### U. S. NUCLEAR REGULATORY COMMISSION

### REGION III

Report No. 50-440/86031(DRSS)

Docket No. 50-440

License No. NPF-58

Licensee: Cleveland Electric Illuminating Company P. O. Box 5000 Cleveland, OH 44101

Facility Name: Perry Nuclear Power Plant, Unit 1

Inspection At: Perry Site, Perry, Ohio

Inspection Conducted: November 17-21, 1986

hegy for Inspector: D. E. Miller

12-9-86 Date

reger, Chief Approved By:

Facilities Radiation Protection Section

## 12-9-86 Date

### Inspection Summary:

Inspection on November 17-21, 1986 (Report No. 50-440/86031(DRSS))

<u>Areas Inspected:</u> Routine unannounced inspection of the licensee's radiation protection program including organization and management controls, control of radioactive materials and contamination, facilities and equipment, and audits and surveillances. Also reviewed were selected IE Information Notices. Results: No violations or deviations were identified.

## DETAILS

### 1. Persons Contacted

\*W. Burkhart, Radwaste Unit Supervisor, Perry Plant Operations Department (PPOD)

\*S. Cashell, Licensing Engineer, Perry Plant Technical Department (PPTD) \*R. Clifford, Lead Engineer, PPTD

\*D. Jones, Licensing Engineer, PPTD

\*V. Miqak, General Supervising Engineer, Maintenance and Modification Quality Section, Nuclear Quality Assurance Department

\*P. Russ, Lead, Compliance Engineering Unit, PPTD

\*A. Silakowski, General Supervising Engineer, Reliability and Design Assurance Section, Nuclear Engineering Department (NED)

\*F. Stead, Manager, PPTD

\*T. Swansiger, Lead Supervisor, Material Control Element, PPOD

\*D. Takacs, General Supervisor-Maintenance, PPOD

\*J. Traverso, Health Physics Engineer, Engineering Project Support Services (EPSS), NED

\*S. Wojton, General Supervising Engineer, Radiation Protection Section (RPS), PPTD

\*F. Whitaker, Radiation Protection Analyst, RPS, PPTD

\*L. VanDerHorst, Plant Health Physicist, Health Physics Unit, RPS, PPTD

\*R. Vondrasek, General Supervising Engineer, EPSS, NED

\*G. O'Dwyer, NRC Resident Inspector

The inspector also contacted several licensee technicians and supervisors.

\*Denotes those present at the exit meeting.

# 2. General

This inspection, which began at 1:00 p.m. on November 17, 1986, was conducted to examine selected portions of the licensee's radiation protection program including organization and management controls, control of radioactive materials and contamination, facilities and equipment, and audits and surveillances. Also reviewed were selected IE Information Notices. Several tours of licensee facilities were made to review implementation of radiological controls and housekeeping. Postings, controls, and housekeeping appear adequate.

### 3. Organization and Management Controls

The inspector reviewed the licensee's organization and management controls for the radiation protection program including changes in the organizational structure and staffing, effectiveness of procedures and other management techniques used to implement these programs, experience concerning self-identification and correction of program implementation weaknesses, and effectiveness of audits of these programs. Audits are discussed in Section 6. The licensee has implemented a Radiological Occurrence Report (ROR) system for documentation and followup of radiological events. Only six RORs were written during 1986 to date. The followup and resulting corrective actions for the six events appear adequate and appropriate.

The licensee's Health Phys cs Unit (HPU) is composed of 33 persons: a plant health physicist, a radiation protection analyst, two junior radiation protection analysts, a senior radiation protection technician (radwaste), 14 radiation protection technicians, eight senior engineering technicians, two engineering technicians, and two junior engineering technicians; the engineering technician positions are progression steps to the radiation protection technician position. Five radiation protection technicians are designated as lead shift technicians, and are normally the senior HPU representatives onsite during back shifts and weekends. HPU technicians do not rotate through chemistry unit technician duty positions.

The plant health physicist reports to the general supervising engineer (GSE), radiation protection section. Also reporting to the GSE are the radiation protection support, safety, and chemistry units.

