

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-373/85036(DRSS); 50-374/85037(DRSS)

Docket Nos. 50-373; 50-374

Licenses No. NPF-11; NPF-18

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

Facility Name: LaSalle County Station, Units 1 and 2

Inspection At: LaSalle County Station, Marseilles, Illinois

Inspection Conducted: Between October 30 and November 22, 1985

Inspectors: *for R. A. Paul*

12/12/85
Date

for D. E. Miller

12/12/85
Date

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

12/12/85
Date

Inspection Summary:

Inspection between October 30 and November 22, 1985

(Reports No. 50-373/85036(DRSS); 50-374/85037(DRSS))

Areas Inspected: Routine, unannounced inspection of radiation protection activities during refueling of Unit 1, including: ALARA, exposure controls, respiratory protection, posting and high radiation controls, organization and staffing, radiological occurrence reports, previous inspection findings, and the status of the radiation protection improvement program. The inspection involved 135 inspector-hours onsite by two NRC inspectors.

Results: No violations were identified in fourteen of the areas inspected. One violation was identified in one area (failure to follow high radiation entry and exit procedures - Section 12).

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DETAILS

1. Persons Contacted

- *L. Aldrich, Rad/Chem Supervisor
- *D. Berkman, Assistant Superintendent, Technical Services
- *R. Bishop, Superintendent, Services
- *G. Diederich, Station Manager
- *W. Huntington, Assistant Superintendent, Operations
- *J. Kovach, Radiation Protection Director
- *W. Luett, Assistant to Rad/Chem Supervisor
- *H. Marrin, CECO - Licensing
- *G. Myrick, Nuclear Services Health Physicist
- *M. Vonk, Lead Health Physicist

- *W. Shafer, Chief, Emergency Preparedness and Radiological Protection Branch
- *J. Bjorgen, NRC Resident Inspector
- *R. Kopriva, NRC Resident Inspector

The inspectors contacted other licensee and contractor personnel.

*Denotes those present at the exit meeting.

2. General

This inspection, which began at 9:30 a.m. on October 30, 1985, was conducted to examine the licensee's radiation protection activities during the Unit 1 refueling and maintenance outage and to monitor the status of the Rad/Chem Improvement Program. The inspection included numerous plant tours, review of posting and labeling, high radiation area controls, discussions with licensee and contractor personnel, and independent radiation measurements by the inspectors. With the exception of a few areas in the Unit 1 reactor building, housekeeping was generally adequate.

3. Licensee Action on Previous Inspection Findings

(Closed) Noncompliance (373/85025-02; 374/85026-02): Failure to secure radioactive material stored in an onsite unrestricted area from unauthorized removal. Station Procedure LAP 900-26 "Unconditional Release Program" has been revised to strengthen the program for release of materials to the unrestricted area, and station security has been instructed to ensure that vehicles leaving the station with containers and equipment have an unconditional release. The radioactive material has been removed from the onsite dump, and the dump has been closed.

(Closed) Noncompliance (373/85025-03; 374/85026-03): Failure to collect air samples to identify airborne concentrations before entering the offgas building. The work procedure for the offgas system has been revised to include air sampling requirements before pre-filter cavity entry. In addition, the ALARA check list has been revised to remind rad/chem personnel of the potential noble gas problems associated with offgas system maintenance. All radiation protection personnel have been reminded of their responsibility to take air samples when entering an area of potential or known airborne radioactivity. Personnel will also be required, by Procedure "LRP-1360-60" to wear self-contained breathing apparatus and a full set of protective clothing while collecting the air samples.

(Closed) Open Item (373/85025-01; 374/85026-01): Problem concerning standing water in drums containing spent resins produced in the "B" radwaste decant tank; resins produced from this tank could not be shipped as solid waste. A licensee contractor identified that a timer setting device was the cause of the problem. Since the device was replaced, several spent resin drums have been produced by the "B" decant tank without standing water. The problem appears to be corrected.

(Closed) Open Item (373/84031-02; 374/84038-01): Friskers located in the reactor buildings could not effectively be used for surveying due to high radiation backgrounds. The licensee has installed several frisker shielding booths in the reactor and turbine buildings to allow greater monitor detection sensitivity. The inspectors noted that a few booths were located where radiation area backgrounds were too high; these locations were changed during the inspection. Overall, the detection sensitivity for friskers located in the booths was adequate by the conclusion of the inspection.

