U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-373/89014(DRSS); 50-374/89014(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: May 23 through June 16, 1989

Inspectors: C. F. Gill — Date: 6/30/89

W. J. Slawinski — Date: 6/30/89

Approved By: W. G. Snell, Chief — Date: 6/30/89
Emergency Preparedness and
Effluents Section

Inspection Summary

Inspection on May 23 through June 16, 1989 (Reports No. 50-373/89014(DRSS); 50-374/89014(DRSS))
Areas Inspected: Routine, unannounced inspection of the licensee's radwaste/transportation program, including: organization and management controls (IP 83750, 84750, 84850), training and qualifications (IP 83750, 84750, 84850), gaseous radwaste (IP 84750, 84724), liquid radwaste (IP 84750, 84723), solid radwaste (IP 84750, 84850, 84722), shipping and transportation (IP 83750, 84850), audits and appraisals (IP 83750, 84750, 84850), effluent reports (IP 84750, 84723, 84724), process and effluent control instrumentation (IP 84750), primary coolant radiochemistry (IP 84750), and air cleaning systems (IP 84750, 84724).
Results: The organizational structure, management controls, staffing levels, and upper management support for the radwaste/transportation program appeared generally adequate. The licensee's 10 CFR 61 waste generation, classification,

and characterization program appears to be good. Two violations were identified (failure to report required information in the semiannual radioactive effluent release reports - Section 11, and failure to properly implement SGTS and CREVS carbon adsorber T/S Surveillance Requirements into procedural requirements - Subsection 15.e); however, because the provisions of Section V.A of Appendix C to 10 CFR Part 2 have been satisfied, a Notice of Violation will not be issued for the first violation. Regulatory concerns (unrelated to the second violation) regarding the SGTS and CREVS inplace and laboratory filter testing programs were identified (Subsection 15.g). Weaknesses were perceived regarding the lack of progress in correcting a previous NRC-identified station procedural deficiency (Section 3) and in correcting licensee-identified sampling system problems (Section 10).

DETAILS

1. Persons Contacted

*J. Ahlman, Regulatory Assurance Staff
*J. Atchley, Operating Engineer
A. Bailey, Radwaste Shipping Coordinator
*D. Benton, HVAC Contractor, Sargent and Lundy (S&L)
*W. Burns, Technical Staff Engineer, S&L
L. Corts, BWRED
*G. Diederich, Station Manager
*K. Francis, Radwaste Staff
*J. Gieseker, Technical Staff Supervisor
#T. Hammerick, Regulatory Assurance Supervisor
*H. Hentschel, Operating Engineer
*D. Hieggelke, Health Physics Supervisor
#*W. Huntington, Technical Superintendent
*K. Klotz, GSEP Coordinator
G. Lahti, Assistant Head-NSLD, S&L
#F. Lawless, Regulatory Assurance Staff
G. McCallum, Health Physicist
*P. Nottingham, Chemistry Supervisor
W. Paschal, Assistant Head-HVACD, S&L
*G. Roumeliotis, Technical Staff Engineer
J. Schuster, Chemist
L. Shearer, Radwaste Coordinator
#*J. Shields, Auxiliary Group Leader, Technical Staff
T. Wiemholt, Technical Staff Engineer

*R. Kopriva, NRC Resident Inspector
R. Lanksbury, NRC Senior Resident Inspector
*W. Snell, NRC, Chief, Emergency Preparedness and Effluents Section

The inspectors also contacted other licensee and contractor personnel.

*Denotes those present at the onsite interim exit meeting on June 2, 1989.

#Denotes those present at the telephonic exit meeting on June 16, 1989.

2. General

This inspection was conducted to review the licensee's radwaste/radioactive material shipping and transportation program and liquid, gaseous and solid radwaste management programs including compliance with waste generator requirements of 10 CFR 20 and 10 CFR 61. The inspection included tours of the onsite radwaste facilities, observation of work in progress, review of representative records, and discussions with licensee and contractor personnel.

