

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-10/85008(DRSS); 50-237/85022(DRSS); 50-249/85018(DRSS)

Docket Nos. 50-10; 50-237; 50-249

Licenses No. DPR-2; DPR-19; DPR-25

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

Facility Name: Dresden Nuclear Power Station, Units 1, 2, and 3

Inspection At: Dresden Site, Morris, IL

Inspection Conducted: June 3-7, 1985

Inspectors: R. A. Paul

R. A. Paul
6/28/85
Date

D. E. Miller
D. E. Miller

6/28/85
Date

Approved By: *L. R. Greger*
L. R. Greger, Chief
Facilities Radiation Protection Section

6/28/85
Date

Inspection Summary

Inspection on June 3-7, 1985 (Reports No. 50-85008(DRSS); 50-237/85022(DRSS); 50-249/85018(DRSS))

Areas Inspected: Routine, unannounced inspection of the liquid and gaseous radwaste management programs, including: organization and management controls, liquid and gaseous radwaste management, effluent reports, quality assurance audits, standby gas treatment system testing, and reactor coolant water quality. Also reviewed were previous inspection findings and status of Unit 1 chemical cleaning. The inspection involved 84 inspector-hours on site by two NRC inspectors.

Results: No violations or deviations were identified.

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DETAILS

1. Persons Contacted

*D. Adam, Field Services Engineer (CECo)
*R. Flessner, Services Superintendent
K. Hostert, Lead Rad/Chem Foreman
*W. Johnson, Lead Chemist
*S. McDonald, Rad/Chem Supervisor
T. Murphy, Radwaste Foreman
J. Schrage, Lead Health Physicist
*D. Scott, Station Manager
*D. Sharper, Waste Systems Engineer
*R. Stobert, QA Supervisor
*J. Wujciga, Production Superintendent

*T. Tongue, NRC Senior Resident Inspector
*C. Anderson, NRC Resident Inspector

The inspectors also contacted other licensee personnel.

*Denotes those at the exit meeting.

2. General

The inspection, which began at 8:30 a.m. on June 3, 1985, was conducted to examine the licensee's gaseous and liquid radwaste management programs, gaseous effluent treatment system testing, and licensee audits. Also reviewed were past open items, followup of status of Unit 1 decontamination, and reactor coolant chemistry. The inspection included several plant tours, review of posting and labeling, discussions with plant personnel, review of licensee records and reports, and independent inspection effort by the inspectors. Housekeeping and observable radiological controls appeared good.

3. Licensee Actions on Previous Inspection Findings

(Closed) Violation (10/85002-03; 237/85005-05; 249/85004-05): Transfer of byproduct material to persons not authorized to receive the material. The inspectors verified that the licensee has implemented the corrective actions listed in their response dated April 24, 1985; the actions appear adequate. No additional problems were noted.

(Closed) Open Item (237/84022-04; 249/84020-04): Determine effectiveness of the Unit 2 decontamination. Moderate decontamination factors (5-10) were found in high flow rate areas, which includes most areas of heavy outage activity in the drywell. No significant reductions were seen at the low cleaning solution flow rates. No further studies were made to determine specific decontamination factors.

(Closed) Open Item (10/85002-04; 237/85005-06; 249/85004-06): Rad/Chem foremen plant surveillance. For several months the licensee documented the time that several of the Rad/Chem foremen spent in plant surveillance. The licensee discontinued documentation of surveillance time because it appeared sufficient effort was being made in plant surveillance by the foremen. The licensee stated they will continue to emphasize a strong foreman surveillance effort.

(Closed) Open Item (237/84022-03; 249/84020-03): Progress and effect of the contamination control program as described in Inspection Reports No. 10/84017; 237/84022 and 249/84020. The contamination control program is an ongoing program. During the period July 1984 through April 1985, the contamination areas in the reactor building, turbine building and radwaste building have been reduced from 50,000 ft² to 23,000 ft².