(Open) Noncompliance (373/85014-01B; 374/85014-01B and 373/84-31-01; 374/84-38-01): Failure to make a personal contamination whole body frisk after exiting from a step-off pad in accordance with procedural requirements, and inadequate numbers of friskers and frisker booths to meet the procedural requirement. See Section 14.

(Closed) Unresolved Item (373/85030-01; 374/85031-01(DRP)): Continuing problem with licensee identified unlocked high radiation door violations. A Notice of Violation was issued in Inspection Reports No. 50-373/84014; 50-374/84018. Although the actions to strengthen this program have resulted in a significant reduction of unlocked high radiation doors, the licensee has continued to experience problems with high radiation area access controls. The licensee initiated a formal program to improve performance in this area during 1985; this program is scheduled for complete implementation by December 1, 1985. These corrective actions will include the designation of a person on each shift to control high radiation area access and exit. Future inspections will monitor licensee performance in this area. See Section 12.

4. Organization and Management Controls

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

Since previously reported in Inspection Reports No. 50-373/85025; 50-374/85026, several organizational changes have been made, including:

- L. Aldrich, former Lead Health Physicist, was promoted to Rad/Chem Supervisor. This individual is the designated Radiation Protection Manager (RPM).
- W. Luett, former Group Leader, Technical Staff Engineering was promoted to a newly created position as Assistant to the Rad/Chem Supervisor.
- M. Vonk, formerly a Health Physicist at the General Office, was promoted to Lead Health Physicist.
- J. Lewis, former Health Physics Coordinator, was named Contamination Control Coordinator, a newly created position.

As a result of these changes, the Rad/Chem foreman and technicians now report directly to the Lead Health Physicist rather than the Health Physics Coordinator-Operational. The changes should strengthen the Rad/Chem program in that personal and area contamination control problems are being addressed by a dedicated person, and more actual plant experience is provided by addition of the Assistant to the Rad/Chem Supervisor.

A current CEC reorganization resulted in insertion of two manager/supervisors without health physics experience between the Rad/Chem Supervisor (RPM) and the Station Manager. Based on discussions with the Station Manager, Services Superintendent, and RPM, it appears that direct access remains available and direct communication between the Station Manager and RPM occurs whenever either person considers it necessary or expedient; however such meetings are not regularly scheduled. The Plant Manager assured the inspectors that routine contact between him and the RPM will continue.

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 program, including: changes in facilities, equipment, personnel, and procedures; adequacy of the dosimetry program to meet routine needs; and required records, reports, and notifications.

There have been no significant changes in the licensee's external exposure measurement and control program. The inspectors selectively reviewed the exposure records from January through October 1985, including film badge and self-reader dosimeter results, and computer printout dose summaries. The records indicate that no persons exceeded regulatory requirements. The occupational external dose for the station in 1985 was 225 person-rem.

No violations or deviations were identified.

6. Internal Exposure Control and Assessment

The inspectors reviewed the licensee's internal exposure control and assessment programs, including: changes in facilities, equipment, personnel, and procedures affecting internal exposure control and personal assessment; determination whether engineering controls, respiratory equipment, and assessment of individual intakes meet regulatory requirements; required records, reports and notifications; and effectiveness of management techniques used to implement these programs, including experience concerning self-identification and correction of program implementation weaknesses.

The licensee's program for controlling internal exposures includes the use of protective clothing, respirators, equipment, and control of surface and airborne radioactivity. A selected review of air samples and smear survey results was made; it appears that sufficient air samples have been collected and analyzed during this outage. The licensee uses a vendor furnished and calibrated whole body counter for baseline counting of incoming contractor personnel; they are also counted upon completion of their outage activities at the station. The inspectors selectively reviewed whole body count results for 1985 to date; it appears no worker has exceeded the 40 MPC-hour control measure. Procedure LRP 1340-5 "Whole Body Counter Routine Operations" was reviewed. A few discrepancies were noted in documenting and interpretation of the information concerning variations in the daily source checks. This matter was discussed with the licensee.

No violations or deviations were identified.