3. Licensee Action on Inspection Findings

(Closed) Open Item (373/86045-01; 374/86045-01): Licensee's request for onsite disposal of contaminated soil associated with storage tank HPCS return line leaks discovered in 1985. On May 10, 1988, the licensee submitted an application for onsite disposal to the Agreement State licensing authority (Illinois Department of Nuclear Safety (IDNS)); licensee representatives indicated that IDNS has not yet responded to the application. Since the licensee has completed all identified NRC jurisdictional actions regarding this matter, this item is closed.

(Closed) Open Item (373/88024-01; 374/88023-01): Reduce high background levels on liquid radwaste discharge monitor. The licensee replaced the contaminated sample chamber with a new especially coated sample chamber in December 1988. Licensee representatives stated that only one liquid discharge has occurred since the replacement; no monitoring problems were noted by the licensee. A modification request package to further enhance monitor operability is scheduled for completion in July 1989. The licensee is presently considering changing the sample chamber geometry by fabricating and installing a tubular sample chamber which could be easily replaced, installing a reverse high flow flush system, and modifying the existing forward flush system. The licensee expects the modification, if approved, to be budgeted for completion in 1990. Since the licensee has completed all NRC identified actions regarding this matter, this item is closed; however, a new open item is being issued pending the licensee's evaluation of the modification request package. This matter will be reviewed further during a future inspection. (373/89014-05; 374/89014-05)

(Closed) Open Item (373/88024-02; 374/88023-02): Revise gaseous calibration procedures to include instructions for checking setpoint variations. Because of a communication/coordination problem between licensee technical departments, no progress on resolving this matter occurred before the conclusion of the onsite inspection. In response to the inspectors' concern regarding the lack of progress, the licensee agreed at the exit meeting on June 2, 1989, to revise the appropriate procedures by June 16, 1989. On June 14, 1989, the procedures (No. LIS-OG-104 and No. LIS-OG-204) were revised; this matter is closed.

(Closed) Unresolved Item (373/88024-04; 374/88023-04): Review corrective actions to prevent contaminated waste from entering the clean demineralized water system. Licensee representatives indicated that all corrective actions have been completed with the exception of the installation of appropriate check valves which is currently scheduled for completion by November 3, 1989. Since the licensee has completed their evaluation of this event and initiated corrective actions, this unresolved item is closed; however a new open item is being issued pending completion of all corrective actions and further NRC review during a future inspection. (373/89014-06; 374/89014-06)

(Open) Open Item (373/88028-03; 374/88028-03): Review licensee's investigation of high integrity container (HIC) liner overflows. The licensee expects the investigation to be completed by July 1, 1989. This matter will be reviewed further during a future inspection.

(Closed) Violation (373/89014-02; 374/89014-02): Violation of T/S 6.6.A.4 (failure to report required information in the semiannual radioactive effluent release reports). Because the provisions of Section V.A of Appendix C to 10 CFR Part 2 have been satisfied, no Notice of Violation was issued; this item is closed (see Section 11).

4. Organization and Management Controls (IP 83750, 84750, 84850)

The inspectors reviewed the licensee's organization and management controls for the radwaste and shipping transportation programs, including: organizational structure; staffing; delineation of authority; effectiveness of procedures and other management techniques used to implement the program; and experience concerning self-identification and correction of program implementation weaknesses.

The overall management of the solid, liquid, and gaseous radwaste and radwaste transportation programs are the responsibility of the Production Superintendent, who reports directly to the Station Manager. Direct implementation of these programs is the responsibility of the Radwaste Coordinator, who is supported by six technical radwaste staff members responsible for shipping/documentation coordination and operational aspects of the liquid and solid radwaste control programs. The health physics and chemistry staff provide waste classification, sampling and analysis assistance, as needed. The radwaste systems are operated by the operations department with the exception of the contractor owned/operated dewatering and solidification equipment. The overall responsibility for the process and effluent monitoring systems is shared between the functional areas of operations, radiation protection and chemistry, system engineering, and instrument maintenance. Calibration and related surveillances for effluent monitoring and control instruments are the shared responsibility of the chemistry and instrument maintenance staffs. The individuals and organizational entities assigned the responsibility for radwaste management and transportation are procedurally designated and appear to be properly delineated. The organization and management controls for the radwaste/transportation programs appear adequate.

