

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-315/93021(DRSS); 50-316/93021(DRSS)

Dockets No. 50-315; 50-316

License Nos. DPR-58; DPR-74

Licensee: Indiana Michigan Power Company
1 Riverside Plaza
Columbus, OH 43216

Facility Name: D. C. Cook Nuclear Plant, Units 1 and 2

Inspection At: D. C. Cook Site, Bridgman, Michigan

Inspection Conducted: October 26 through November 4, 1993

Inspectors: William Snell for 11/15/93
Thomas J. Kozak Senior Radiation Specialist Date

William Snell for 11/15/93
Ronald A. Paul Senior Radiation Specialist Date

Approved By: William Snell 11/15/93
William Snell, Chief Radiological Programs Section 2 Date

Inspection Summary

Inspection on October 26 through November 4, 1993 (Reports No. 50-315/93021 (DRSS); 50-316/93021(DRSS))

Areas Inspected: Routine inspection of the licensee's radiation protection program (IP 83750), including licensee action on previous inspection findings, changes, audits and appraisals, a review of condition reports, external exposure control, and tours of the station.

Results: The licensee's program for protecting the health and safety of the public appeared to be very effective. An isolated event in which poor communications between contract painters and radiation protection personnel occurred which resulted in minor facial and internal contaminations to the workers. Dose expenditure for 1993 to date was very low. Tours of the radiologically controlled areas indicated that management attention to material conditions in the plant was effective as there was uninhibited access to all safety related equipment. No violations or deviations were noted during the inspection.

3



DETAILS

1. Persons Contacted

*A. Blind, Plant Manager
*D. Noble, Superintendent Radiation Protection
*P. Hoppe, General Supervisor Radiation Controls
T. Naidu, Quality Assurance
J. Fryer, General Supervisor Radioactive Material Control
J. Rutkowski, Assistant Plant Manager
D. Loope, Superintendent Chemistry

*D. Williams, Corporate Health Physicist (by telephone)

*D. Hartman, Resident Inspector

The inspectors also interviewed other licensee personnel in various departments in the course of the inspection.

*Present at the Exit Meeting on November 2, 1993

2. General

The licensee requested that a meeting be held with NRC radiation protection personnel which was subsequently conducted in the NRC Region III office on November 10, 1993. Items discussed during the meeting included the licensee's recent performance in the radiological controls area and plans for the future with regards to dose estimates, contamination control, and upcoming outage tasks.

3. Licensee Action on Previous Inspection Findings (IP 93750)

(Open) IFI (315/92017-01; 316/92017-01): Condensation of steam released via the unit 1 blowdown startup flash tank results in a radioactive liquid release to a storm sewer leading to Lake Michigan. This condition occurs when the startup flash tank is used at above 30 percent blowdown flow, which is occasionally required to maintain system chemistry. The excessive condensation results from a design deficiency concerning the blowdown moisture separator and associated piping. The licensee has initiated a design change to correct this deficiency and minimize water carryover. In the interim, the licensee established procedures for expanded sampling along the release pathway when the above condition exists. The licensee has also repaired condenser tube leaks and installed a reverse osmosis system upstream of the steam generators to minimize further corrosion. The most recent lakeshore sand samples taken by the NRC and analyzed by a vendor appear to fall in the range of area background levels for cesium-137. This item will remain open pending completion of the design change.

No violations or deviations were identified.



4. Changes (IP 83750)

The health physics staff has remained stable. The most significant change since the previous inspection has been the addition of a professional health physicist to the dosimetry staff; no other significant changes were made to the overall administration of the radiation protection program.

No violations or deviations were identified.

5. Audits and Appraisals (IP 83750)

The inspectors reviewed several Quality Assurance Surveillance Reports covering audits of the radiation protection program including, dosimetry, radioactive material control, training, personal contaminations, radioactive material receipt, and ALARA review and planning. Although deviations were noted in thermoluminescent laboratory training, exposure documentation, and radioactive material control and procedure reviews, it appears they did not detract from the overall effectiveness of the program. Also reviewed was an audit conducted in May 1993, which assessed dose exposure records from 1988 through 1990. The results of this review identified only 3 of 103 files reviewed contained minor errors; no widespread problems with dose assessment were noted. All audits reviewed during this inspection indicated good overall performance.

No violations or deviations were identified.

6. Condition Reports (CRs) (83750)

The inspectors reviewed licensee generated CRs identifying radiological control problems. In general, the CRs reported minor radiological problems and recommended or required actions to be taken by the licensee to address the situation and prevent recurrence.

