U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-373/92018(DRSS); 50-374/92018(DRSS)

Docket Nos. 50-373; 50-374 Licenses No. NPF-11; NPF-18

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

Facility Name: LaSalle County Station, Units 1 and 2

Inspection At: LaSalle County Station, Marseilles, Illinois

Inspection Conducted: August 24 through 28, 1992

Inspectors: P. L. Louden 9/8/92
Date

D. W. Nelson (William Snell for) 9/9/92
Date

Accompanied By: T. Bohn, Senior Scientist
Idaho National Engineering Laboratory

Approved By: William Snell 9/9/92
William Snell, Chief Date
Radiological Controls Section 2

Inspection Summary

Inspection on August 24 through 28, 1992 (Report Nos. 50-373/92018(DRSS); 50-374/92018(DRSS))
Areas Inspected: Routine announced inspection of the licensee's gaseous, liquid, and solid radioactive waste program (IP 86750 & 84750), and the licensee's preparation and planning activities associated with the upcoming Unit 1 refueling outage (L1R05) (IP 83729). A special review of the licensee's methodology used to perform dose calculations recorded in Annual Operating Reports and Semiannual Effluent Reports using the NRC confirmation computer program PC Dose (IP 84750).
Results: One violation of NRC requirements was identified regarding a waste shipment sent to the Barnwell burial site without the required information entered on the Yellow-III label attached to the package (Section 8). Additionally, one Inspector Followup Item was opened to follow the completion of resolving discrepancies between information found in the radiological

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effluent technical specifications and the data used in the licensee's effluent dose calculation program (Section 9). The licensee has canceled the large scope in-service-inspections (ISI) and the recirculation system chemical decontamination originally scheduled for the Unit 1 refuel outage. Overall, the licensee's radioactive waste program is well staffed and is performing at acceptable levels. The general housekeeping of the station during the inspection was excellent.

DETAILS

1. Persons Contacted

Licensee staff

*J. Arnould, Regulatory Assurance
*J. Beke, Technical Staff Group Leader
*J. Borm, Nuclear Quality Programs Engineer
*D. Carlson, Regulatory Assurance, NRC Coordinator
*G. Diederich, LaSalle Station Manager
*K. Francis, RadWaste Coordinator
*J. Gieseker, ENC Project Manager
*H. Hentschel, Assistant Superintendent, Operations
*D. Hieggelke, Health Physics Services Supervisor
*J. Houston, Emergency Preparedness Coordinator
*W. Huntington, Superintendent, Technical Services
*P. Knoll, Contamination Control Coordinator
*J. Lockwood, Supervisor, Regulatory Assurance
*P. Nottingham, Supervisor, Chemistry
*J. Schmeltz, Superintendent, Production
*J. Shields, Nuclear Licensing Administrator

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*D. Hills, Senior Resident Inspector
*C. Phillips, Resident Inspector

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

*Indicates those present at exit meeting on August 28, 1992.

3. Licensee Action on Previous Inspection Findings (86750)

(Closed) Violation Nos. 50-373/91016-02; 50-373/91016-02: Inappropriate marking on an LSA radioactive waste shipment. The incident involved an "EMPTY" marking inadvertently left on the inside of a radioactive waste LSA container. The shipment was appropriately marked and labeled on the outside of the package. The licensee revised station procedure to include reviewing all areas within a personnel barrier around a transport package to ensure all "EMPTY" or other inappropriate markings are removed prior to shipment. This item is closed.

4. Training and Qualifications (IP 84750 and 86750)

The inspectors reviewed the training and qualification records of personnel involved in solid radioactive waste transportation activities to verify such individuals had received training concerning waste processing and Department of Transportation (DOT) requirements.

All managers involved in the processing, packaging, and shipping of radioactive waste and materials receive vendor supplied training which covers specific requirements of DOT regulations and NRC requirements

under 10 CFR 61. Attendees include managers from Operations, Radiation Protection, and Chemistry Departments. Radiation Protection Technicians (RPTs) receive periodic training in this area as part of their continuing training program. All of the individuals reviewed appeared to be well qualified for their positions, and many were noted as having previous experience as operators or had nuclear training and experience while serving in the Navy.

No violations or deviations were identified.

5. Liquid and Gaseous Radioactive Waste (IP 84750)

The inspectors reviewed the licensee's liquid and gaseous radioactive effluent program including: waste system changes, waste sampling, process and effluent monitors, release paths, batch releases and procedures for waste and effluent systems.

The station performed one liquid batch release during 1992. Samples were collected and analyzed using a germanium detection system to identify and determine the concentration of the gamma emitting nuclides. Beta emitter concentrations were determined from the vendor analysis of composite liquid samples. Total activity for each nuclide was determined using the sample analysis and the flow discharge rate. The batch release consisted of 7,128 gallons and the total composite activity was 3.0E4 microcuries. The inspectors reviewed the sampling and analytical methodologies and determined that all records and activities were performed in accordance with procedural and Technical Specification (TS) requirements.