The Waste-Trac (computer) program is currently being developed and phased-in at all CECo stations and is targeted for implementation at LaSalle in late 1989. The program reportedly enhances the licensee's existing ability to prepare radwaste manifests, reports, and documentation management and is also an apparently effective tool to estimate packaged waste radionuclide content and classify these wastes pursuant to 10 CFR 61.

No violations or deviations were identified.

5. Training and Qualification (IP 83750, 84750, 84850)

The inspectors reviewed selected portions of the training and qualification aspects of the licensee's radwaste/transportation programs, including: changes in responsibilities, policies, programs and methods; qualifications of personnel; and provisions for appropriate radwaste/transportation training of certain station personnel.

The inspectors cursorily reviewed the training provided to station personnel responsible for DAW collection/processing (i.e., stationmen), waste classification, and manifest and shipment preparation (i.e., radwaste technical staff); no significant problems were noted. Stationmen complete a training and qualification program that includes a required reading package and proficiency demonstration covering aspects of DAW collection, sorting, preparation, and packaging. The Radwaste Coordinator meets individually with all stationmen trainees to evaluate their general knowledge of program requirements and discuss work responsibilities.

The inspectors verified that the radwaste technical staff attend continuing training programs and seminars to maintain competence in applicable areas of speciality. In approximately the last year, all radwaste technical staff members and health physicists involved in waste classification completed a three-day solid radwaste and transportation (vendor) course that included review of waste generator requirements of 10 CFR 20 and 61, waste solidification methodology and Department of Transportation (DOT) regulations. Review of the course manual and discussions with recent course participants disclosed the training to be comprehensively structured and beneficial.

No violations or deviations were identified.

6. Gaseous Radioactive Waste (IP 84750, 84724)

The inspectors reviewed the licensee's gaseous radwaste management program, including: changes in equipment and procedures; gaseous radioactive waste effluents for compliance with regulatory requirements; adequacy of required records, reports, and notifications; process and effluent monitors for compliance with maintenance, calibration, and operational requirements; and experience concerning identification and correction of programmatic weaknesses.

The gaseous effluent release paths, control and filtration mechanisms, and effluent sampling and quantification methods remain as previously described (Inspection Reports No. 50-373/88024(DRSS); 50-374/88023(DRSS)) except that effluent filtration also exists provided during normal (routine) containment vents and purges exhausted via the regular vent stack. The standby gas treatment system (SGTS) used for non-routine releases provides effluent filtration apart from the normal vent/purge filtration.

The inspectors selectively reviewed gaseous effluent release records and sampling/analysis data for 1989 and effluent summary data for 1985 to date. Sampling frequency and analysis methods appear to meet technical specification requirements; no problems were noted. In 1988, about 3800 curies of noble gas and 7.7 E-3 curies of iodine-131 were released in gaseous effluents from both units combined. The majority (84%) of the noble gas release occurred during the first half of 1988 before the licensee corrected Unit-2 fuel cladding problems that were initially identified by the licensee early in the fuel cycle in July 1987. Using the Offsite Dose Calculation Manual (ODCM) methodology, the licensee

calculated maximum whole body and thyroid doses to an individual beyond the site boundary from these 1988 releases of 2.8E-2 mrem and 1.2E-2 mrem, respectively. A comparison with 1985-1987 gaseous effluent data indicates that the amount of noble gas released increased significantly in 1987 when about 6500 curies was released, the increase being attributed primarily to the aforementioned Unit-2 fuel cladding problems. The cladding problem, however, was mitigated during the cycle and rectified during the unit's refueling outage (October 1988 to December 1988) when defective assemblies were replaced. No significant increase in the primary coolant dose equivalent iodine-131 resulted from the cladding failure. In 1989 through March, negligible quantities of noble gas and less than 1E-4 curies of iodine-131 were released in gaseous effluents. Previous fuel cladding problems appear to be corrected.

