U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report Nos. 50-237/86016(DRSS); 50-249/86019(DRSS); 30-18425/86001(DRSS)

Docket Nos. 50-237; 50-249 Licenses No. DPR-19; DPR-25; 12-05650-19

Licensee: Commonwealth Edison Company
Post Office Box 767
Chicago, Illinois 60690

Facility Name: Dresden Nuclear Power Station, Units 2 and 3

Inspection At: Dresden Site, Morris, Illinois
Mazon EOF, Mazon, Illinois

Inspection Conducted: June 30 and July 1-3, 9 and 10, 1986

Inspectors: D. E. Miller W. J. Slawinski for — 7/22/86 Date

W. J. Slawinski — 7/22/86 Date

Approved By: L. R. Greger, Chief, Facilities Radiation Protection Section — W D Shafer for — 7/23/86 Date

Inspection Summary

Inspection on June 30 through July 10, 1986 (Report Nos. 50-237/86016(DRSS); 50-249/86019(DRSS))
Areas Inspected: Routine, unannounced inspection of the radwaste management program and selected portions of the radiation protection program. Also reviewed were past open items, a radioactive material shipment incident, and Byproduct Materials License No. 12-05650-19 for sources at the Mazon EOF.
Results: One violation was identified (inadequate packaging of a radioactive material shipment - Section 12).

DETAILS

1. Persons Contacted

*D. Adam, Compliance Coordinator
*J. Brunner, Assistant Superintendent, Technical Services
*E. O'Conner, Assistant to Rad/Chem Supervisor
*R. Flessner, Superintendent, Services
*K. Hostert, Lead Rad/Chem Foreman
*R. Jeisy, Station QA Supervisor
*N. Kalivianakis, Nuclear Division Vice President
*C. Lincoln, Radwaste Foreman (solid)
R. Meadows, Master Mechanic
*F. Rescek, Lead Health Physicist, Nuclear Services
*D. Sharper, Waste Systems Engineer
*D. Soccomando, Lead Health Physicist
*J. Wujciga, Superintendent, Production

The inspector also contacted several other licensee and contractor personnel.

*Denotes those present at the exit meeting.

2. General

This inspection, which began at 7:30 a.m. on June 30, 1986, was conducted to examine the licensee's radiation protection and radwaste management programs. Also reviewed were past open items, a radioactive materials shipment incident, and the byproduct materials license for radioactive sources at the Mazon EOF. Several tours of access control and work areas were made to observe and evaluate operational radiological controls and radwaste handling.

3. Licensee Actions on Previous Inspection Findings

(Open) Unresolved Item (237/86008-03; 249/86010-03): Interpretation of 49 CFR 173.441(b), and acceptable methods of measuring "surface" radiation levels of radioactive materials packages offered for transport. Interpretation portion of this unresolved item resulted in the violation of 49 CFR 173.441 presented in this report; details are discussed in Section 12. Acceptable methods of measuring "surface" radiation levels have not yet been resolved; however, a memorandum requesting clarification was sent to the Safeguards and Materials Programs Branch, IE, on June 19, 1986.

(Open) Open Item (237/85026-01; 249/85021-01): Disposition of contaminated soil. The licensee is preparing a submittal to NRR regarding this matter.

(Open) Open Item (237/86008-01; 249/86010-01): Cleanup program for outdoor areas. The licensee has begun a major long-term cleanup project.

4. Training and Qualification

The inspectors reviewed the training and qualifications aspects of the licensee's radiation protection, radwaste, and transportation programs, including: changes in responsibilities, policies, goals, programs, and methods; qualifications of newly hired or promoted radiation protection personnel; and provision of appropriate radiation protection, radwaste, and transportation training for station personnel. Also reviewed was management techniques used to implement these programs and experience concerning self-identification and correction of program implementation weaknesses. Audits are discussed in Section 11.

An inspector attended the licensee's nuclear general employee training (N-GET). The N-GET consists of videotape, slide, and oral presentations, which are augmented by a question and answer session between each segment. The subjects of major training segments are Security, Radiation Protection, and Respiratory Protection. An examination is given at the end of each segment; a passing grade (70 percent or greater) is required for each segment. If Segment 1 (Security) is failed, the trainee is excused from the class and must start again the following week. If Segments 2 or 3 are failed, the trainee must return the following week to attend the segments failed and be retested. A handbook titled, "Nuclear General Employee Training N-GET," is provided to each trainee for future reference. Respiratory protective device fit testing is available for those whose job requires them to maintain respiratory protection qualifications. This training appears to meet the requirements of 10 CFR 19.12, "Instructions to Workers."