A review of the gaseous radioactive waste records indicated that collected samples (grab, filter and charcoal), dose updates and projections were performed and monitors were calibrated all within required time frames. All gaseous releases were well within regulatory limits.

No violations or deviations were identified.

6. Solid Radioactive Waste (IP 86750)

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

The operations department maintains the ultimate responsibility for the implementation of the radioactive waste processing program. Radiation Protection (RP) and Chemistry play supporting roles in providing sample analyses, surveys, waste classification and characterization information for radioactive waste prepared for shipment. Waste stream analysis is performed by a vendor laboratory and is routinely cross checked by the Chemistry Department. RP additionally performs document reviews to ensure accuracy and compliance with DOT regulations. The inspectors noted that while the current structure of the program appeared to function as designed, communication problems could occur, and an overall

cognizant manager to assist in the coordination of the various departments did not exist. A specific example of the discontinuity which could occur in the program can be found in the responsibility differences regarding radioactive waste shipments and radioactive material shipments. As mentioned previously, operations maintains responsibility for waste shipments, however, RP is held responsible for the coordinating of radioactive materials shipments. Wherein this setup has not caused frequent regulatory noncompliances, the program appeared to be operating adequately mainly due to the aggressive performance of those lower level managers involved.

The inspectors reviewed the circumstances surrounding a recently shipped package of filter media whose curie content was later found to be greater than originally reported to the burial site. The shipping manifests detailed the shipment as 0.333 curies of solidified filter media. The shipment was classified Low Specific Activity (LSA), and the waste classification was Type "A". Several weeks later, a station health physicist, while reviewing recently received vendor analyses noticed a discrepancy in the scaling factor used for current shipments compared to historical files. After researching the concern, it was determined that the vendor laboratory had performed the most recent sample analysis incorrectly and this error was the cause of the isotopic profiles being incorrect. Cross reference checks performed by station Chemistry staff confirmed the error, which affected the calculations used for the shipment mentioned above. After reviewing the corrected scaling factors, the shipment should have been listed as containing 31.14 curies of total activity. The licensee immediately notified the burial site of the error with respect to the shipment. The burial site acknowledged the error, and considering that the waste classification did not change and the shipment was appropriately packaged for the revised quantity, no further concern was discussed with the burial site. In addition to the burial site notification, the station has planned to send a Quality Assurance team to the vendor laboratory to review their analytical procedures and discuss the event in detail with laboratory management.

The licensee was in the process of implementing the radioactive waste management computer program (RADMAN). RADMAN is capable of detecting differences between vendor supplied and licensee generated analysis data, which should help alleviate the problem encountered in the above mentioned event. This program will also help reduce time in generating required paperwork and will provide an easily accessible database for historical reviews.

No violations or deviations were identified.

7. Calibrations of Gaseous and Liquid Monitors (IP 84750)

The inspectors reviewed the calibration and set point records and procedures for all of the gas and liquid process monitors. The liquid monitors include: radioactive waste discharge, service water discharge for each unit and the two residual heat removal system service water monitors for each unit. The gaseous monitors include: standby gas treatment system and reactor building vent exhaust; pre- and post-offgas; fuel pool exhaust; and several area continuous air monitors

(CAMs). All monitors are source checked for energy response, efficiency, and linearity. The calibrations appear to be performed in accordance with procedural and TS requirements.

No violations or deviations were identified.

8. Transportation of Radioactive Materials (IP 86750)

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

a. General Activities

The licensee has made approximately 200 non-waste radioactive materials shipments as of the time of the inspection. As discussed in Section 6, RP is responsible for all non-waste radioactive materials shipments, and a health physicist is assigned to manage the program and is responsible for assuring that all shipping documents are properly completed and signed; all containers are properly marked and labeled; and the vehicles are properly placarded. The inspectors reviewed several selected procedures addressing radioactive materials shipments and found them to be well written, easy to follow and technically accurate. RP personnel involved in the program are qualified and receive annual off-site radioactive materials transportation training.

The licensee has made approximately 75 radioactive waste shipments, during 1992 to date, to processing and/or waste burial facilities and sites. Unlike radioactive materials shipments, operations is responsible for the transportation of all radioactive waste. Each shipment requires input from four separate groups; RP, Chemistry, Quality Control and the radioactive waste group. Quality Control provides hold and stop points, audits each shipments, signs the appropriate 10 CFR 71 Quality Assurance documentation. Radioactive waste personnel complete all of the required documents and assures that each shipment meets DOT and NRC requirements.

b. Transportation Event of August 13, 1992

The licensee was notified on August 13, 1992, that a shipment of resins sent to the Barnwell, S.C. burial site arrived without the Department of Transportation Yellow-III label being appropriately filled out, as required by 49 CFR 172.403. The licensee reviewed the circumstances which led to the error and determined that the procedures which detail the process for preparing a shipment containing quantities requiring a Yellow-III label were inadequate in addressing all the requirements necessary to perform such a shipment. On August 27, 1992, the licensee received a letter dated August 17, 1992, from the State of South Carolina detailing the violation and containing a warning that further violations of this type would lead to more severe enforcement actions. The inspector discussed this event with all personnel involved, and

indicated to station management that failure to appropriately complete a Yellow-III label with the required, content, activity, and transport index information was a violation of 49 CFR 172.402 (Violation 373/92018-01; 374/92018-01). The inspectors discussed this event at the exit meeting and detailed the apparent inadequacies in procedures which led to the violation. Licensee staff indicated that corrective actions were underway and procedures would be amended to include all the detailed requirements to comply with DOT regulations.

