

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-315/91015(DRSS); 50-316/91015(DRSS)

Docket Nos. 50-315; 50-316

Licenses No. 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: June 17-21, 1991

Inspectors: *M. Schumacher*
R. A. Paul *for*

7/11/91
Date

M. Schumacher
N. Shah *for*

7/11/91
Date

Approved By: *M. Schumacher*
M. C. Schumacher, Chief
Radiological Controls and
Chemistry Section

7/11/91
Date

Inspection Summary

Inspection on June 17-21, 1991, (Reports No. 50-315/91015(DRSS);
No. 50-316/91015(DRSS))

Areas Inspected: Routine, unannounced inspection of the radwaste/transportation program including: organization and management controls (IP 84750, 86750), training and qualifications (IP 84750, 86750), gaseous and liquid radwaste (IP 84750), solid radwaste and transportation (IP 86750), plant tours including the on site storage facility being constructed, the mausoleum containing used steam generators, and the current radwaste facilities.

Results: The organizational structure, management controls, staffing levels, and management support for the radwaste/transportation program appeared good. There were no significant problems identified concerning the radwaste program.



DETAILS

1. Persons Contacted

+#D. Foster, Radioactive Material Specialist
+J. Fryer, General Supervisor, Radioactive Material Control
+L. Gibson, Assistant Plant Manager
+L. Umphrey, Administrative Compliance Coordinator
+J. Long, Radioactive Waste Specialist
+D. Loope, Plant Radiation Protection Supervisor
+J. Nadeau, QA Auditor
+J. Wojcik, Superintendent, Technical Physical Sciences
#D. Noble, Lead HP

.+Isom, Senior Resident Inspector, NRC

+Denotes those present at the Exit Meeting on June 21, 1991.
#Participated in telecom July 5, 1991

2. General

This inspection was conducted to review the licensee's radwaste/transportation program. The inspection included tours of the onsite facilities, observation of work in progress, review of records, and discussions with licensee personnel. The radwaste facilities appeared well maintained.

3. Changes (IP 84750, IP 86750)

The inspectors reviewed changes made since the last inspection in the organization, equipment, procedures, facilities, and implementation of the licensee's radioactive and transportation program.

There have been no significant changes to the overall management of the solid, liquid and gaseous radwaste and solid radwaste transportation programs, including the Process Control Program, since that described in Inspection Reports No. 50-315/89016 and No. 50-316/89017.

No violations or deviations were identified.

4. Training and Qualifications (IP 84750, IP 86750)

The inspectors reviewed the training and qualifications aspects of the licensee's radwaste/transportation programs, including: changes in policies, responsibilities, programs and methods; qualifications of management personnel; provisions for appropriate radwaste/transportation training of personnel.

The inspectors reviewed the training and qualification requirements and selected qualification documentation for appropriate licensee personnel; no significant problems were noted. The inspector verified that the



radwaste/transportation technical staff, and QA auditors assigned to review this area attend seminars and workshops concerning packaging and transportation of radioactive material.

No violations or deviations were noted..

5. Liquid and Gaseous Radioactive Waste (IP 84750)

The inspectors reviewed the licensee's liquid and gaseous radioactive effluent program including: semiannual release reports waste system changes, waste sampling, process and effluent monitors, release paths, batch releases and procedures for waste and effluent systems. The inspectors also verified the operability of each of the liquid and gaseous process monitors and visited the control room to verify alarm setpoints. A general description of the monitoring program and release paths is discussed in Inspection Reports No. 315/90020 and No. 316/90020.

The procedures used to conduct batch liquid waste releases and containment purges provide for the representative sampling of the radioactive waste system, radionuclide analysis prior to release, calculation of effluent release rate, projected offsite radionuclide concentrations and doses prior to release, verification of effluent radiation monitor setpoints, discharge flow rates and effluent volume discharged. It appears that processing, sampling and analysis, and approval and performance of the radioactive effluent releases were conducted in accordance with the procedures.

Liquid and gaseous release records indicated that releases were well within regulatory limits. The inspectors performed independent calculations that verified licensee calculated doses resulting from the releases, were consistent with the methods in the licensee's Off Site Dose Calculation Manual (ODCM). Calculated maximum total body and organ doses at the site boundary were within the TS limits.

6. Solid Radioactive Waste (IP 86750)

The inspectors reviewed the licensee's solid radwaste management program including: processing, control, and storage of solid radwaste; adequacy of required records, reports, and notifications; classification and characterization of waste, preparation of manifests, and marking of packages.

