the time of this inspection, all supervisory positions in Radiation Protection were filled by fully qualified personnel.

2.1 Maintaining Occupational Exposure ALARA

For 1993, the licensee established an occupational exposure goal of not more than 220 person-rem. Included in this goal was the Fall 1993 maintenance outage, with a goal of 42.994 person-rem. The maintenance outage was completed with a total occupational exposure of 61.322 person-rem, while the annual total exposure was 231.53 person-rem. Significant contributors to exceeding the initial goal included: a failure on the part of the ALARA staff to include routine occupational exposure estimates (i.e., those used during normal operating months for routine operations and maintenance activities); having to perform surveillances that the licensee had hoped to defer until the next refueling outage, but could not; work in the spent fuel pool not originally included in the exposure goal; and emergent work as the result of leak rate test failures. In addition, the Radiological and Environmental Services (RES) Manager expressed concern that part of the emergent work was in fact activities that should reasonably have been anticipated prior to the start of the outage. In spite of this, the licensee was able to accomplish several jobs for well under the estimated exposures established, such as replacement of some of the safety relief valves. In general, the licensee's ALARA program continued to make improvements, but needs to address the identifed weaknesses.

For 1994, the licensee has established a goal of not more than 389 person-rem. This goal includes 3 weeks for a maintenance outage in April, and commencing a full refueling outage on November 29th. The goal also includes a contingency factor assuming not more than 18 days of forced outages during the year. The maintenance outage exposure goal has been established at 124.07 person-rem, with significant exposure work including changeout of the control rod drives (CRDs), hydrolazing the drywell sump, leak rate testing and motor operated valve tests. For the refueling outage, in addition to the normal refueling work, significant exposure work includes work on snubbers, a chemical decontamination of part of the primary system, and an examination of the core shroud. This core shroud work could lead to a significant increase in the scope and length of the outage, depending on the findings of the examination.

2.2 Control of Radiological Work

During this inspection, the licensee was continuing work in the spent fuel pool, a project which was begun in 1993. At the time of this inspection, the licensee loaded a TN-RAM Type B shipping cask in the spent fuel pool, conducted a dryness verification test on the cask and its contents, and had begun to decontaminate the outer surfaces of the cask in preparation for shipment to the Barnwell, South Carolina Low-Level Radioactive Waste Disposal Facility.

During the loading of the cask in the spent fuel pool on March 1, 1994, the inspector noted that after the cask lid was placed back on the cask, and the lifting rig reattached to the cask, work stopped for approximately 20 minutes, while the cask remained in the spent fuel pool. The licensee subsequently indicated that the cause of this delay

was a confusion in communications between the project leader on the refueling floor and the Quality Assurance Department. The procedure for loading of the cask has a Quality Control hold point prior to allowing the loaded cask to be removed from the spent fuel pool. As a result of miscommunications, no Quality Assurance representative was on the refuel floor when the cask was ready to be removed, nor had a waiver been obtained from Quality Assurance to allow for removal of the cask without their presence. Minimizing time in the spent fuel pool is a well recognized control mechanism for minimizing the amount of contamination to which the outer surfaces of the cask are exposed. The licensee had loaded this same cask three times previously using this same loading procedure, and on the previous shipment had kept the time of cask immersion in the spent fuel pool under 100 minutes in one instance. This loading was accomplished with an immersion time of approximately 145 minutes.

As part of this inspection, various tours of the radiologically restricted area were conducted. All postings were determined to accurately reflect current radiological conditions, all personnel were observed to be properly wearing their thermoluminescent dosimeters and direct reading dosimeters, and all locked High Radiation Areas were properly secured. On the refueling floor, only minor problems were identified by the inspector involving contamination control, and these instances were promptly corrected by the licensee.

Licensee Procedure RPP-21, Rev 9, "Locked High Radiation Area Key Control", requires that a Locked High Radiation Area Key Issue Log be maintained in the Radiation Protection Office by the main access control point, and that this log contain: Attachment 1 of AP-07.01; list of key restrictions; Locked High Radiation Area Key List; and the Locked High Radiation Area Key Issue Log. This procedure also requires that on a shiftly basis, an inventory of Locked High Radiation Area keys be conducted, and that this inventory be documented in the Radiation Protection Shift Log. On March 3, 1994, the inspector reviewed both the Issue Log Book, Shift Log Book and the Locked High Radiation Area key cabinets located in the Radiation Protection office. All keys were properly accounted for, and all documentation required by license procedure was determined to have been met.

2.3 Radiological Instrumentation

Repair and calibration of survey instrumentation and self reading dosimeters (SRDs) was the responsibility of the Instrument and Respiratory Supervisor, who reported through the Radiological Engineering General Supervisor to the RES Manager. The licensee maintained a computerized data base of all survey instruments and SRDs by location and/or wearer, and periodically printed a listing of these devices due for calibration. Longer term calibration and repair records were maintained in files located in the instrument calibration and repair facility, which had recently been moved into the 272' elevation of the old administration area. Most survey

instruments were calibrated using one of two JL Shepherd box irradiators, utilizing two cesium-137 sources. These irradiators were in turn calibrated on an annual basis utilizing a calibrated Victoreen Electrometer as a secondary transfer standard. Survey instruments were calibrated on a semi-annual basis. All instruments examined by the inspector in the plant were found to be in calibration as indicated by their calibration stickers, and the associated calibration records located in the instrument calibration facility.