7. Outage Planning and Preparation

Health physics personnel participated in preplanning meetings and were involved in major radiation jobs in advance of the outage. The ALARA and Contamination Control Coordinator also assisted in the planning of certain outage jobs, including IHSI insulation handling/storage, scram discharge volume modification, IHSI weld project, and RHR shaft modification. To implement ALARA for certain of the tasks, the licensee purchased a control rod drive flush tank which should reduce radiation levels on the drives before repair, and will add nozzles to the Scram Discharge Volume (SDV) such that the SDV can be hydrolysed to reduce dose rates on the 761' level.

No violations or deviations were identified.

8. Area Contamination Controls Program

The licensee is establishing a contamination controls program; the following aspects have or will be accomplished.

The licensee has established and filled a full-time Contamination Control Coordinator (CCC) position. The CCC's duties include establishing and/or coordinating programs for area and equipment decontamination, mechanical and administrative methods of reducing contamination incidents, investigations of contamination incidents, and reclamation of contaminated areas.

To aid in mechanically preventing contamination spread incidents, the licensee has: designed containment tents for use during equipment modifications or repairs, established the use of portable drip containments (for leaking valves), purchased filtered air movers for use with containment tent or to ventilate/exhaust localized work areas, and has purchased rigid panel structures for use as boundaries between selected clean and potentially contaminated areas.

Methods and procedures for investigating contamination incidents and long-term reclamation of contaminated areas are being developed. Also, the licensee plans to evaluate plant ventilation systems to determine if they are properly balanced and do not contribute to the spread of contamination.

No violations or deviations were noted.

9. Personal Contamination Control Program

The inspectors reviewed changes to the licensee's personal contaminations control program including mechanical and procedural controls, methods of detection, records of personal contamination, and investigation of incidents.

a. Procedural and Mechanical Controls, and Detection

As previously discussed in Inspection Reports No. 373/84031 and 374/84038, the quantity, placement, and shielding of personal contamination detection equipment needed improvement. Since then, the licensee has increased the number of friskers in low background areas and provided portable shielding booths for some friskers in higher background areas. The licensee has ordered more friskers and shielding booths, and plans to provide permanent frisker shielding booths in certain areas. Also, the licensee is installing portable monitors at several controlled area exits. Problems with establishment of adequate frisker stations in the reactor buildings is discussed in Section 3.

In order to better identify areas and equipment that have become contaminated, the licensee now changes the frequency of routine swipe sampling depending on work being done in the areas. Also, more extensive use of broad area towel wipes to more readily identify contamination spread to clean areas has been instituted. The licensee believes these changes will reduce incidental contamination events by quicker identification of previously unidentified contaminated areas/equipment.

The licensee has changed their work request form to include a "contamination related" category. This category is to indicate that the work to be done would reduce or eliminate the source of contamination of equipment or building surfaces. When the work request is "contamination related," the Contamination Control Coordinator (CCC) reviews the request and assures that it is given the highest possible priority; the CCC tracks the work request through completion.

b. Personal Contamination Incident Investigations

Each incident of personal skin or clothing contamination is documented with the contamination extent and concentration recorded on a standardized form. Prior to April 1985, only recurrent contamination incidents by an individual were investigated. Since then, an investigative meeting has been held for each incident; in attendance is the involved individual, the individual's department head or representative, a health physicist, a union representative, and an industrial relations representative (for CECOs employees). The meeting results are recorded on a form which covers the event description, root cause determination, procedure violations, and corrective action recommendation. The event investigation includes recurrence review (person and type), need for mechanical or procedural corrective actions, need for additional or different training, and possible need for personnel action. The results of each investigation is further reviewed by the CCC. This review includes assessment of the adequacy of the investigation and appropriateness of the corrective action recommendation.

The Rad/Chem Supervisor provides a daily report (five days a week), to department heads and upper management, of the number of personal contamination incidents and a brief description of each incident. The CCC updates a trending graph each month and provides the graph to department heads and upper management.

During the inspectors' selective review of personal contamination incident investigations, and discussions with licensee representatives, no obvious indication of recurrences by an individual or specific job task was noted.

No violations or deviations were identified.