The licensee's solid radwaste consists of spent resin packaged and dewatered in HICS, and uncompacted DAW packaged in 55-gallon drums and authorized LSA boxes. Since the previous inspection, the licensee has shipped 5940 ft³ of DAW and 962 ft³ of resin for burial. The inspectors toured the solid radwaste handling and storage areas and the storage mausoleum for four steam generators replaced during the licensee's 1988 steam generator upgrade; no problems were noted.

On February 1991, the licensee initiated construction of a permanent onsite storage facility following the November 10, 1991 denial of burial site access to State of Michigan licensees. The facility is

designed for interim storage of 80,000 ft³ of DAW and dewatered resin pending development of a Michigan burial site; to date, it is 25% complete and should start accepting waste by April 1992. In the period before facility completion, the licensee is storing spent resin onsite, and has contracted a vendor to process DAW. The licensee's contaminated waste is processed and stored by the vendor. As of November 10, 1990 to date, the licensee has stored 830 ft³ of DAW with the vendor, and 300 ft³ of spent resin in onsite HICS; very little of the stored waste is older than one year. The inspectors reviewed the vendor's license and agreement with the licensee, the onsite storage facility design, construction, and 50.59 review; no problems were identified.

The licensee has implemented initiatives to reduce the amount of waste generated such as replacement of plastic/paper items with launderable items, increased worker awareness and training and large scale decontamination of the auxiliary building. The inspectors observed various portions of the decontamination work and examined aspects of the worker training program; no problems were identified.

The licensee uses the WASTETRAK computer program to determine curie content from external radiation readings and for classification of wastes. Waste stream samples (dewatered resins and DAW) are sent to a certified vendor for isotopic analysis to generate scaling factors for waste certification and DOT waste packaging requirements. The inspectors verified the WASTETRAK results by comparison with a known theoretical method.

No violations or deviations were identified.

7. Transportation of Radioactive Materials (IP 86750)

The inspectors reviewed the licensee's transportation and radioactive material programs, including: changes in personnel and procedures; training and qualifications of personnel; adequacy of required records, reports, and shipment documentation; and compliance with applicable NRC and DOT regulations.

The inspectors selectively reviewed radwaste shipping records for 1990 to date; no problems were noted. The licensee has made 16 shipments from May 1990 to November 10, 1990, totalling approximately 15700 ft³ of DAW and spent resin. Following the November 10, 1990, denial of burial site access, the licensee has made 9 shipments (approximately 11300 ft³) to a vendor for processing and storage. No transportation incidents have occurred since October 1986.

The inspectors reviewed the licensee's procedures and policy governing the transportation of radioactive materials; no problems were noted.

No violations or deviations were identified.



8. Effluent Control Instrumentation (IP 84750)

The inspectors selectively reviewed calibration and channel functional test records and selected setpoints records for effluent radiation monitors on the liquid system (including essential service water, blowdown, blowdown treatment, and liquid radwaste) and gaseous system (including noble gas, particulate, and iodine monitors for lower and upper containment, gland seal exhaust, steam jet air ejector, and unit vent).

The primary calibration (1986) of the gaseous effluent monitors used several concentrations of different noble gases to establish efficiencies and to demonstrate linearity. At the same time, several solid sources with differing beta energies were counted and efficiencies determined. During subsequent calibrations these solid sources are counted to show that the counting efficiency has not significantly changed over a broad range of energies. Linearity is also verified by counting several sources of a single nuclide with a broad range of activities.

The most significant change in process monitoring equipment has been the placement into service of the new Eberline liquid monitor (RRS-1001) replacing the old Westinghouse liquid monitor (R-18). The remainder are the old Westinghouse liquid monitors. Performance problems with these monitors were discussed in Inspection Reports No. 315/89016 and No. 316/89017. Based on review of calibration data of these monitors during this inspection it appears performance problems still exist because of the frequency with which the monitors have to be recalibrated due to operational problems identified during required functional tests. The licensee intends to replace these monitors in 1993/1994.

No violations or deviations were identified.

9. Audits and Appraisals (IP 86750, IP 84750)

The inspectors reviewed reports of audits and appraisals conducted by the licensee including audits required by the technical specifications. Also reviewed were management techniques used to implement and audit the program.

