

U.S. NUCLEAR REGULATORY COMMISSION
REGION III

Report Nos. 50-373/90024(DRSS); 50-374/90025(DRSS)

Docket Nos. 50-373; 50-374

License Nos. 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: September 24 - 28, 1990

M. Schumacher for
Inspectors: R. A. Paul

10/23/90
Date

A. G. Januska
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10/23/90
Date

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

10/23/90
Date

Inspection Summary

Inspection on September 24 - 28, 1990 (Report Nos. 50-315/90024(DRSS);
50-316/90025(DRSS))

Areas Inspected: Routine unannounced inspection of the licensee's radiation protection program, including organization and management controls (IP 83750); external and internal exposure controls (IP 83750); training and qualifications (IP 83750); radiological controls (IP 83750); radiation occurrence reports (IP93702); plant tours and independent surveys; and the status of the radwaste sludge tank rooms (IP 84750).

Results: The organizational structure, management controls, staffing levels, and upper management support of the radiation protection program appeared generally adequate. One strength is the stability and experience level of the radiation protection staff. A weakness was identified involving effectiveness of corrective actions taken for self identified radiological occurrences which appear to have similar root causes (Section 11).

DETAILS

1. Persons Contacted

- ¹T. Benoit, Nuclear Quality Programs
- ¹D. Berkman, Assistant Superintendent Work Planning
- ¹G. Diederich, Station Manager
- ¹M. Friedmann, Station Health Physicist
- ¹J. Gieseke, Tech Staff Supervisor
- ¹T. Green, Health Physicist
- ¹P. Hamby, Nuclear Services H. P.
- ¹D. Hiegelke, Radiation Protection Manager
- ¹S. Jerz, Quality Assurance Group Leader
- ¹P. Kelly, ALARA
- ¹J. Lewis, TLD Coordinator
- ¹D. Murphy, Nuclear Quality Programs
- ¹T. Popp, Health Physicist
- ¹P. Wisniewski, Regulatory Assurance

- ¹R. Kopriva, NRC Resident Inspector
- ¹C. Phillips, NRC Resident Inspector

1 Present at the Exit Meeting on September 28, 1990

2. General

This inspection was conducted to review the licensee's radiation protection program. The inspectors toured licensee facilities to review posting, labeling, and access controls and perform independent surveys.

3. Licensee Action on Previous Inspection Findings (IP 92701)

(Closed) Open Item (373/90013-02;374/90014-02): Provide Region III with a copy of the completed ALARA review for the radwaste tank room cleanup project. See Section 12 for closure of this open item.

4. Organization and Management Controls (83750)

The inspectors reviewed the licensee's organization and management controls for the radiation protection program including organizational structure and staffing.

The radiation protection staff remains stable with a complement of about 64 permanent house personnel and 3 contractors. The staff is comprised of professional health physicists, operational and ALARA personnel, and full time contamination control personnel. The RPM appears to have good communication and support from the plant manager and communication and support from other department heads has improved. The station professional HP staff appears qualified to manage the radiation protection program and also receives substantial support from the corporate staff.

No violations or deviations were identified.

5. Training and Qualification (IP 83750)

The inspectors reviewed the licensee's general training program for radiation protection technicians (RPTs), and newly hired RPTs including: policies, goals, and methods; course content and applicability; qualification and test records, and instructor qualifications.

The current RPT training program at LaSalle is certified by the Institute of Nuclear Power Operation (INPO). The program consists of a fourteen week training program for new hires conducted at the Braidwood station training center, and further training at the LaSalle station for about two more years. All new hires must pass the required tests and OJT qualifications given at different stages of the training. Station RPTs receive about 2 weeks of training yearly and must also pass a required examination.

The review of the course outlines, lesson plans, and qualification records for both new hires and RPTs appeared good. The station program instructor is a former RPT foreman and appears qualified to conduct the station portion of the training program.

6. External Exposure Control and Personal Dosimetry (IP 83750)

The inspectors reviewed the licensee's external exposure control and personal dosimetry programs. The inspectors examined the current National Voluntary Laboratory Accreditation Program (NVLAP) certificate for Thermoluminescent Dosimeter (TLD) categories I - VIII which is good for all six CECo nuclear power plants. Accreditation is based on the results of a different station each year which qualifies all the stations. The NVLAP program allows a bias of +/- 50% whereas the licensee's quarterly intersite program conducted between the stations has limits of +/- 10% for gamma and +/- 20% for beta. Quarterly results for the LaSalle Station revealed only two instances since 1988 where the gamma tolerance of 10% was exceeded (14% 2nd Qtr. 1988 and 11.5% 4th Qtr. 1989) and no instances of greater than the 20% beta tolerance.