10. Rad/Chem Improvement Plan

The licensee has recently initiated the Rad/Chem Improvement Plan. The Plan was developed as a result of weaknesses identified in the area of radiological controls (Inspection Reports 50-373/85014; 50-374/85014), and intended to improve the performance of the program. The plan itemizes and presents a completion date for each proposed improvement in the areas of frisking, staffing, space, personnel and area contamination, high radiation area door violations, unconditional releases, and interface with other departments. Based on the inspectors' review, it appears the significant weaknesses have been addressed by the plan. Improvements which have been implemented include: locating more friskers and frisker booths in the reactor and turbine building, increasing Rad/Chem office and work space, improving controls for preventing radioactive material release into unrestricted areas, promoting an experienced radiation safety person into the department management, and dedicating a full time employee to contamination control coordinator. The plan has been generally implemented and completed on schedule. Several improvements remain to be implemented, including: addition of two professional health physicists to the staff, completion of installation work for two of the four state-of-the-art whole body friskers, completion of the evaluation of the cause for recurring personal contaminations and implementation of corrective actions, and resolution of problems with the remote barrel monitor which is still not operational due to mechanical problems with the crane. These matters were discussed at the exit meeting.

11. Radiation Work Permits (RWPs)

The inspectors reviewed implementation of the RWP program including supporting radiological surveys. The licensee began implementation of an RWP program designed to cover all entry into and work in radiologically controlled areas early in 1985.

To cover routine entries and work, the licensee established 66 extended RWPs with a duration of one year. These 66 RWPs establish radiological controls and track dose for specific recurring tasks and routine tours. During the inspectors' selective review of extended RWPs it was noted that, of the 33 reviewed, 21 extended RWPs had no dose assigned for 1985 as of November 1, 1985. The dose assigned to each RWP is accumulated mainly from dosimeter cards completed by each person who receives 10 mrem during a days work on an RWP; the dose for each RWP is accumulated on a computerized records system. During the selective review, it became apparent that the extended RWP system, as it was being applied, was cumbersome and difficult to implement. It appears that the dose assigned to some RWPs was incorrectly applied to different but similar RWPs. This incorrect application may be a result of the apparently cumbersome system. During discussions, the licensee stated that the extended RWP system was conservatively initiated and implemented, and that they recognize the need to simplify the system. The licensee further stated that they intend to

reduce the number of extended RWP's on January 1, 1986. This matter was discussed at the exit meeting and will be further reviewed during future inspections. (50-373/85036-01; 50-374/85037-01)

The inspectors cursorily reviewed implementation of selected extended and job specific RWP's. By observation of stationmen collecting laundry at the Unit 1 drywell step-off-pad, discussions with rad/chem personnel concerning proper use of protective clothing, and review of the applicable RWP (RWP 850127, "Routine Housekeeping Activities, Unit 1 Reactor Building"), the inspectors found that the RWP was not specific enough and led to confusion. This matter was discussed with licensee representatives who acknowledged the need for clarification of this and similar RWP's.

The inspectors selectively reviewed direct radiation, surface contamination, and airborne activity surveys performed to establish radiological protective measures for RWP's. No significant problems were noted.

No violations or deviations were identified.

12. High Radiation Area Access Controls

The inspectors reviewed the licensee's compliance with technical specification and procedural requirements for High Radiation Area (HRA) access controls.

The licensee has experienced recurrent HRA access control problems since Unit 1 power operations commenced; these problems are recorded by the licensee in Radiological Occurrence Reports (RORs). During 1984, a violation was issued for a specific incident of failure to adequately control access to a HRA (Inspection Reports 50-373/84-14; 50-374/84-18). During the first three calendar quarters of 1985, 37 RORs were written by the licensee concerning violations of HRA procedural or technical specification access requirements. These violations included 23 for unsecured and unguarded HRA barricades, five for HRA keys left unattended, and nine for unidentified or unsecured HRAs discovered during performance of routine radiation surveys. The licensee's review and corrective actions for individual occurrences appear adequate; however, as evidenced by recurrence of similar events, the corrective actions have not been totally effective. To correct this problem the licensee initiated a radiation chemistry improvement program, in the latter part of 1985, which includes specific actions to strengthen this program.

During the HRA access controls review, the inspectors reviewed the licensee's compliance with LRP-1120-2, "High Radiation Area Access Control". Section F.1.f. of this procedure requires that immediately before entering a HRA, the persons entering must call the Operating Shift Supervisor (OSS) or his designated alternate to inform him of the entry and approximate duration. Section F.1.g. requires that immediately after departing a HRA, the person departing must call the OSS or his designated alternate to inform him that a safe exit has been made. At the inspectors'

request, the NRC Senior Resident Inspector asked two OSSs if the two procedure sections are being complied with. The OSSs replied that calls are not always made to inform the OSS or his designated alternate that a high radiation area entry will be made, and calls to inform a safe exit are seldom made. No log of such calls is maintained by the OSS or his designated alternate. Failure to comply with LRP-1120-2 requirements is a violation of Technical Specification 6.2.B. (50-373/85036-02; 50-374/85037-02)

One violation was identified.