No violations or deviations were identified.

7. Liquid Radioactive Waste (IP 84750, 84723)

The inspectors reviewed the licensee's liquid radwaste management program, including: changes in equipment and procedures; liquid radioactive waste effluents for compliance with regulatory requirements; adequacy of required records, reports, and notifications; process and effluent monitors for compliance with maintenance, calibration, and operational requirements; and experience concerning identification and correction of programmatic weaknesses.

Radioactive liquids released from the radwaste treatment system are comprised of contributions from both units. Liquid effluents are released on a batch basis from one of two discharge tanks to a single monitored radwaste release line. This line releases the effluent through the cooling lake blowdown line which provides dilution prior to ultimate release into the river. The liquid effluent sampling and analysis methods and determination of radwaste discharge flow rates and effluent monitor alarm setpoints remain as previously described (Inspection Reports No. 50-373/88024(DRSS); 50-374/88023(DRSS)).

The inspectors selectively reviewed radioactive liquid batch release sampling and analysis records from October 1988 to date and liquid effluent summary and trending data from 1986 to date. The sampling and analyses performed appear to comply with technical specification requirements. Station Procedure No. LCP-140-07 governing liquid effluent releases was reviewed and the adequacy of release rate, MPC fraction, and monitor alarm setpoint calculations verified; no significant problems were noted.

In 1988, there were 48 liquid radioactive effluent batch releases (both units combined) totaling about 11 curies of gross beta-gamma activity (excluding tritium) and 1.75 curies of tritium. In 1986 and 1987, about 1.8E-2 and 0.89 curies, respectively of gross beta-gamma activity was released in liquid effluents from both units combined; corresponding tritium activity released was 0.14 and 1.1 curies, respectively. The increase in liquid effluent activity released in 1988 reportably results

primarily from increased reactor availability. The licensee calculated whole body and organ (GI-LLI) doses from liquid effluents in 1988 to an individual beyond the site boundary of 2.75 E-3 mrem and 5.91 E-3 mrem, respectively. In 1989 through May, eight radioactive liquid effluent batch releases were made totaling less than 1.0 curies of gross beta-gamma activity.

No violations or deviations were identified.

8. Solid Radwaste and 10 CFR 61 (IP 84750, 84850, 84722)

The inspectors reviewed the licensee's solid radwaste management program, including: changes to equipment and procedures, processing, control, and storage of solid wastes; adequacy of required records, reports, and notifications; performance of the process control and quality assurance programs; compliance with waste generator requirements in 10 CFR 20.311 and 61 including implementation of procedures to properly classify and characterize waste, prepare manifests, and mark packages; and experience concerning identification and correction of programmatic weaknesses. Tours of the radwaste truck bay where DAW processing (compaction) and waste stream solidification and dewatering operations are conducted were made.

a. Overview

Solid radioactive waste consists primarily of spent resin, filter sludge, evaporator bottoms (concentrator waste), dry active waste (DAW) and to a lesser extent, contaminated metal/scrap.

In 1987 and 1988, the license and shipped sites about 16,000 cubic feet and 13,200 cubic feet of "wet" solid (solidfied/dewatered) wastes to low-level waste burial sites, respectively. This waste volume was comprised primarily of concentrator wastes. DAW and contaminated metal/scrap burial volumes (after processing and volume reduction) were about 10,000 cubic feet and 6200 cubic feet in 1987 and 1988, respectively. According to the licensee, the DAW and contaminated metal burial volumes for 1988 are less than that actually generated at the station due to delays associated with vendor waste treatment processing. The licensee expects larger DAW/contaminated metal burial volumes in 1989 due to carryover from 1988 when large volumes of contaminated metal were generated primarily from an extensive snubber removal project. Also, other miscellaneous contaminated metal/scrap that has been stored by the licensee and accumulating since 1986 while awaiting waste treatment vendor bid specification, was transferred to the vendor in 1988. In 1989 through April, radwaste burial volumes were 4300 cubic feet of solidified/dewatered products and about 4000 cubic feet of DAW and contaminated metal.