Technicians working for the Health Physics General Supervisor were responsible for conducting daily source checks on survey instrumentation in use, and all instruments examined by the inspector located in the plant were found to be marked with a daily source check sticker. These same technicians are also responsible for issuance of survey instruments and SRDs through the instrument issue room located at the main radiologically restricted area access point in the new Administration Building. Interviews with the instrumentation calibration staff indicated that occasional accountability problems arise, especially with SRDs, that are issued by the instrument issue room, but not logged out as required by plant Procedure RPP-10, Rev 6, "Operation of the RES Department Issue Room". The inspector noted that the instrument room technician who issued him a SRD on February 28, 1994, did not appear to log in the issuance of the SRD, and a review of the computer records on March 2, 1994 indicated that no issue log entry had been made. This weakness in procedural compliance was brought to the licensee's attention, and a Deviation Event Report (DER) was initiated by the licensee. On March 4, 1994, while conducting a tour of the Interim Radwaste Facility, the inspector noted the presence of three radiological instruments, two miniscalers and a ratemeter. The inspector requested the licensee to verify that these instruments had been properly logged out of the RES Issue Room. The licensee's search revealed that the ratemeter, a Ludlum Model 177, Serial Number 353 had not been logged out of the RES Issue Room. Problems in the RES Department, especially in radiation protection, with procedural compliance has been noted by the Quality Assurance Department (see Section 2.5). Failure to follow radiological protection procedures is an apparent violation (50-333/94-07-01).

2.4 Internal and External Dosimetry

The licensee's program for internal and external dosimetry is under the direction of the Dosimetry Supervisor, who reports through the Radiological Engineering General Supervisor to the RES Manager. The licensee utilizes thermoluminescent dosimeters (TLDs) to measure the occupational exposure dose of record, and SRDs for daily tracking of occupational exposure. The licensee's processing of TLDs was certified acceptable by the National Voluntary Laboratory Accreditation Program (NVLAP), with the last intercomparison between the licensee and NVLAP documented by a letter from NVLAP dated February 1, 1994.

The licensee utilized two Panasonic Model 710A TLD readers. Control charts for

each reader, including response plots for the photon counter and frequency counter versus time, were maintained both in a hard copy format and in a computer data base. On a quarterly basis, the licensee processed blind samples provided under a contract with Atlan-Tech, Inc. All results for the past two years were acceptable, with the exception of the November 1993 test for Category III (deep and shallow). One of the five TLD results was statistically significantly outside the acceptable range, however, these TLDs were spiked at the extreme low end of the testing range for this category. This TLD was included in the group and as a result, the combined average failed for this category. Subsequent to this test, the licensee successfully met the criteria for Category III in another set of blind samples. No other problems have been subsequently observed.

As part of this inspection, the following licensee procedures were reviewed:

PDP-1, Rev 8, "Dosimetry Records"
PDP-9, Rev 4, "Investigation and Evaluation of Bioassay Results"
PDP-10, Rev 2, "Whole Body Counter Chair Operation and Calibration"
PDP-11, Rev 4, "Dose Assessment of Personnel Contamination Incidents"
PDP-14, Rev 2, "Special Dosimetry Issue, Control, and Processing"
PDP-15, Rev 2, "Standup Whole Body Counting Operation and Calibration"
PDP-19, Rev 0, "External Dosimetry Program and Quality Assurance"
PDP-20, Rev 0, "TLD Inspections and Qualifications"
PDP-21, Rev 0, "QC Checks and Calibration of the Panasonic 710A TLD Reader"
PDP-22, Rev 0, "TLD Processing"
PDP-27, Rev 0, "Issue, Replacement and Return of Standard Dosimetry"
PDP-31, Rev 0, Preparing Worker Exposure Reports (Periodic, Termination and Requests)"

All procedures were determined to accurately reflect plant operations, and to properly reflect program requirements found in Title 10, Code of Federal Regulations, Part 20.

2.5 Assurance of Quality

The licensee's program for assurance of quality in the radiation protection program area includes the conducting of periodic Quality Assurance (QA) Surveillances and audits. The inspector reviewed all appropriate QA Surveillance Reports (SRs) and audit reports for QA activities conducted in the radiation protection area since October 1993. Listed below are the SRs and audit report reviewed.

SR-1641, "Refuel Floor Work Activities"

SR-1648, "10-142 Cask Shipment #858"

SR-1654, "TN RAM Shipment 11-93-1090"

SR-1662, "In-Place Filter Testing"

SR-1664, "Personnel Awareness of the Revised 10 CFR 20"

DRAFT SR-1668, "RCA Control Points Contamination Control"

Audit #823, "Radiological Survey Program & Radiation Protection Procedures"

As a result of numerous deficiencies, especially in the area of procedural compliance, identified in these SRs and audit, and documented as Deviation Event Reports (DERs), a master DER, 94-0131, was written noting an adverse trend for procedural compliance in the radiation protection area. Two additional examples of procedural non-compliance were identified by the inspector, as described in Section 2.3 of this report (Violation: 50-333/94-07-01).

The licensee's QA program continues to be a notable licensee strength in identifying programmatic weaknesses. Licensee corrective actions have been, however, ineffective in some instances in preventing recurrence (see Section 2.3).

## 3.0 Exit Interview

The inspector met with the licensee representatives denoted in Section 1 at the conclusion of the inspection on March 4, 1994. The inspector summarized the purpose, scope and findings of the inspection. The licensee acknowledged the findings of the inspection.