4. Organization and Management Controls

The inspectors reviewed the licensee's organization and management controls for radiation protection and chemistry, including changes in the organizational structure and staffing, effectiveness of procedures and other management techniques used to implement the program, experience concerning self-identification and correction of program implementation weaknesses, and effectiveness of audits of the program.

The licensee's quality assurance manual states that the Rad/Chem Supervisor has direct access to the Plant Manager in radiation safety matters. On March 18, 1985, CECO announced a Nuclear Stations Division reorganization which established the positions of Station Manager, Production Superintendent, Assistant Services Superintendent, and Services Superintendent. Relative to the Rad/Chem Department, the reorganization resulted in establishment of an additional management position (Assistant Services Superintendent) between the Station Manager and the Rad/Chem Supervisor. The existing intervening manager position, Services Superintendent, was retained also. The existence of two intervening management layers between the RPM and the plant manager is normally considered detrimental to a strong health physics program. When asked by the inspectors, the Plant Manager, Services Superintendent, and Rad/Chem Supervisor stated that the direct access route remains available and direct communication between the Plant Manager and Rad/Chem Supervisor occurs when either person considers it necessary or expedient; routine meetings are not scheduled. Because of the specific individuals occupying the management positions at Dresden Station, it appears that the RPM's concerns are given due consideration and plant manager access is utilized when necessary. However, a personnel change could easily change this situation. The acceptability of the licensee's revised organization will be resolved with NRR and reviewed further during a future inspection. (Open Item 237/85022-02; 249/85018-02)

An ALARA section has been added to the Rad/Chem Department. A former Health Physicist has been promoted to the new Lead Radiological Engineer (LRE) position. The LRE supervises the new ALARA section. Reporting to the LRE are the ALARA Decon Foreman, the ALARA Coordinator, and an Engineering Assistant.

An additional Rad/Chem foreman position (now eight) has been filled. The new formen is assigned to assisting in implementation of the revised Radiation Work Permit system which was instituted on June 1, 1985.

Except for the changes noted above, the Rad/Chem Department is as described in Inspection Reports No. 50-10/85002; 50-237/85005; 50-249/85004.

No violations or deviations were noted.

5. Liquid Radioactive Waste Management

The inspectors reviewed the licensee's liquid radwaste management program 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 8.

During October 1984, the licensee discovered that the Unit 2/3 liquid radwaste discharge line was breached, apparently as a result of corrosion, and was leaking underground. This three-inch inside diameter carbon steel line runs underground from the radwaste building to the Unit 2/3 circulation water blowdown canal. The discharge line is about one quarter mile long. The licensee has not discharged liquid radwaste via this pathway since the leaking line was discovered. The licensee is evaluating alternate methods of line repair or replacement, plans to determine the quantity, extent, and location of soil contamination resulting from the line leakage (all on licensee owned property), and plans to discuss with NRR possible disposition of the contaminated soil.

After the line leak was identified, the licensee strung a soft pipe (fire hose) between the Unit 2/3 liquid radwaste discharge system and the Unit 1 liquid radwaste discharge system; this pathway is being used for releases. The soft line runs 300-400 feet, all within Units 1 and 2/3 buildings. Release monitoring is accomplished with the Unit 2/3 liquid radwaste monitor. According to the licensee, the 10 CFR 50.59 review performed for the temporary soft piping identified no significant safety problems. The licensee routinely walks down the piping to check for leaks when releases are being made. The inspectors walked down the piping run and noted no obvious problems.

The inspectors selectively reviewed records of required calibration and functional testing of the liquid radwaste monitor conducted during 1984 and 1985 to date. No problems were noted. The licensee has a new liquid effluent radwaste monitor onsite; the monitor will be installed in the near future. The new monitor should have better detection sensitivity than the existing monitor. The licensee plans to perform a multi-point fluid calibration on the new monitor, and concurrently

establish a multi-point solid source secondary calibration for use during future calibrations. Possible calibration methods/techniques were discussed with the licensee. This matter was discussed at the exit meeting (Open Item 237/85022-01; 249/85018/-01).