b. Solid Waste Processing

The station initially segregates contaminated and potentially clean dry solid wastes by designating separate waste receptacles throughout the plant. DAW is collected, sorted, and compacted onsite by the licensee using conventional compaction techniques and subsequently transferred to a vendor for supercompaction. Compaction ratios of about three are achieved through supercompaction. Non-compactible DAW is packaged in 96-cubic foot metal bins and shipped directly to a low-level burial site. Contaminated metal/scrap items are transferred to vendor waste-treatment facilities for decontamination and disposal.

"Wet" solid wastes are either solidified by the licensee or vendor solidified/dewatered. Evaporator bottoms are solidified in 55-gallon drums using the licensee's Stock Equipment cement solidification system. Waste sludge is solidified onsite by a vendor in large capacity liners and bead and powdered resins are vendor dewatered and shipped in high integrity containers (HICs). A few years ago, the licensee modified their Stock Equipment System to allow interface with the vendor's system; as a result, the licensee can "valve-in" waste from process tanks to either the Stock or the vendor system. By 1990, the licensee plans to discontinue solidification using the Stock System and rely exclusively on vendor systems. This change will require facility expansion and hardware modifications to the north storage area of the radwaste truck bay.

c. Process Control Program (PCP)

Licensee and vendor solidification and dewatering operations are performed pursuant to NRC-approved Topical Reports and PCPs. Stock Equipment System solidification is conducted by the licensee using station personnel and procedures. Vendor solidification/dewatering is conducted by vendor personnel under the licensee's supervision using vendor procedures that are approved by the licensee.

The inspectors reviewed the licensee's PCP for solidification using the Stock Equipment System and discussed concentrator waste batch sampling/analysis and solidified product inspection methods with the licensee. The inspectors also reviewed the vendor's PCP for in-container (liner) solidification of filter sludge and discussed solidified product testing procedures. No significant problems were identified with implementation of either PCP. QA audits of waste solidification/dewatering activities are discussed in Section 10.

In 1988, the licensee utilized the services of another vendor, on a short-term basis, to process (solidify) resin wastes generated as a result of the Unit-1 recirculation piping (Low Oxidation-State Metal Ion (LOMI) process) chemical decontamination. This vendor was subsequently used to solidify similar wastes generated during the chemical decontamination of the Unit-2 recirculation system. In the latter instance, the waste was processed at reduced waste

loadings to avoid solidified product problems that had reportedly been encountered by other licensees. The waste processing was conducted under licensee supervision using vendor personnel, equipment, and procedures and pursuant to the vendor's (NRC-approved) PCP. This vendor's procedures, solidification process and PCP were evaluated/approved by the licensee and reported to the Commission as required by technical specifications; no problems were noted.

d. 10 CFR 61

The inspectors reviewed the licensee's solid radwaste program for compliance with waste generator requirements of 10 CFR 20.311, 61.55 and 61.56. This review included examination of waste manifests, waste classification and stabilization methods/procedures, and the station's QC program to meet 10 CFR 20.311(d) requirements. The QC program is discussed in Section 10.

Generally, waste classification is determined by licensee (in-house) gamma isotopic analysis of actual waste stream samples collected from each batch of liquid system waste prior to solidification or dewatering. Isotopic concentrations which cannot be readily measured by gamma spectral analysis (primarily transuranics) are determined using vendor derived scaling factors that are determined on a waste stream (plant) specific basis at least annually. The licensee collects waste stream specific samples for vendor isotopic analyses and scaling factor determination, including smear samples from various plant work areas representative of DAW characterization. Liquid waste stream samples analyzed by the licensee for gamma emitter contributions are compared with the latest vendor analyses to determine if there has been a significant (factor of ten) change. Similarly, to ensure proper DAW characterization, the licensee collects/analyzes area smear samples on a quarterly basis and compares them with vendor results. Results of the last vendor analysis of waste stream and area smear samples transmitted to the licensee in a vendor report dated February 1989 were reviewed by the inspectors; no problems were noted.