One of the reports detailed the circumstances surrounding minor facial contaminations and intakes by contract painters while hand sanding the floor of a contaminated room. The painters were working under radiation work permit (RWP) No. 6137, which was written for hand sanding of walls only and required protective clothing but no respirators or face shields. It was the radiation protection technicians' (RPT) understanding when writing RWP 6137 that no work was to be performed on the floor. The painters indicated they had informed the RPTs of their intent to sand the floors during a discussion with them before the work began. Surveys of the walls and floor were performed before the sanding began and the contamination levels were less than 1000 disintegrations per minute per 100 cm² (dpm/100cm²). However, significant levels of loose surface contamination on the floor were previously painted over and had the RPTs understood that work was to be performed on the floor they would have specified additional radiological controls. Surveys of the area after the incident indicated contact dose rates on the floor of about 10 millirem/hour (100 microsieverts/hour) gamma and 360 millirad/

hour (3.6 millisieverts/hour) beta. Loose contamination levels of 20,000 to 70,000 dpm/100cm² were found on the floor, while the walls were still less than 1000 dpm/cm². The total internal dose to the workers was estimated to be less than 5 millirem (50 microsieverts).

Apparent root causes for this event included communication problems between the workers and radiation protection (RP) and a lack of RP oversight of worker activities. The licensee's review of this CR was not completed by the end of the inspection. Therefore, the corrective actions will be reviewed during a future inspection.

No violations or deviations were identified.

7. External Exposure Control (83750)

The inspectors reviewed the licensee's program for controlling, detecting, and documenting occupational radiation exposure at the facility.

The licensee effectively controlled personnel radiation exposure during the past year as the total radiation dose to date in 1993 was approximately 45 person-rem. Alarming and thermoluminescent dosimeters were used to determine personnel dose during each entry into a radiologically controlled area. No problems were noted in the control and detection of radiation dose to personnel.

The inspectors selectively reviewed personnel exposure records from 1988 through 1992. The inspectors did not find any discrepancies in the records that were reviewed and verified that termination letters were routinely sent to former employees in a timely manner as required by regulations.

The licensee completed an exhaustive dose reconstitution project in 1990 which allows for easy access to their former employees' dose history at the facility. Thus, when a request is received by the licensee for dose history at the facility from a previous employee or another licensee, the information can be readily retrieved. Although the licensee did not maintain a log of such requests, indications were that the information was provided within 30 days as required by regulations. One of the reasons the licensee completed the reconstitution project was because their dosimetry records were not kept in a very organized way as documented in a previous inspection report (IR 50-315/87002; 50-316/87002 (DRSS)). In fact, the licensee had determined that, in all likelihood, some dosimetry records from the early years of plant operation were lost. The reconstitution project was effective in organizing all available dosimetry records such that they are now readily available. Neither the licensee nor the inspectors were able to determine which records, if any, were missing but indications were that dosimetry records were available for the majority of personnel that have been monitored at the facility since it began operating. The inspectors found no problems with the licensee's current dosimetry record keeping practices.

D

The licensee is a member of INDEX which is a service that maintains a database of security, training, and dosimetry records for individuals who have worked at a site that subscribes to INDEX. The concept behind maintaining current records for individuals in INDEX is that when an individual reports for work at a site subscribing to INDEX, that site is responsible for obtaining all records from previous employers and entering them into the system. Each INDEX site is required to conduct internal audits to verify the information entered into the system is correct. INDEX is also required to conduct independent audits to verify the information entered into the system is correct. If an individual reports for work to Cook and has been at a site that also subscribes to INDEX, Cook retrieves the individual's records from the system. The individual is required to sign the form which is generated and the dosimetry records are used without any further verification that they are complete and correct. The licensee's internal audits have found errors in the information provided through INDEX, including some related to the total dose reported (e.g. math or transposition problems), but none have resulted in an exposure in excess of regulatory limits.

No violations or deviations were identified.

8. Surveillance-Plant Tours (IP 83750)

Based on several tours of the plant including the auxiliary and radwaste buildings, and the RHR and CVCS tank rooms, the inspectors noted the general areas of the station were clean and well maintained. Some minor problems were identified involving storage of tools, equipment and clothing; they were effectively addressed by the station.

No violations or deviations were identified.

9. Exit Interview

The scope and findings of the inspection were reviewed with licensee representatives (Section 1) at the conclusion of the inspection on November 2, 1993. The licensee did not identify any documents as proprietary. The following specific items were discussed with the licensee during the exit meeting:

- * The communication problems which led to the unplanned facial and internal contaminations of painters,
- * The excellent housekeeping throughout the radiologically controlled areas,
- * The low dose expenditure to date in 1993.

