#### U.S. NUCLEAR REGULATORY COMMISSION

#### REGION III

Report No. 50-440/93012(DRSS)

Docket No. 50-440

License No. NPF-58

Licensee: Cleveland Electric Illuminating Company 10 Center Road Perry, OH 44081

Facility Name: Perry Nuclear Power Plant, Unit 1

Inspection At: Perry Site, Perry, Ohio

Inspection Conducted: May 10-14, 1993

Inspector: M.A. Kunowski

Approved By: M. Dohumachur

M. C. Schumacher, Chief Radiological Controls Section 1

June 8, 1993 June 8, 1983

#### Inspection Summary

Inspection on May 10 - 14, 1993 (Inspection Report No. 50-440/93012(DRSS)) Areas Reviewed: Routine, announced inspection of the radiation protection program (Inspection Procedure (IP) 83750) and a review (IP 86750) of the Interim Radioactive Waste Storage Facility (IRSF). The licensee was in a maintenance outage to repair a service water pipe break. In addition, the suppression pool was cleaned and new emergency core cooling system strainers were installed.

Results: One violation for a failure to perform an adequate survey related to suppression pool work (during a previous outage) and one non-cited violation for failure to properly label a container of radioactive material were identified. Other aspects of the licensee's radiation protection program were adequately implemented. Radiological controls over suppression pool diving were well planned and implemented. Construction of the IRSF was nearly complete, and testing of equipment and development of procedures were in progress.

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# DETAILS

#### 1. Persons Contacted

T. P. Barton, Senior Radiological Assessor
J. W. Detchemendy, Quality Assurance Engineer
K. P. Donovan, Manager, Licensing Section
H. L. Hegrat, Supervisor, Compliance
D. P. Igyarto, Plant General Manager
A. H. Lambacher, Compliance Engineer
W. L. McCoy, General Supervisor, Health Physics Planning
J. J. Traverso, General Supervisor, Radiation Protection Technical Unit
P. Volza, Manager, Radiation Protection Section
B. D. Walrath, Manager,

D. C. Kosloff, NRC Senior Resident Inspector

The individuals listed above attended the Exit Meeting on May 14, 1993.

The inspector also contacted other licensee personnel during the inspection.

# 2. Audits and Appraisals (IP 83750)

The inspector reviewed the report of the annual assessment of the as-low-as-reasonably-achievable (ALARA) program for 1992. The assessment, conducted by the corporate health physicist and the senior radiological assessor, both experienced health physicists, appeared to have been an indepth and candid review. Previous assessments were of similar high quality. Station response to the 1992 assessment recommendations was prompt and generally appropriate.

The inspector also reviewed the results of the station's guarterly quality and effectiveness assessment of the radiation protection program for the first guarter of 1993. In this assessment, the radiation protection (RP) section, which includes the chemistry and health physics groups, was given a "strength" for its thorough investigations of radiological incident. and given a "weakness" for its control of two jobs in the suppression pool in February 1993 that resulted in the contamination of several workers and RP personnel (see also Section 5). The inspector's independent review supported both of these findings. An additional topic reviewed during the assessment was personnel contamination events, particularly those occurring in "clean" areas of the radiologically restricted area (RRA). To partially address this matter, the station began to clean areas on a routine schedule and to involve the first-line supervisors in the investigations of personnel contaminations. The effectiveness of this effort will be reviewed during future routine inspections.

No violations of NRC requirements were identified.

3. <u>Radiation Protection Section Reorganization and Training and</u> <u>Qualifications of Personnel (IP 83750)</u>

The inspector reviewed several recent changes in the Radiation Protection Section (RPS) organization, some of which were made in response to an internal review of staffing needs and some in response a station-wide review by an external group. Included in these changes were the re-assignments of an experienced and knowledgeable chemist to the quality assurance group and the former supervisor of the corporate Radiological and Environmental Engineering Unit to the RPS, and the selection of a new Plant Health Physicist. A review by the inspector indicated that this individual met the qualifications of Regulatory Guide 1.8, September 1975, for Radiation Protection Manager, as required by Technical Specification 6.3.1. No problems were identified by the inspector with these changes. The licensee also indicated that the Corporate Health Physicist will be resigning shortly. No replacement has been named yet.

In addition, the licensee continued an outage assistance program with the Davis-Besse plant sending two experienced RP supervisors to help during a recent refueling outage. This program appears to be a good means to enhance the technical and supervisory skills of the individuals involved.

No violations of NRC requirements were identified.

# 4. External Exposure Control, Including ALARA Considerations (IP 83750)

In the first half of 1993, the licensee had extensive outage time. From January 10 to March 11, a maintenance outage was conducted to identify and remove leaky fuel, and from March 26 to June 2, another outage was taken to repair a service water pipe rupture. All of the emergency core cooling system suppression pool suction strainers were also replaced during the recent outage, and significant time was spent removing debris from the suppression pool, the drywell, and the containment. All of the outage work to date has helped to drive the station's dose total, as of June 7, to approximately 180 person-rem (1.8 person-Sv). The inspector reviewed external exposure and contamination controls for the diving conducted as part of the strainer replacement. These controls were well planned and implemented, an improvement over suppression pool cleaning work during the earlier outage, as discussed in Section 5.

No violations of NRC requirements were identified.