The inspectors reviewed the Rad/Chem Technician (RCT) retraining program. In early 1985, the licensee formed a Continuing Training Committee to establish and implement a continuing training program for RCTs. The committee consists of two health physicists, two RCTs, an RCT foreman, a training coordinator, and two trainers. The committee determines what training will be provided to RCTs during each calendar quarter. RCT input concerning training needs is solicited. RCT duty scheduling was altered to permit one week of retraining for each RCT each calendar quarter. This training schedule began in early 1986. After completion of training in each subject area each training day, written testing is performed, or the student demonstrates task performance as applicable. The licensee uses participant evaluation forms (optional) to solicit trainee comments about training provided or desired. No problems were noted.

Training in radwaste packaging and shipping was provided to one health physics, three waste systems, and three quality control personnel during July 1985. This training, performed at the Production Training Center, included the subjects required by IE Bulletin 79-19. Also, radwaste packaging and shipping topics are included in the RCT continuing training program. No problems were noted.

No violations or deviations were identified.

5. External Exposure Control and Personal Dosimetry

The inspectors reviewed the licensee's external exposure control and personal dosimetry programs, including: changes in facilities, equipment, personnel, and procedures; adequacy of the dosimetry program to meet routine and emergency needs; planning and preparation for maintenance and refueling tasks including ALARA considerations; required records, reports, and notifications; effectiveness of management techniques used to implement these programs and experience concerning self-identification and correction of program implementation weaknesses. Audits are discussed in Section 11.

The external exposure measurement and control program consists of whole body monitoring using thermoluminescent dosimeters (TLDs), extremity monitoring using film ring badges, self-reading dosimeters (SRDs), direct radiation surveys, radiation work permits, administrative dose limits, and a radiation dose recording system.

The inspectors selectively reviewed Forms NRC-4 and licensee administrative dose limit extensions for persons who exceeded 1250 millirem per calendar quarter during the first calendar quarter of 1986. No problems were noted.

The inspectors selectively reviewed direct radiation survey records, radiation work permits, ALARA review records, and dosimetry reports for work being performed during the inspection. No problems were noted.

No violations or deviations were identified.

6. Solid Radioactive Waste

The inspectors reviewed the licensee's solid radioactive waste management program, including: determination whether changes to equipment and procedures were in accordance with 10 CFR 50.59; adequacy of implementing procedures to properly classify and characterize waste, prepare manifests, and mark packages; overall performance of the process control and quality assurance programs; adequacy of required records, reports, and notifications; and experience concerning identification and correction of programmatic weaknesses. Audits and training are discussed in other sections of this report.

The licensee's solid radwaste management program remains essentially as described in Inspection Reports No. 50-237/85026(DRSS); 50-249/85021(DRSS). In addition, the licensee occasionally employs a vendor supplied super compactor to further compact DAW filled drums and empty contaminated drums; the resulting "pucks" are placed in new drums for shipment and burial.

Large quantities of DAW and contaminated oil are stored onsite awaiting arrival and operation of the licensee's mobile incineration system. The stored materials have accumulated over several years; most of the DAW was generated during major outage projects, and the Unit 1 decontamination, when radwaste packaging systems could not keep pace with waste generation.

As described in past reports, the vendor solidification equipment is located outdoors; resins and sludges are fed to the equipment through soft piping. The licensee plans to alter the station's installed radwaste solidification facility to accommodate indoor use of the vendor solidification equipment. The alteration will include upgrading the installed crane to handle increased loads, and installation of additional shielding arrangements so that several liners can be loaded, prepared, and stored awaiting shipment. The licensee plans to complete the alterations before winter.

No violations or deviations were identified.

7. Liquids and Liquid Radioactive Wastes

The inspectors reviewed the licensee's reactor liquids and liquid radwaste management programs, including: determination whether changes to equipment and procedures were in accordance with 10 CFR 50.59; determination whether liquid radioactive waste effluents were in accordance with regulatory requirements; adequacy of required records, reports, and notifications; determination whether process and effluent monitors are maintained, calibrated, and operated as required; and experience concerning identification and correction of programmatic weaknesses. Quality assurance audits are discussed in Section 11.