One violation of NRC requirements was identified.

9. PC Dose Comparative Calculations (IP 84750)

The inspectors performed a special review of the licensee's methodology in calculating offsite doses from liquid and gaseous releases to verify compliance with 10 CFR 50 Appendix I limits. The calculations were verified using the NRC PC Dose program, which uses Regulatory Guide 1.109 techniques.

Reviews of parameters used in the calculation compared with information provided in the Offsite Dose Calculation Manual (ODCM) resulted in the identification of some half-life discrepancies for a few of the isotopes as listed in the ODCM. These minor differences or typographical errors were quickly corrected by licensee staff.

Comparative runs were performed of liquid and gaseous releases for predominate pathways for a number of radioisotopes. Liquid release results compared very well with most the isotopes compared, falling within 2 percent of the PC Dose results. Gaseous calculations compared favorably for most isotopes, however, a considerable error (+99%) was observed between the programs when calculating Iodine 131 doses. The doses appeared to be consistently two times greater when using the licensee's program than with the PC Dose program. Further investigation revealed that the reason for the conservative error was due to the licensee using a factor of "1" for elemental iodine fractions, as opposed to the "1/2" value stated in the ODCM. The inspectors informed the licensee of the disagreement between the program parameters and what is stated in the ODCM, and that the resolution of the inconsistency would be tracked as an Inspector Followup Item (IFI 373/92018-02; 374/92018-02).

No violations of NRC requirements were identified. One Inspector Followup Item was identified.

10. Preparation for Unit 1 Outage (L1R05)

The inspectors reviewed the licensee's work scope, ALARA initiatives, and dose goals for the upcoming Unit 1 outage.

The current dose goal for the outage is 392 person-rem. This revised figure has been reduced due to the station's decision to cancel the originally planned recirculating system decontamination and the large scope of in-service inspections (ISI). The originally planned ISI alone was projected to be about 290 person-rem. Station staff indicated that

this ISI and decontamination would be performed during the next Unit 1 refuel outage.

The higher dose jobs for the outage are similar to those performed in previous outages: under vessel work; control rod drive repairs; local power range monitor repairs; safety relief valve work; and miscellaneous valve work. The balance of the work activities are a number of miscellaneous routine jobs in the 3 person-rem and less range. Licensee staff indicated that departmental cooperation was continuing to improve, and that several lessons learned from past outages were discussed at various planning meetings. The station will continue to use a central operations room for outage activities to assist in planning and coordination. This center was used during the previous outage and received many complements from workers and management staff.

To assist in reducing dose rates in the recirculation piping, the plant will again perform a soft shutdown, and as a result of efforts by the source term reduction task force, operations will keep the reactor water cleanup system (RWCU) running about four times longer than in the past. The task force believed that a significant amount of residual crud would be removed from the system if RWCU was left operational for a longer period of time following shutdown. The inspector indicated at the exit meeting that this initial recommendation and the cooperation from the operations department was an improvement in addressing previously identified concerns with the station's overall approach to source term reduction. The results of these activities will be reviewed during future inspections.

No violations or deviations were identified.

11. Tours

During the course of the inspection the inspectors made several tours of the radiologically controlled area and the radioactive waste areas. A few radiation material labeling problems were discovered during the tours and each item was promptly corrected by radiation protection staff.

Overall the radiological and general housekeeping of the station was excellent. All personnel observed working in the RCA appeared to be following good radiation protection practices.

No violations or deviations were identified.

12. Exit Meeting

The scope and findings of the inspection were discussed with licensee representatives (Section 1) at the conclusion of the inspection on August 28, 1992. Licensee representatives did not identify any documents or processes reviewed during the inspection as proprietary. Specific items discussed at the meeting were as follows:

- The violation of transportation requirements associated with the August 1992 shipment of resins to the Barnwell site.

- The results of the comparative calculations of the licensee's dose commitment program and the NRC PC Dose program. One IFI was identified during these calculation regarding the fractional allowance for elemental iodine in gas particulate calculations.

- The reduction in the scope of the Unit 1 outage scheduled to begin at the end of September 1992, and the implementation of recommendations provided by the source term reduction task force.

- The observed excellent housekeeping of the RCA and radioactive waste areas.