The inspectors selectively reviewed records of batch liquid radwaste releases made during 1985 to date. It appears that the technical specification requirements for sampling, analysis, and release concentrations have been complied with. The inspectors noted that the numbers of liquid releases was greater during 1985 than in past years. The licensee stated that the increased volumes resulted from increased service water condenser inleakage and Unit 1 chemical cleaning/flushing water. After evaporative concentration and filtration, the Unit 1 water contained small quantities of organic compounds which precluded reuse in Unit 2/3 systems.

No violations or deviations were identified.

6. 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.

The licensee's gaseous effluent sampling and monitoring program includes continuous noble gas monitoring of the D-1 chimney, D-2/3 chimney, D-2/3 reactor building vent, and the D-2/3 air ejector off-gas system. In addition, daily noble gas grab samples are taken from the D-1 chimney, and D-2/3 chimney, and weekly noble gas grab samples are taken from the D-2/3 reactor building vent. These samples are isotopically analyzed.

The air ejector off-gas monitors are designed to initiate closure of the off-gas system isolation valve when the radiation level in the off-gas system exceeds the technical specification limit. The reactor building air monitoring system is designed to provide automatic initiation of the standby gas treatment system and isolation of the normal reactor building ventilation when radioactive concentrations in the exhaust system exceed the set point limits. All monitoring systems provide indication in the control room.

The off-gas monitoring system utilizes two gamma sensitive ionization chambers located at the inlet of each off-gas holdup line. The D-2/3 chimney primary effluent monitoring system consists of an Eberline SPING-4 and a secondary system which consists of scintillation detectors. Both systems sample air from the D-2/3 chimney through the same isokinetic sample probe. The D-1 chimney effluent monitoring system is similar to the D-2/3 chimney monitoring system. The D-2/3 reactor

building effluent air monitoring system consists of two separate Geiger-Mueller (GM) tubes in each ventilation exhaust plenum and a SPING-4, which monitors the combined air before discharge from the D-2/3 vent. The licensee's measurements, reviewed for the period January through April 1985, indicate that the average release rate for the D-2/3 chimney was 117 mCi/sec, and for the D-2/3 reactor building vent less than 1mCi/sec. Unit 1 has not operated since 1979, therefore no gaseous releases have been made.

The licensee's current practice of quantifying noble gas monthly release rates consists of using the sum of each daily sample in curies/second ratioed to the isotopic mix of one of the specific daily samples taken during the month and ascribing the percent of its isotopic mix to the sum of the daily samples. This method can result in inaccurate isotopic quantification and characterization of relative isotopic abundance. This matter was discussed at the exit meeting.

A review of the licensee's calibration of the D-2/3 ventilation exhaust vent monitors, the D-2/3 refueling floor monitors, and the D-2/3 Steam Jet Air Ejector Off-gas monitors indicated they are calibrated in accordance with technical specification surveillance requirements.

The licensee is required by technical specification to perform functional tests, source checks, and calibrations of the D-1 and D-2/3 plant chimneys and the D-2/3 reactor building vent stack monitors at set frequencies. A selected review of these tests for the period 1984 and 1985 to date was made; it appears they were accomplished in accordance with technical specification requirements.

During the inspection it was noted that the low range channel on the D-2/3 SPING-4 chimney monitor had not been calibrated using a gaseous medium. This matter was discussed with the licensee who stated it was their intent to use a gaseous medium for this channel during the next required calibration.

The licensee's calculations and records of iodine and particulate (with half-lives longer than eight days) releases for 1985 to date were selectively reviewed. According to licensee statements and licensee records reviewed by the inspectors, there were no releases greater than the technical specification limit. Release rates are based upon the analysis of isokinetically sampled continuous iodine and particulate samples collected weekly from the D-1 chimney, the D-2/3 chimney, and the D-2/3 reactor building vent stack.

No violations or deviations were noted.