13. Dry Radioactive Waste Volume Reduction Program

As part of the licensee's radioactive waste reduction program, the licensee has placed several pairs of contaminated and uncontaminated waste containers throughout the reactor buildings. The waste containers for uncontaminated waste, which are colored green and labelled "Uncontaminated Waste Only", are only for disposing of potentially uncontaminated, nonradioactive materials. All materials disposed of in these containers are surveyed before release to an unrestricted area. The survey includes opening each plastic waste bag, spreading the contents in an exhausted hood, (includes high efficiency particulate filters) and hand frisking the contents of the bag. Waste containers intended for contaminated waste are colored yellow and magenta and are labelled "Contaminated Waste." The contents in these containers are disposed of as radioactive waste.

No violations or deviations were identified.

14. Surveillance - Plant Tours

The following problems were identified during tours of the plant: (1) During a previous inspection (Reports No. 50-373/85014; 50-374/85014), it was noted that persons who had removed their protective clothing in accordance with the step-off-pad (SOP) instructions, exited from the step-off-pad (SOP) area without first frisking. As a result, the licensee was cited for failure to make personal contamination whole body frisks after exiting from an SOP in accordance with procedural requirements. In response to this violation, the licensee stated that greater emphasis will be placed on supervisory accountability for worker performance, and on supervisory training. The licensee also stated that shielded frisker booths had been ordered and would be placed in the plant at strategic locations to allow whole body frisking nearer the SOPs, and that full compliance would be achieved when the frisker stations and additional monitors were installed. Completion is expected by December 1, 1985. During this inspection it was noted that the additional friskers and shielding booths were installed and being used for personal surveys; however, some personnel were continuing to change their clothes before performing a whole body frisk. Although the supervisors have been given additional training and issued instructions on several occasions to remind workers of their responsibility to frisk before donning their personal

clothing when exiting a contaminated area, it appears these actions have not been effective and full compliance has not been achieved. The This item remains open and will be reviewed further subsequent to the licensee's established completion date of December 1, 1985 (373/85014-01B; 374/85014-01B). (2) Posted instructions concerning frisker locations at most SOPs were incorrect; at some SOPs there were no instructions. (3) Two frisker booths were located in areas where the radiation fields were too high to effectively use the friskers. (4) HOT SPOT postings were, in most cases, difficult to understand. (5) At many SOPs there were insufficient clothing hampers. (6) On a few occasions, the inspectors observed that contract workers were having difficulty in properly removing rain-gear and protective clothing at the Unit 1 drywell. According to the workers, the problem was caused when a contract worker, who was stationed in the drywell area to assist the workers, was not present. The inspectors also noted there was occasionally some difficulty in providing radiological control over work activities in the drywell. The inspectors reviewed these observations with the licensee who stated that, due to a misunderstanding between station and contractor supervisors, the contract helper was removed from the drywell area, and that some of the drywell pre-entrance meetings between craft workers and rad protection personnel were not held. These matters were discussed at the exit meeting (50-373/85036-03; 50-374/85037-03).

Items (2) through (6) above were corrected, or were in the process of being corrected, by the conclusion of this inspection.

No violations or deviation were identified.

15. Exit Meeting

The inspectors met with licensee representatives (denoted in Section 1) at the conclusion of the inspection on November 22, 1985. The inspectors summarized the scope and findings of the inspection. The inspectors also discussed the likely informational content of the inspection report with regard to documents or processes reviewed by the inspectors during the inspection. The licensee did not identify any such documents/processes as proprietary. In response to certain items discussed by the inspectors, the licensee:

- a. Acknowledged the violation. (Section 13).
- b. Stated that they intend to meet the commitments made in the Radiation Improvement Plan, including those items which have not been completed. (Section 10)
- c. Stated that by January 1, 1986, they intend to reduce the number of Type I RWP's from sixty-six to six, and that they will attempt to simplify the RWP system. (Section 11)
- d. Acknowledged the inspectors' comments concerning the need for stronger staff surveillance to identify and resolve radiological problems and discrepancies found in the plant. (Section 14).