Waste classification is normally determined by a station health physicist using Station Procedure No. LRP-1520-8. The procedure was reviewed by the inspectors and found to be consistent with 10 CFR 61.55 and NRC Branch Technical Positions for waste classification. Waste classification calculations for selected 1989 shipments were reviewed by the inspectors; no problems were identified. Waste manifests for radwaste shipments made from June 1988 to date were selectively reviewed and appear to meet 10 CFR 20.311 requirements.

To date, the licensee has not generated Class B or C wastes. Class A waste is shipped either as unstable (DAW and solidified evaporator bottoms) or as stable (dewatered) waste in HICS or solidified in cement using the vendor's solidification system. HICs used by the licensee to provide waste stability pursuant to 10 CFR 61.56 are approved by the burial site state or are issued

state certificates of compliance (COCs) as appropriate. The inspectors verified that these state approvals/COCs are maintained by the licensee.

The licensee's program for waste classification, form and characterization appears to be well developed, consistent with regulatory guidance and is being properly implemented. Waste manifest and shipment tracking programs also appear properly developed/implemented and meet applicable regulatory requirements. According to the licensee, no significant problems have been identified with their shipments by the waste burial site inspectors. The licensee's waste generator/10 CFR 61 classification and characterization program appears to be good.

No violations or deviations were identified.

9. Transportation of Radioactive Material and Radwaste (IP 83750, 84850)

The inspectors reviewed the licensee's transportation of radioactive materials program, including: determination whether written implementing procedures are adequate 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.

In 1988, the licensee made nearly 200 radioactive material and about 135 radwaste shipments. The radioactive material shipments consisted primarily of protective clothing sent to a nearby laundry vendor and shipped as LSA in 59-cubic foot "strong tight" metal bins. The radwaste shipments consisted primarily of solidified evaporator bottoms transferred to waste burial sites as Class A unstable waste in 55-gallon drums. Cumulative activity in radwaste shipped to low-level waste burial sites in 1988 (primarily Beatty, Nevada) was about 3400 curies in a total volume of nearly 20,000 cubic feet. About 26,000 cubic feet was shipped to burial sites in 1987. In 1989 to date, about 60 radioactive material and 65 radwaste shipments were made.

In addition to radwaste and laundry, the licensee also ships radioactive samples to contractor laboratories for analysis and other miscellaneous limited quantities and radioactive materials shipped common carrier that do not require vehicle placarding or special loading arrangements. Although packages that comprise these miscellaneous shipments are normally prepared (packaged, labeled, marked, etc.) and shipment documentation completed by health physics and chemistry staffs, the carrier arrangements and package transfer are normally made by the station's warehouse/stores group. According the licensee, all warehouse/stores shipments that require radioactive material package labeling/marking are physically verified by an HP staff member to be properly labeled/marked, loaded and that shipment manifests are provided

to the carrier. This practice should prevent problems similar to those encountered at one of the licensee's other stations (Inspection Reports No. 50-295/89005(DRSS); 50-304/89005(DRSS)).

The radiation protection/health physics staff coordinates all radioactive material and radwaste shipments, performs package and vehicle surveys, verifies curie content calculations, determines adequacy of shipping papers and package marking/labeling. Station QA/QC reviews all outgoing shipments for compliance with selected procedures and DOT requirements.

According to the licensee, they have not experienced any significant radioactive material or radwaste shipment problems within the last two years. Other than a minor vehicle placarding issue, no problems have reportedly been identified at burial sites with the licensee's radwaste shipments. The licensee appears to continue to implement a good transportation program.

No violations or deviations were identified.