The inspectors selectively reviewed records of batch liquid radwaste releases made during 1986 to date. It appears that the technical specification requirements for sampling, analysis, and release concentrations have been complied with. Calibration of the liquid radwaste monitor is discussed in Inspection Reports No. 50-237/86008(DRSS); 50-249/86010(DRSS). No problems were noted.

The licensee has considered the originally installed service water monitors inoperable since the revised radiological environmental technical specifications became effective in March 1985. The monitors are considered inoperable because they lack adequate detection sensitivity. In accordance with the technical specification's action statement, the licensee collects service water grab samples every 12 hours and analyzes the samples for radioactive materials content. The licensee purchased replacement monitors for the service water systems but found that the background radiation levels at their intended location were too high to permit adequate functioning of the monitors. The licensee has since ordered additional monitoring equipment intended to provide background subtract circuit signals for the new service water monitors.

No violations or deviations were identified.

8. Gaseous Radioactive Waste

The inspectors reviewed the licensee's gaseous radwaste management program, including: determination whether changes to equipment and procedures were in accordance with 10 CFR 50.59; determination whether

gaseous radioactive waste effluents were in accordance with regulatory requirements; adequacy of required records, reports, and notifications; determination whether process and effluent monitors are maintained, calibrated, and operated as required; and experience concerning identification and correction of programmatic weaknesses. Audits are discussed in Section 11.

The licensee's gaseous effluent monitoring and sampling systems remain as described in Inspection Reports No. 50-237/85022(DRSS); 50-249/85018(DRSS).

The licensee is required by technical specification to perform functional tests, source checks, and calibrations of the effluent and certain process monitors at set frequencies. A selected review of records concerning these requirements for the period 1985 and 1986 to date was performed; it appears that they were accomplished as required.

Records of particulate, iodine, and noble gaseous radioisotope sampling, analyses, and quantification were selectively reviewed for 1986 to date. No problems were noted.

No violations or deviations were identified.

9. Transportation of Radioactive Materials

The inspectors reviewed the licensee's transportation of radioactive materials program, including: determination whether written implementing procedures are adequate, maintained current, properly approved, and acceptably implemented; determination whether shipments are in compliance with NRC and DOT regulations and the licensee's quality assurance program; determination if there were any transportation incidents involving licensee shipments; adequacy of required records, reports, shipment documentation, and notifications; and experience concerning identification and correction of programmatic weaknesses. Quality assurance and training are discussed in other sections of this report.

Transportation activities remain as described in Inspection Reports No. 50-237/85026(DRSS); 50-249/85021(DRSS). A transportation incident is discussed in Section 12 of this report.

Records of radioactive shipments made during 1986 were selectively reviewed for compliance with 49 CFR 173, 10 CFR 61, and 10 CFR 71. No problems were identified.

No violations or deviations were identified.

10. Maintaining Occupational Exposures ALARA

The inspectors reviewed the licensee's program for maintaining occupational exposures ALARA, including: changes in ALARA policy and procedures; worker awareness and involvement in the ALARA program; establishment of goals and objectives, and effectiveness in meeting them.

Also reviewed was management techniques used to implement the program and experience concerning self-identification and correction of program implementation weaknesses.

The ALARA program remains as described in previous inspection reports. Procedural and records maintenance refinements have aided in task related information recording and retrieval. Also, procedure DAP 12-9, "ALARA Action Review," has been revised to provide assurance that post-job reviews are performed, audited for completeness, and that recommendations and lessons learned are made available for consideration during future ALARA reviews for similar work.

The station ALARA goal for 1985, not including the Unit 3 RPR project, was 1490 person-rem; actual dose received was 1036 person-rem. The goal for 1986, not including RPR, is 1056 person-rem; 635 person-rem was received by July 1, 1986. The projected ALARA goal for the 1985-6 Unit 3 RPR project was 1990 person-rem; the licensee stated that the goal will not be exceeded.

No violations or deviations were identified.

11. Audits

The inspectors reviewed onsite and offsite audits of the radiation protection and radwaste management programs conducted from July 1, 1985 to date. Extent of audits, qualifications of auditors, and adequacy of corrective actions were reviewed.