The HPU was supplemented by 12 contractor technicians and four contractor clerks during the October/November maintenance outage to help provide radiation protection job coverage.

Several project tasks/duties are assigned to individual radiation protection technicians; such tasks include calibration and operational oversight of sorting equipment, calibration of portal monitors, portable instrument calibrations, etc. This organizational structure appears desirable in that the technician progression system can include delegation of responsibilities to technicians who display adequate aptitude.

The total number of technicians would appear adequate for normal plant operations if all were available for job coverage. With five technicians designated as lead (supervisory) technicians, and several technicians assigned paraprofessional activities, it appears that additional technicians will be needed for job coverage during routine operations. This matter was discussed at the exit meeting. (Open Item No. 440/86031-01).

During the inspection and at the exit meeting the inspector discussed with the licensee the importance of performance of comprehensive investigations for radiological incidents, particularly for those that resulted in, or could have resulted in, overexposures to radiation or excessive uptakes of radioactive materials.

No violations or deviations were identified.

### 4. Control of Radioactive Materials and Contamination

The inspector reviewed the licensee's program for control of radioactive materials and contamination, including: changes in instrumentation, equipment, and procedures; effectiveness of survey methods, practices, equipment and procedures; adequacy of review and dissemination of survey data; effectiveness of methods of control of radioactive and contaminated materials; and management techniques used to implement the program and experience concerning self-identification and correction of program implementation weaknesses. Audits are discussed in Section 6.

The licensee's personal contamination monitoring program consists of friskers located at or near step-off-pads and Gamma-10 portal monitors; one Gamma-10 is located at each controlled area exit and several are located at the exit from the protected area. The Gamma-10 monitors are operated in the walk-through mode; in this mode the monitor detection sensitivity is about 200 nanocuries, for Co-60 and Cs-137, midway between the detector columns. The inspector discussed with the licensee the desirability of operating the portal monitors in the "time-out" mode; in this mode, the person being monitored must stand in the monitor for about ten seconds during a timed count cycle. By operating the monitors in the "time-out" ten nanocuries for Co-60 and Cs-137. This matter was discussed at the exit meeting and will be further reviewed during future inspections. (Open Item No. 440/86031-02).

The licensee has purchased and made operational a Hydro Nuclear Services, Inc., dry active waste (DAW) segregation/volume reduction system. The system consists of a sorting monitor, shredder, conveyor monitor, and a bag monitor. The monitors are being operated essentially in accordance with vendor procedures which have been, or are being, mirrored in station procedures. Calibration and testing of the monitors is performed using vendor supplied radioactive sources. The monitor alarm settings are as suggested by the vendor. The sorting monitor is installed in a temporary location in the radwaste building; the monitor will soon be permanently installed in a shielded room in the radwaste building, where an inoperable reverse osmosis unit is being removed. The conveyor and bag monitors are installed in a semi-trailer located adjacent to the Unit 1 turbine building; according to the licensee, these monitors will be relocated to a more suitable place if one is found. The following newly developed procedures were reviewed by the inspector; the procedures appear adequate.

- OM11B-HPI-J22, Revision O, Calibration of the Sorting Monitor System.
- OM11B-HPI-J27, Revision O, Calibration of the Bag Monitor System.
- OM11B-HPI-K2, Revision O, Bag Monitor System Operation.
- OM11B-HPI-K3, Revision O, Conveyor Monitor System Operation.

The monitors are operated by station operations personnel; technical assistance is provided by Health Physics Unit persons. No problems were noted during the inspector's review.

No violations or deviations were identified.

# 5. Facilities and Equipment

The inspector selectively reviewed completed and proposed changes to facilities and equipment, including:

- A tool storage area, designed to house clean tools and tools with fixed contamination, has been built in the intermediate building. The storage area is being stocked with tools; the tools are to be checked out, used in the controlled area, deconned, and then returned to the storage area. Adequacy of area extent is questionable.
- A tool decontamination facility is to be built in the intermediate building near the tool storage area. The facility is to contain liquid abrasive and Freon cleaners, a double sink, work tables, and storage and supply shelves.
- A major alteration of the control rod drive repair facility is planned. The alteration is to include improved exhaust ventilation, shielding, and revised handling equipment.
- A building to provide additional short-term storage space for packaged radwaste is planned to be built within the protected area in the near future.
- DAW sorting equipment, which is discussed in Section 4.