The inspectors reviewed the QA audit and surveillance reports for 1990 and 1991 to date. The licensee's QA audit/surveillance program is adequate to assess the technical performance and compliance with technical specification requirements relating to radwaste/transportation. The inspectors verified that the QA auditors assigned to review this functional area have the necessary expertise and experience prerequisites. Interviews with appropriate licensee personnel indicate that a good working relationship exists between QA and radwaste management such that responses to audit/surveillance findings are generally thorough, timely, and technically sound.

No violations or deviations were identified.



10. Dose Commitment (IP 84750)

The inspectors reviewed the licensee's methodology for calculating offsite doses from liquid and gaseous releases.

The licensee uses the computer code MIDAS (which implements their ODCM) to calculate offsite doses from effluent releases. The inspectors performed manual calculations using ODCM methods for a typical gas and a typical liquid release and compared the results with those of MIDAS. A discrepancy (roughly a factor of 3) was noted in the noble gas to the north sector which the licensee blamed on the use of an incorrect boundary distance for that sector. Using the correct distance reconciled the differences. The licensee agreed to review past calculations to determine if other such problems exist, to make necessary corrections to MIDAS and the ODCM, and submit errata to the semiannual release reports. The matter was discussed at the exit interview and in a telephone discussion with licensee representatives on July 5, 1991. It will be reviewed in a future inspection. (Open Item 315/91015-01; 316/91015-01)

The inspectors compared the methodology described in the ODCM to the experimental method described in Regulatory Guide 1.109 "Calculation of Annual Doses to Man from Routine Releases of Reactor Effluent for the Purpose of Evaluating Compliance with 10 CFR 50, Appendix I"; no problems were identified.

No violations or deviations were identified.

11. Air Cleaning Systems (IP 84750)

Technical Specifications (T/S) requires filter testing of the Control Room Ventilation Systems, Engineered Safety Features Ventilation Systems, and the Spent Fuel Storage Pool Exhaust Ventilation System. A selective review of surveillance test data for 1990 showed that the surveillances on the ventilation systems met test acceptance criteria.

No violations or deviations were identified.

12. Onsite Disposal of Low Level Radioactive Sludge (IP 93702)

Licensee representatives informed the inspectors that approximately nine years ago low level radioactive sludge was removed from an absorption pond within the owner controlled area and used in making a gravelled road onsite. The contamination was caused by a primary to secondary steam generator leak which entered the pond from the turbine building sump, a recognized release pathway. This event came to light during a licensee review in April 1989 and was discussed in Problem Report 89-426. The licensee was able to furnish little documentation of the event but estimates based on anecdotal information and recollections of individuals that it probably occurred in 1982. The inspectors pointed out that such disposal can only be authorized pursuant to a 10 CFR 20.302 approval from the NRC. Licensee representatives stated that this matter would be pursued with NRR. This matter was discussed at the exit interview and will be reviewed in subsequent inspections. (Open Item 315/91015-02; 316/91015-02)

No violations or deviations were identified.

13. LERs Concerning Failure To Meet Technical Specification Requirements

The inspectors reviewed two events in which the licensee failed to perform grab sampling in accordance with their technical specifications.

The first event described in LER occurred on March 8, 1991, and involved the failure of an in-line radiation monitor (RRS-1000) during a routine liquid release of a radwaste discharge tank; both the event and licensee corrective actions were also reviewed by the senior resident inspector and are documented in resident Inspection Report Nos. 315/91010 and 316/91010.

The second event (LER) involved failure to monitor for noble gas during a routine steam generator blowdown release. On March 12, 1991, the Condenser Extraction System Noble Gas monitor (SPING) (SRA- 2905), which monitors releases on the secondary side, was declared out of service. Compensatory grab sampling was done until about a day later when a Unit 2 trip caused an accumulation of water at the sampling point and rendered sampling unfeasible. Grab sampling was reestablished after approximately one day during which time three grab samples were missed. The licensee's review of the event indicated the steam generator blowdown radiation monitors were operable during the release, and that no radioactivity had been detected in the Unit 2 secondary system since the steam generator repair project. Licensee corrective actions included initiating a modification scheduled for the 1992 outage which would alleviate the water accumulation at the sampling point, revising the applicable procedure to allow for sampling following an event of this type, and further training for those personnel involved; these actions appear adequate to prevent recurrence. These matters were discussed at the exit meeting.

No violations or deviations were identified.

14. Exit Interview

The scope and findings of the inspection were discussed with licensee representatives (Section 1) at the conclusion of the inspection on April 5, 1990. Licensee representatives did not identify any documents or processes reviewed during the inspection as proprietary.

