

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report Nos. 50-315/92021(DRSS); 50-316/92021(DRSS)

Docket Nos. 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: November 17 through December 17, 1992

Inspector: *M. A. K. Kowalski*
R. A. Paul
M. A. K. Kowalski

12-22-92
Date

Approved By: M. C. Schumacher, Chief
Radiological Controls Section 1

12-22-92
Date

Inspection Summary

Inspection on November 17 through December 17, 1992 (Report Nos. 50-315/92021(DRSS) and 50-316/92021(DRSS))

Areas Inspected: Routine inspection of licensee's radiation protection program (IP 83750), including audits and appraisals, internal exposure, outage ALARA, and contamination control. In addition, the inspector reviewed licensee follow up to a previous violation and to previously identified inspection items.

Results: The licensee's radiation protection program was generally well conducted. Station dose for 1992 at 500 person-rem was consistent with the goal despite considerable unanticipated emergent work. ALARA initiatives and controls reviewed for the outage were good. The licensee improved its understanding of ground water migration from the absorption pond with a hydrological study and increased sampling, but has been slow to develop procedural guidance for investigation if elevated activity is found in the turbine room sump or in sampling wells. No violations were identified.

DETAILS

1. Persons Contacted

- *A. Blind, Plant Manager
 - D. Foster, Radioactive Material Specialist
 - D. Noble, General Supervisor Health Physics
- *S. Lehrer, General Supervisor Radiation Controls
- *J. Fryer, General Supervisor Radioactive Material Control
- *J. E. Rutkowski, Assistant Plant Manager
- *D. Loope, Superintendent Radiation Protection
- *H. Springer, ALARA Supervisor
- *D. Williams, Corporate Health Physicist (by telephone)

- *J. Isom, Senior Resident Inspector
- *D. Hartman, Resident Inspector

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

*Present at the Exit Meeting on December 4, 1992

2. Licensee Action on Previous Inspection Findings (IP 92701)

(Closed) IFI (315/92010-03; 316/92010-03): No as-found testing of ventilation system charcoal filters before replacement. The procedure "Air Cleaning Systems" has been revised to require the performance of as-found testing of Technical Specification ventilation system charcoal filters at change out.

(Open) Open Item (315/90012-02; 316/90012-02): Review tritium migration in ground water affected by turbine rooms sump (TRS) releases to the onsite absorption pond. The licensee continues to report tritium in onsite sampling wells at levels well below regulatory limits and below required reporting levels. The levels are lower than earlier years when Unit 2 steam generators, since replaced, were leaking but somewhat higher than in 1990-91 owing to Unit 1 steam generator tube leaks. The leaks were recently repaired and levels are expected to decline again. Dose implications for offsite water users appeared negligible.

One-time samples taken in 1990 from the eight domestic water wells north of the plant and the two no longer used domestic wells south of the plant were negative except for one marginal (350 pCi/liter) sample to the south. Samples from five of six new wells added in 1992 near the north (2) and south (4) boundaries were negative; the other well, southwest of the absorption pond, showed tritium at 1000 pCi/liter in the first quarter and decreased by half over the next two quarters. Although not conclusive, these results appeared consistent with the licensee's hydrology information indicating migration of water from the absorption pond mainly toward the lake with little effect on wells offsite. The licensee has established a concentration level in the sump

discharge to the absorption pond which would trigger an investigation of potential ground water effects but has not yet developed procedural guidance to implement this requirement. The licensee has also not yet established well concentrations that would trigger an investigation including possible additional offsite well sampling. This item will remain open until these matters are resolved.

(Closed) IFI (315/92010-02; 316/92010-02): Liquid radwaste discharge monitor as found calibration response values (detector response was low) were outside acceptance criteria. An investigation was made to determine the cause of the monitor response problem. The cause of the condition was out of adjustment threshold voltage but no root cause creating this condition was found. The licensee suspects that inadvertent adjustment could have been made during maintenance of the system so actions were taken to prevent inadvertent entry into the interface box and increased voltage readings will be conducted on the monitor interface box to ensure as left readings. Also, a technical evaluation was performed which concluded that although the detector response was low, it would have prevented an inadvertent release of liquid exceeding an MPC. The inspector noted no problems in reviewing this evaluation.

(Open) IFI (315/92017-01; 316/92017-01): Radiological liquid release from condensed airborne releases via the unit 1 blowdown startup flash tank which discharged through the storm sewer system to Lake Michigan. The licensee's engineering evaluation has determined that the moisture separator was undersized and has proposed but not scheduled long term corrective actions. The activity in the blowdown has resulted from steam generator tube leaks which were plugged during a recent outage. Licensee representatives stated that these liquid releases are accounted for in the semiannual release reports. The licensee's evaluation of this event included sampling and analysis of beach sand which identified low levels of radioactive cesium 134 and 137. Direct readings of the sand using a micro-R meter performed by the licensee and independently by the inspector at the sample locations indicated no radiation levels above background. A licensee representative said that a Regulatory Guide 1.109 based calculation of ground shine indicated that an individual continuously present there for a year would receive a dose of about two mrem. Based on this information, the licensee expects to establish records for the affected area in accordance with the requirements of 10 CFR 50.75(g). These records will be further reviewed in a subsequent inspection.