TLDs routinely used at the station have the capability of detecting beta, gamma and neutron exposure. The readout system records beta skin dose, gamma whole body doses and beta dose to the lens of the eye. Exposures exceeding limits are recorded and flagged to provoke an exposure investigation. The neutron component is not routinely reported but the raw data are available and neutron exposures can be calculated if necessary using an appropriate algorithm.

Quality assurance of TLD measurements is performed monthly on the TLD reader, both independent of and during badge processing with an acceptance criterion of +/- 5%. If it fails the test, adjustments are made and the system is recalibrated. The inspectors saw evidence of this calibration. Measurement quality during processing is assured by automatic abortion of a processing run if any QA irradiated badge reads outside of +/- 15% and by adjusting the dose recorded if the mean of

10 QA badges in any run of five trays exceeds +/- 10%. No problems were identified in the TLD program.

The inspector examined records and reports of exposures and discussed review of dose status and dissemination of information. Exposure information from Self Reading Dosimeter (SRD) dose cards is entered daily into a data base and a daily report is generated and reviewed by a Health Physicist. The report included flags at predetermined doses which will provoke a range of administrative actions to limit further exposure.

The inspectors reviewed the summaries of TLD vs SRD results, and a monthly summary which prints out disagreements of greater than 25% between the TLD and SRD results; notification via appropriate supervision is made for repeated occurrences. Additional data is recorded which aids in showing patterns for individuals, improper wearing or use, trends etc. and current, previous, and year to date comparisons.

The current site person rem exposure through August 31, 1990, is 813 Rem and the projected dose for the same period was 751 rem. The licensee has exceeded the projected goal because of budget overruns due to unscheduled work and has submitted an internal request for an exposure revision for the year of 945 rem. The exposure for 1989 was 1386 Rem.

No violations or deviations were identified.

7. Internal Exposure Control (IP 83750)

The inspectors reviewed selected aspects of the licensee's internal exposure control and assessment programs, including use of engineering controls, respiratory equipment, and whole body and air sampling counting equipment.

The inspectors selective review of whole-body count results for 1990 to date indicated no results exceeding the 40 MPC-control measure. The inspectors selectively reviewed relevant whole body count and calibration procedures, the whole body count facilities and equipment, recent calibration results, and the the whole body count program with cognizant health physics personnel. No significant problems were identified.

Engineering controls to prevent potential airborne and surface contamination includes air blowing equipment and work enclosures to augment the building ventilation. Based on survey and air sample data it appears these controls are effective.

Air sample data were selectively reviewed. Air samples are taken, counted, and evaluated in accordance with procedural requirements.

No violations or deviations were identified.

8. Audits and Appraisals (IP 83750)

The inspector reviewed the QA audit, surveillance and assessment reports from July 1989 to date. The licensee's QA audit/surveillance program appears adequate to assess the technical performance and compliance with requirements with respect to the Radiation Protection Department. The QA auditors assigned to review this functional area appear to have the necessary expertise and experience prerequisites. The reports reflect performance based audits when appropriate and the responses to the findings appear to be timely and along with the reports in sufficient depth.

No violations or deviations were identified.

9. Primary Coolant Radiochemistry (IP 84750)

Technical Specification 3.4.8 requires that the specific activity of the primary coolant not exceed 0.2 microcurie per gram (uCi/gr) dose equivalent I-131 (DEI-131) and that this limit is verified every 31 days. The inspectors reviewed the licensee's primary coolant radiochemistry results for 1989 and 1990 to date to determine compliance with the Technical Specification requirements for the (DEI-131) concentration. The review and discussion with licensee personnel indicated that the DEI-131 concentration for the primary system is performed weekly and did not exceed 0.2 E-04 uCi/gm for the review period for both units.

No violations or deviations were identified.