### 5. Internal Exposure Control, Including ALARA Considerations (IP 83750)

The inspector reviewed the circumstances of two events in which unanticipated levels of contamination were found during suppression pool work. Although the resultant intakes of radioactive material were well below regulatory limits, the poor communications and inadequate surveys that caused the intakes represented a weakness in the radiological controls program. The events are discussed below.

In the late evening on February 7, 1993, workers were in a boat in the suppression pool attempting to vacuum the bottom. After one of the crews was found to be contaminated, work was halted. A subsequent survey, in which RP personnel (two supervisors) were also contaminated. found much higher contamination levels (several million disintegrations per minute per 100 cm<sup>2</sup> (dpm/100 cm<sup>2</sup>)) on the structural support pieces for the grating above the pool than anticipated (100,000 dpm/100 cm²) at the start of the job. Workers and RP personnel grasped these pieces to steady and propel the boat. Air sample and whole-body count data indicated that the maximum airborne radioactive material concentration during the job was equivalent to approximately 7 maximum permissible concentration-hours (7 MPC-hrs), well below the 520 MPC-hr limit. The licensee's subsequent investigation of this event determined that instead of using data from a pre-job contamination survey, the Radiation Work Permit (RWP) was prepared using an estimate based on the recollection of an RP staff person. Poor communications between the day and night shift RP groups was also identified as contributing to this event. On February 11, 1993, as part of immediate corrective action, RP management met with RP personnel to discuss the event, including the personnel error and poor communication aspects.

On February 17, 1993, two of six workers and an RPT involved with the disassembly of a diver's platform from the suppression pool had a minor intake of radioactive material (maximum of 8.5 MPC-hrs). Five of the seven individuals were also externally contaminated. The licensee's subsequent investigation determined that no pre-job contamination survey was performed and that the survey performed during the job was cursory and inadequate. Inappropriately, RP personnel assumed that contamination levels would be similar to those found earlier on two other platforms. Unlike those platforms, however, this platform had just recently been submerged in the suppression pool (which was lowered several hours prior to the job) and had not been rinsed with water after the pool level was changed. In addition, the use of dry rags for wiping the pieces of the platform instead of wet rags contributed to the event and communications between the day and night shift RP groups were poor.

Corrective actions included immediate counselling of involved RP personnel, strengthening of shift turnovers, and special training on communications. Although the failure to adequately survey the platform was identified by the licensee and appropriate corrective actions were taken, actions taken on February 11 for the suppression pool boat ride event should have prevented this problem. Consequently, a Notice of Violation is being issued for a failure to perform an adequate survey to ensure that airborne radioactive material concentrations would likely not exceed the limit of 10 CFR 20.103(a)(1) (Violation No. 50-440/93012-01(DRSS)).

One violation of NRC requirements was identified.

# <u>Control of Radioactive Materials and Contamination</u>, <u>Surveys</u>, <u>and</u> <u>Monitoring (IP 83750)</u>

Inspection of RRAs in several buildings and of several outdoor areas by the inspector identified no problems with postings and housekeeping. Dose rate measurements made by the inspector were in agreement with those of the licensee.

One problem regarding labelling of containers of radioactive material was reviewed by the inspector. On April 14, 1993, during routine weekly surveys, RP personnel determined that a drum of radioactively contaminated, acetone-soaked rags was placed in an overpack several days ago without a "Caution Radioactive Material" warning label attached to the outside of the overpack. The licensee indicated to the inspector that the contamination was mainly Co-60, Zn-65, and Mn-54; the contact dose rate on the drum was 150 mrem (1.5 mSv) per hour. The failure to label the overpack is contrary to 10 CFR 20.203(f); however, the licensee identified this violation and it is not being cited because the criteria specified in Section VII.B.(1) of the "General Statement of Policy and Procedures for NRC Enforcement Actions," (Enforcement Policy, 10 CFR Part 2, Appendix C) were satisfied.

One non-cited violation was identified.

### 7. Interim Radioactive Waste Storage Facility (IP 86750)

The inspector inspected the processing and storage buildings of the Interim Radioactive Waste Storage Facility (IRSF), including the roof of the storage building where the ventilation system exhausts. Construction of the buildings was nearly complete, and procedure development and testing of waste processing and radiation monitoring equipment was in progress. No major problems were identified; however, during testing of the shredder/compactor, the inspector observed that containers of trash passed close to two fire suppression system pipes when mechanically hoisted to the waste hopper. The inspector was concerned that trash projecting out the top of the containers could strike and damage the pipes. The licensee stated that administrative controls (possibly in a procedure) on the loading of the containers would be put in place to prevent this. These controls will be reviewed during a future inspection (Inspection Followup Item No. 50-440/93012-02(DRSS)).

No violation NRC requirements were identified.

#### Contaminated Soil (IP 86750)

As discussed in a previous NRC report (No. 50-440/92025(DRSS)), the licensee had several thousand cubic feet of slightly contaminated soil onsite and considered storing the soil indefinitely in concrete storage containers in the outdoor storage area of the IRSF. Currently, the

licensee was pursuing shipping the soil in the summer of 1994 to a vendor for possible treatment and disposal. This matter will be reviewed during future inspections.

No violations of NRC requirements were identified.

### 9. Exit Meeting

The scope and findings of the inspection were reviewed with the licensee (Section 1) on May 14. Topics included the 1992 audit of the station ALARA program (Section 2), the reorganization of the RP group (Section 3), the cited and non-cited violations (Section 5 and 6), and the IRSF (Section 7). The licensee acknowledged the inspector's comments and did not identify any material reviewed during the inspection as proprietary.