(Closed) IFI (315/91024-01; 316/91024-01): Standardize the fittings used for attachment of station air to respiratory protection equipment. The licensee purchased "unique" fittings for their supplied air respiratory equipment and revised station procedure 12 THP 6010 RPP.203 to provide instruction for use of the new fittings with the respiratory equipment. The use of the new fitting will prevent respiratory equipment from being used on other than station breathing air.

(Closed) Violation (315/92024-02; 316/91024-02): Failure to follow

procedural requirements concerning coverage/observance of an exit control point. Initial corrective actions included revocation of the auxiliary building turbine exit for everyone except chemistry personnel and at heavy traffic times during which full time radiation protection coverage was provided. Final corrective actions allowed the use of this exit during normal operations in addition to the exit at the RPAC; both exits will have full time radiation protection coverage when open.

3. Audits and Appraisals (IP 83750)

The QA department has incorporated a special ALARA assessment into the regular QA program and was conducting the first of these assessments during this inspection. The inspector discussed some of the preliminary findings with the QA inspectors who found that although there were some weaknesses in the program, that in general it is effective with strong management support.

Problem reports appeared to be well investigated, addressed root causes and were well documented. Several reports identified minor concerns with control of contaminated materials, some of which may have been related to previously observed problems at the turbine building control point. Several others discussed problems associated with events that occurred as the result of chemistry personnel errors. These problems were discussed with the chemistry supervisor and at the exit meeting.

No violations or deviations were identified.

4. Internal Exposure Control (IP 83750)

Whole body and bioassay count results for 1992 indicated no results exceeding the 40 MPC-hour control measure. It appeared that the licensee continues to use engineering controls, and respiratory, whole body counting, and air sampling equipment effectively. Air samples were taken, counted, and evaluated in accordance with procedures.

No violations or deviations were identified.

5. Control of Radioactive Materials and Contamination, Surveys and Monitoring (IP 83750)

Tours of the plant and selected work areas did not identify any problems in the implementation of the licensee's contamination control program. Overall, work areas were well maintained and the cleanliness of the station was noteworthy:

Through December 4, 1992, there were 252 personal contamination events (PCEs), most of which were identified during the two refueling outages. Many of the PCEs were identified as poor work practices associated near step of pads and the licensee is developing actions to correct this problem. As in the past, each PCE and Hot Particle Event is investigated in accordance with 12 THP 6010 RPP.703 "Personnel Contamination Incidents (PCI)" and skin dose assessments are conducted

as necessary. The licensee has strengthened the policy of investigating and assessing contamination events found on modesty garments worn under outer protective clothing.

About 10550 square feet (about five percent of each unit) of the total plant radiologically controlled area (RCA) is posted and controlled as contaminated. The licensee has determined based on its established criteria that only 1300 square feet of this met the criteria for reclamation. The areas not to be reclaimed will be monitored and maintained at or below established contamination levels.

No violations or deviations were identified.

6. Maintaining Occupational Exposures ALARA (IP 83750)

There have been no major changes in the overall station ALARA management program since the previous inspection. The inspector reviewed ALARA program performance and initiatives implemented during the refueling outage which ended in late October 1992. The outage lasted about 130 days and included considerable emergent work. Major work included 100 percent eddy current testing, first time sleeving of about 1800 steam generator tubes, reactor cleanup pump seal replacements, extensive erosion/corrosion inspections of the turbine steam piping, refurbishment of all four main steam isolation valves, and modification of the auxiliary feedwater emergency leakoff valves.

ALARA initiatives for this outage are described in Inspection Report Nos. 50-315/92017 and 50-316/92017. In addition, chemical cleanup of the reactor coolant system was performed at shutdown using acidification of the coolant by lithium removal and boration. Addition of hydrogen peroxide and control of reactor coolant temperature were used to increase solubilization of crud and removal by demineralizers. These initiatives had also been used during the first refueling outage in 1992 resulting in removal of about 2200 curies of cobalt-58 and 50 curies of cobalt-60 from both systems. The licensee has also classified cobalt-bearing large bore valves based on size, type, frequency of operation and cobalt content with intent to consider their replacement with non-cobalt bearing valves.

In 1992, there were two full refueling outages taking about 260 days and considerable turbine repair work lasting about 130 days. The combined dose for both outages was about 470 person-rem; the full year dose will be about 500 person-rem which was consistent with the projected goal. This was achieved despite considerable emergent work, especially during the unit 1 steam generator tube reclamation.

No violations or deviations were identified.

7. Exit Interview

The scope and findings of the inspection were reviewed with licensee representatives (Section 1) at the conclusion of the inspection on

December 4, 1992. The licensee did not identify any documents as proprietary. Tritium migration from the absorption pond and the flash tank release were also discussed by telephone with Messrs. Loope, Noble, and Williams on December 17, 1992.