10. Control of Radioactive Materials and Contamination, Surveys and Maintenance (IP 83750)

The inspectors reviewed the calibration and QC checks performed on the IPM-7/8 (beta) and PM-7 (gamma) portal monitors. During this review, concerns were raised regarding noted differences between the source certificate activity levels of the calibration and check sources and the values used by the licensee for the calibrations. It was also noted that the QC source check used for alarm set points had a source strength approximately two orders of magnitude greater than the IPM-7/8 trip setting and approximately twice the trip setting for the PM-7. These matters were discussed with the licensee who agreed to verify the value used for the calibration, determine source(s) needed for QC checks, identify any other check sources needed, and initiate purchases by October 26, 1990 (Open Item 373/90024-01; 374/90025-01)

The inspectors made two tours of the plant to examine posting and labeling, and perform a direct and smear survey. Only one smear out of 40 taken indicated loose activity greater than 1000 d/m/100 cm².

11. Radiation Occurrence Reports (93702)

The inspector reviewed the licensee's radiological occurrence reports (RORs) generated from July 1989 to September 1990, to determine if programmatic problems exist and if deficiencies were promptly and

adequately corrected. During this period, the licensee identified about twenty incidents involving contamination controls, three in which personal administrative daily dose limits were exceeded, three involving dose rates in controlled areas that were significantly exceeded, eight in which station procedures were not followed, and others involving poor work practices and administrative control problems. There were no cases in which regulatory limits were exceeded and in those cases where personal exposure occurred, the inspector verified the licensee's dose assessment. The RORs were generally well investigated and timely, and in most cases there was a good root cause analyses performed and good corrective actions were taken. Examples of events whose root and secondary cause involved poor planning and communication between radiation protection and other departments are delineated as follows:

<u>ROR</u>	<u>Ocurrence Date</u>	<u>Description</u>
89037	10-02-89	Handling of radioactive ropes on the refuel floor under an inappropriate RWP which resulted in personal contamination.
89038	10-06-89	Personal exposure in excess of daily administrative limit because adequate surveys were not performed as the result of poor pre-job planning and communication between QC and HP.
89039	10-12-89	Absence of adequate industrial safety review and poor job-planning and HP coverage and of work in the suppression pool that resulted in personal contamination and intake.
89048	12-28-89	No safety review of potentially hazardous work in the suppression pool, and personal contamination and intake because of poor job-planning and absence of professional HP coverage.
90009	F04-06-90	Personal exposure in excess of daily administrative limit because dose verifications had not been made in the location near a "hot" pipe where a contract employee was working; the worker did not inform the RPT that his work would take him to that location.
90019	05-24-90	Spread of floor contamination and high airborne radioactivity concentrations in the drywell caused because of poor pre-job planning and communication between contract workers and the RPTs.

- 90023 05-25-90 Personal intake of radioactive material while assisting in removal of highly contaminated clothing from a worker in stress without benefit of a respirator.
- 90026 07-03-90 Spread of contamination in the MM shop due to failure of an RPT to recognize potential for problem, and poor pre-planning and communication between maintenance and health physics.

Although these occurrences differ in details, they appear to share common features such as poor pre-job planning and poor or incomplete communication between involved parties. As noted above, corrective actions for each, taken narrowly, appeared to be adequate. However, the continued occurrence of similar events indicates corrective action weaknesses and suggests the existence of more pervasive root causes such as training of job reviewers and workers. These weaknesses were discussed at the exit interview and will be further reviewed during future inspections. (Open Item 373/90024-02; 374/90025-02)

12. Sludge Tank Room Reclamation Project (84750)

The inspectors reviewed the current status of the cleanup of contaminated sludge and resin in the rooms housing the Unit 1 Chemical Waste Collector and Process Tanks, and the WS/URC Sludge Tanks. As of October 1, 1990, there was about nine person-rem accumulated for the project, the average room dose rate in the CWT has been reduced from about 2 mrem/hour to about 25 mrem/hour and the floor contamination levels reduced to about 2000 dpm/100cm². The inspectors observed the cleanup in progress and noted the effective use of a robot adapted by station personnel for use in the cleanup project. It appeared the ALARA procedures developed for this project, and submitted to Region III before the project started, were used. It was also observed that good radiological controls were employed and that the project will apparently be completed on schedule.

13. Exit Interview

The scope and findings of the inspection were discussed with licensee representatives (Section 1) at the conclusion of the inspection on September 28, 1990. The inspectors discussed in detail the similarities noted in various Radiation Occurrence Reports and the indicated weaknesses in corrective actions. The inspectors also discussed an apparent inadequacy noted in the IPM-7/8 and to a lesser degree the PM-7 QC checks. The licensee acknowledged the inspectors' comments. Licensee representatives did not identify any documents or processes reviewed during the inspection as proprietary.