Two annual station audits, and a special station audit, of radiation protection surveys and records were conducted. Two findings, six observations, and one open item resulted from the audits. Most of the findings and observations concerned records completion, timeliness, or storage requirements; all findings, observations, and the open item have since been closed except for an observation concerning a high radiation area key log (the response is due July 21, 1986). In addition, 33 station QA surveillances of work activities and drills were performed; several minor radiation protection problems were identified and corrected.

One annual station audit of activities and documentation associated with radwaste was performed; included was adequacy of training provided to certain personnel assigned to radwaste packaging and shipping duties. There was one audit open item concerning training records; this item has since been closed. In addition, a surveillance check of each radwaste shipment was made by QA representatives; no significant problems were identified during the QA surveillances.

A semi-annual offsite Quality Assurance audit of station activities was conducted on April 22-25, 1986. Included were selected radiation protection and radwaste topics. One finding concerning compliance with a specific ODCM requirement for allocating gaseous effluent discharges to a specific unit, and one observation concerning personnel frisking, resulted from the audit; the licensee's response to the finding and observation is yet to be reviewed by the audit team.

The extent of audits, qualifications of auditors, and adequacy of corrective actions appear good.

No violations or deviations were identified.

12. Radioactive Material Shipment Incident

An incident concerning a Type A quantity (17 millicuries of Co-60) radioactive shipment sent from Dresden Station on April 29, 1986, is described in Section 10 of Inspection Reports No. 50-10/86005(DRSS); 50-237/86008(DRSS); 50-249/86010(DRSS). The licensee immediately notified the onsite NRC Senior Resident of the incident. In brief, portions of the contents of a package, transported on a sole-use flatbed trailer, shifted during transport; some radiation readings increased at two inches from the package surface. They read 230 mR/hr at two localized spots when received at Brunswick Station on April 30, 1986. These increased radiation levels appeared contrary to 49 CFR 173.441(b)(2) because the apparent limit at the package "surface" is 200 mR/hr. However, this matter was considered unresolved pending disposition of a then pending contested violation in NRC Region II, and further clarification by the NRC Office of Inspection and Enforcement (IE). The NRC Region III office has since been informed by IE that 49 CFR 173.441(b)(2) limits the surface radiation level to 200 mR/hr on packages when the packages are transported on a sole-use flatbed trailer. The radioactive materials shipment, made from Dresden Station on April 29, 1986, to Brunswick Station is therefore considered in violation of 49 CFR 173.441(b)(2).

One violation was identified (237/86016-01; 249/86019-01).

13. Byproduct Materials License No. 12-05650-19

This license authorizes use of radioactive sources at CECo's Mazon Emergency Offsite Facility. A nominal 21 curie cesium-137 sealed source is used for TLD irradiation and calibrations. The licensee intends to eventually move the source to LaSalle County Station, and include it in the station's operating license. The primary source users are employees of LaSalle County Station.

The inspectors reviewed the licensee's compliance with the conditions of their byproduct materials license (Mazon site) and found that:

- Sources on hand are as permitted by the license.
- The facility, source interlocks, and materials security is as described in referenced applications and letters.
- Users are adequately trained.
- Inventory and leak testing is performed as required.
- Survey instruments are being adequately calibrated at the required frequency.
- Area surveys are being performed as required.

- Postings are adequate and appropriate.
- Interlock functions were observed to properly operate.
- Adequate dosimetry is provided to users.

14. Contamination Reclamation Program

The licensee has undertaken a major decontamination and reclamation program. The program involves eventual cleanup and/or decontamination of most plant areas, and painting or repainting to restore the facility's appearance. The licensee stated that this a long-term project.

According to the licensee, there are 41 active radiation work permits for the program. Nearly seven thousand person-hours have been worked on the project to date. In addition, over seven thousand person-hours have been worked during 1986 in the tool and equipment decontamination room. Because of the RPR project and existence of large quantities of tools and equipment from past outages, tool and equipment decontamination is a major project.

Progress of the reclamation program will be reviewed during future inspections (237/85041-02; 249/85035-02).

No violations or deviations were identified.

15. Exit Meeting

The inspector met with licensee representatives (denoted in Section 1) at the conclusion of the inspection on July 10, 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. Stated that the improvements being made in outside housekeeping and radioactive materials storage areas would continue (Section 3).

b. Stated that plans are being made to relocate the vendor radwaste solidification equipment indoors before winter (Section 6).

c. Acknowledged the violation (Section 12).

d. Stated that the contamination reclamation program would continue (Section 14).