7. Effluent Reports

The inspectors selectively reviewed radiological effluent analysis results to determine accuracy of data reported in the 1984 semi-annual effluent reports. No problems were noted. The recently revised technical specification states that the format and content of this report

shall be in accordance with Regulatory Guide 1.21 (Revision 1) dated June 1974. The inspectors discussed with the licensee the need to review the regulatory guide and revise the format and content of the next effluent report so that it will comply with the requirement. This matter was discussed at the exit meeting.

No violations or deviations were noted.

8. Quality Assurance Audit

The inspectors reviewed the licensee's 1984 annual audit of effluents (12-84-15); the audit included adherence to technical specification requirements for surveillance and calibration of liquid and gaseous effluent monitors. There was one observation concerning lack of retrievability of certain records; this observation has since been closed.

Because the new effluent technical specifications became applicable in March 1985, the licensee postponed the annual audit of effluents until July 1985 (after completion of second calendar quarter surveillances).

No violations or deviations were noted.

9. Standby Gas Treatment System (SGTS) Testing

Technical specification required testing/surveillance of the SGTS was performed on trains A and B on November 14-15, 1984. Portions of the required tests were performed by a contractor. The testing/surveillance results indicate that:

- ° HEPA filter efficiencies (inplace testing with DOP) met the requirements of Technical Specification 3.7.B.2.a.(1).
- ° Charcoal filter efficiencies (inplace testing with freon) met the requirements of Technical Specifications 3.7.B.2.a.(2).
- ° Laboratory methyl iodide tests and results performed on charcoal filter samples met the requirements of Technical Specification 3.7.B.2.a.(3).
- ° Pressure drops across the combined filters met the requirements of Technical Specification 4.7.b.(1).
- ° Inplace testing was performed at the required flow rates.
- ° Inlet heater differential temperatures met the requirements of Technical Specification 4.7.a.(2).

No problems were identified by the licensee during the testing or by the inspectors during review of test results.

No violations or deviations were noted.

10. Reactor Coolant Water Quality

The inspectors selectively reviewed records of reactor coolant surveillances for Units 2 and 3 conducted during 1985 to date. The frequency of sampling, types of analyses, and analysis results appear to meet technical specification requirements.

No violations or deviations were identified.

11. Status of Unit 1 Chemical Cleaning

The licensee has completed the decontamination project. The liquid waste evaporation process is finished. Contaminated liquid from storage tanks 102A and B in the Chemical Cleaning Building (CCB) was processed by evaporation, and the concentrates stored in concentrate holding tank 115 in the CCB.

To date, this wet waste has not been solidified. The licensee will use a contractor cement solidification system instead of the installed DOW system located in the CCB. At the time of this inspection, no contract had been issued for the solidification.

Post-decontamination surveys in the secondary steam generator rooms will be made by General Electric Company in the near future. The licensee will make independent verification surveys. During a previous inspection (10/84017; 237/84022; 249/84020), it was noted that EGG, and NRC contractor, will review the GE and licensee surveys and may conduct independent surveys. The extent of EGG's role in these surveys has not been finalized.

12. Exit Meeting

The inspectors met with licensee representatives (denoted in Section 1) at the conclusion of the inspection on June 7, 1985. The inspectors summarized the scope and findings of the inspection. The inspectors also discussed the likely information content of the inspection report with regard to documents or processes reviewed by the inspectors during the inspection. The licensee identified no such documents/processes as proprietary. In response to certain items discussed by the inspectors, the licensee:

- a. Stated that a primary fluid calibration of the new liquid radwaste effluent monitor would be performed, and a secondary calibration method using solid sources would be concurrently established. (Section 5)
- b. Stated that the method of quantifying noble gaseous effluent release rates would be changed. Each daily grab sample would be the basis for quantification rather than selecting one sample as being representative of the isotopic mix. (Section 6)

- c. Stated that the accessibility of the Rad/Chem Supervisor (RPM) to the Plant Manager has not been diminished by the Nuclear Stations Division reorganization. (Section 4)
- d. Acknowledged the inspectors' comment concerning the need to revise the effluent report content beginning with the next reporting period. (Section 7)