No violations or deviations were identified.

# 6. Audits and Surveillances

The inspector selectively reviewed onsite audits and surveillances of the radiation protection and radwaste management programs conducted since May, 1986. Extent of audits, qualifications of auditors, and adequacy of corrective actions were reviewed.

A quality assurance audit of the radiation protection program was conducted during the period June 17-30, 1986. The purpose of the audit was to assess the program's readiness to control radiation exposures and to comply with station procedures. Essentially all aspects of the program were included in the audit, including staffing, qualifications, and training of Health Physics Unit personnel. Two minor problems concerning radiation work permit implementation and health physics technician overtime tracking were identified; these problems have since been corrected. The audit team, which included a health physics professional, concluded that the overall health physics program appeared ready to support an operating nuclear facility. In addition to the audit, several surveillances of operational health physics procedures were conducted by quality assurance personnel; one minor finding concerning a missed response check of a frisker resulted, and has since been corrected.

A quality assurance audit of the solid radwaste management program was conducted during the period July 17 through August 15, 1986. The audit evaluated the station's compliance with applicable federal, state, and burial site radioactive material packaging and shipping requirements. Two problems were identified during the audit. One concerned failure to interface with the Procurement Quality Unit before contracting vendor services to be supplied/performed by NUS Process Services Corporation; this matter has since been corrected. The second problem involved shortcomings in the quality assurance inspection program for radioactive materials shipments, and the extent of training for inspectors; licensee followup and corrective actions for these shortcomings will be reviewed during a future inspection. (Open Item No. 440/86031-03).

Extent of audits, qualifications of auditor, and adequacy of corrective actions are good.

No violations or deviations were identified.

7. IE Information Notices

The inspector reviewed the licensee's internal responses to selected IE Information Notices. The licensee's evaluations, conclusions, and corrective actions appear appropriate and adequate. The following notices were reviewed.

<u>No. 86-41:</u> Evaluation of Questionable Exposure Readings on Licensee Personnel Dosimeters. In response to the notice, the licensee strengthened two procedures by incorporating additional investigation and followup requirements.

No. 86-24 and 85-48: Respirator Users Notice; Increased Inspection Frequency for Certain Self-Contained Breathing Air Cylinders. The licensee does not use the Luxfer cylinders referenced in the notice.

No. 86-23: Excessive Skin Exposures Due to Contamination With Hot Particles. The licensee's internal response addresses special handling or laundry with potentially high levels of contamination. The licensee is developing a procedure to assess skin dose due to hot particles.

No. 86-22: Underresponse of Radiation Survey Instruments to High Radiation Fields. The licensee does not, and does not intend to, use the subject instrument.

No. 85-92: Surveys of Wastes Before Disposal From Nuclear Reactor Facilities. The licensee has a waste survey program which uses Hydro Nuclear Corporation conveyer, sorter, and bag monitors. The monitors are being used in accordance with station procedures; calibrations are performed as recommended by the equipment's vendor. No. 85-81: Problems Resulting in Erroneously High Reading with Panasonic 800 Series Thermoluminescent Dosimeters. The station does not use this dosimeter.

# 8. Exit Meeting

The inspector met with licensee representatives (denoted in Section 1) at the conclusion of the inspection on November 21, 1986. The inspector summarized the scope and findings of the inspection. The inspector also discussed the likely information content of the inspection report with regard to documents or processes reviewed by the inspector during the inspection. The licensee identified no such documents/processes as proprietary. In response to certain items discussed by the inspector, the licensee:

- a. Acknowledged the inspector's comment about the apparent need for additional radiation protection technicians. (Section 3)
- Acknowledged the inspector's comment about the importance of performance of comprehensive investigations of radiological events. (Section 3)
- c. Stated that the Gamma-10 portal monitors will be adjusted to operate in the "time-out" mode by December 31, 1986. (Section 4)