10. Audits and Appraisals (IP 83750, 84750, 84850)

The inspectors reviewed reports of radwaste and transportation program audits and surveillances conducted by the licensee including audits required by Technical Specifications. Also reviewed were management techniques used to implement the audit program, and experience concerning identification and correction of programmatic weaknesses.

In addition to inspections of each outgoing radioactive material/radwaste shipment, the licensee's QA department conducts annual audits of the station's radwaste and transportation program and at least quarterly surveillances of various radwaste activities. Technical Specification required audits of the PCP and implementing procedures for solidification of radwaste are normally included in the annual radwaste/transportation program review. QC audit requirements of 10 CFR 20.311(d) appear to be satisfied by the annual radwaste program audits and quarterly activity surveillances.

The last audit of the radwaste/transportation program was conducted on November 21-29, 1988. The purpose of the audit was to verify implementation of the station's QA program related to radwaste and included reviews of in-process (vendor) radwaste solidifications activities and 10 CFR 61 and DOT related documentation. No significant problems/concerns were identified in the audit. As previously documented (Inspection Reports No. 373/88009(DRSS); 374/88009(DRSS)), a similar QA audit of vendor solidification activities was conducted in early 1988.

The inspectors reviewed records of selected radwaste surveillances conducted in 1989 to date and discussed the surveillance program with several QA auditors. A surveillance in early 1989 consisted of observation of vendor solidification activities and review of waste classification calculations and solidification parameter data sheets; a similar surveillance was conducted recently. No significant problems

were identified during these surveillances. In 1989, the station developed a surveillance checklist for PCP/waste solidification process verification and initially used the checklist in the latter surveillance mentioned above. The licensee expects the checklist to be improved as more experience is gained in its use.

The inspectors reviewed the QA organization and experience of its members. Although auditor qualification requirements for conducting radwaste program audits are not extensive, two of the stations ten QA auditors have significant rad/chem experience beneficial to auditing radwaste activities and several others have station experience indirectly related to radwaste. Several QA auditors have attended a three-day vendor radwaste generator course (see Section 5). Considering the experience of the QA staff, it appears the station possesses the necessary cognizance to conduct meaningful radwaste program audits/ surveillances. Should auditors with adequate radwaste experience be unavailable in the future, a more extensive and formal training program may be necessary. The licensee's QA audit/surveillance program appears adequate to assess radwaste transportation and waste generator programs,

A station QA surveillance (QAS 1-88-28, March 29, 1988) of waste tank chemistry sampling identified one deficiency and one concern. The deficiency relates to the inability to obtain samples pursuant to procedure due to plugged sample lines; which reportedly is a recurring problem because the sample lines are poorly designed and prone to plugging. In November 1988, this deficiency was elevated to an open audit item but subsequently cancelled when a modification request was initiated to install sample line flush capability. The surveillance concern relates to undesirable (concentrator waste tank) sampling facilities that can potentially create sample and personnel contamination problems during sample collection. Reportedly, this concern existed for several years prior to being identified in the March 1988 surveillance and action on a facility modification approved in 1982 to correct this problem was not initiated. Inspector concerns with the timeliness of progress in correcting these apparent sampling problems was discussed in the exit meeting and will be reviewed further during a future inspection (Open Item 373/89014-01; 374/89014-01).

No violation or deviations were identified by the inspectors; however, one open item was identified.

11. Effluent Reports (IP 84750, 84723, 84724)

The inspectors selectively reviewed radiological effluent analysis results to determine accuracy of data reported in the Semiannual Radioactive Effluent Release Reports for 1987 and 1988. Technical Specification 6.6.A.4 requires, in part, that the Semiannual Radioactive Effluent Release Reports include a summary of liquid and gaseous effluents as outlined in Regulatory Guide 1.21, Revision 1, June 1974, with data summarized following the format of Appendix B thereof. Appendix B of this Regulatory Guide specifies, in part, that specific

data and information be summarized in the effluent report and include the following supplementary information:

- liquid and gaseous batch release information
- abnormal release information
- average energy of radionuclide mixtures in the effluent
- radiological impact on man (i.e., whole body and organ doses resulting from effluents)
- meteorological data

Although the licensee reportedly had no abnormal (unplanned or uncontrolled) releases in 1987 or 1988, the inspectors identified that the licensee failed to include other applicable supplemental information (as outlined above) in the effluent reports for at least those two years. Failure to include the required supplemental information in semiannual effluents reports for 1987 and 1988 is a violation of Technical Specification 6.6.A.4. However, pursuant to Section V.A of Appendix C to 10 CFR Part 2, a Notice of Violation will not be issued for this isolated Severity Level V violation because the licensee initiated appropriate corrective action (Action Item No. 373-130-89-00003 was issued on June 1, 1989) before the inspection ended. (Violation 373/89014-02; 374/89014-02).

One violation was identified; however, a Notice of Violation will not be issued.

12. Process and Effluent Control Instrumentation (IP 84750)

The inspectors reviewed records for gaseous and liquid effluent control instrumentation calibrations and surveillances and discussed monitor operability and calibration methodology with the licensee.

The inspectors selectively reviewed calibration, surveillance and alarm setpoint determination records and procedures for the liquid radwaste discharge monitor and calibrations records for the vent stack monitor. Calibration methods remain as previously described (Inspection Reports No. 373/87020(DRSS); No. 374/87020(DRSS)). The last calibration of the liquid discharge monitor was performed in October 1988 pursuant to Station Procedure No. LCP-820-13. No significant problems were noted.

The licensee has recently contracted the services of a vendor to evaluate the process/effluent monitor calibration program and procedures. The evaluation is contracted for six-months. To aid the evaluation, a portable gaseous effluent monitoring system mockup has been constructed.

No violations or deviations were identified by the inspectors.

13. Primary Coolant Radiochemistry (IP 84740)

Technical Specifications 3.4.5 requires that the specific activity of the primary coolant not exceed 0.2 microcurie of I-131 dose equivalent per gram except under certain limiting conditions of operation. The inspectors selectively reviewed the licensee's primary coolant radiochemistry results for the past year to determine compliance with

the Technical Specification requirements for the I-131 dose equivalent (DEI-131) concentration. The selective review and discussion with licensee personnel indicated that the DEI-131 concentration for the primary coolant remained less than the applicable Technical Specification limit throughout the review period for both units.

No violations or deviations were identified.

14. Air Cleaning Systems (IB 84750, 84724)

Technical Specifications (T/S) require filter testing of the Standby Gas Treatment System (two independent subsystems) as specified by T/S 3/4.6.5.3 and the Control Room and Auxiliary Electric Equipment Room Emergency Filtration System (two independent filter trains, including both emergency makeup and recirculation filtration) as specified by T/S 3/4.7.2. The inplace leakage test acceptance criterion specified by station procedures for both the DOP testing of HEPA filters and for freon testing of charcoal adsorbers is equal to or less than one percent penetration with the exception of the 30 percent penetration criterion for freon testing of the control room recirculation charcoal adsorbers. The laboratory test specified by station procedures for carbon sample removal efficiency for methyl iodide is equal to or greater than 90 percent. A selective review of surveillance test data for 1982-1988 showed that the surveillances for the above ventilation systems had met the test acceptance criteria established by station procedures.

Although the licensee passed the surveillance test requirements as specified by station procedures for all appropriate ventilation systems, the inspectors noted that the test criteria in several cases did not appear to meet the Technical Specification Surveillance Requirements and associated NRC regulatory positions in that:

- The T/S Surveillance Requirements for the testing of the Standby Gas Treatment System (SGTS) carbon adsorber samples (T/S 4.6.5.3.b.2 and 4.6.5.3.c) specifies a laboratory analysis in accordance with Regulatory Positions C.6.a and C.6.b of Regulatory Guide 1.52, Revision 2, March 1978. These regulatory positions specify that deep bed (four inches or greater) carbon adsorbers for which the assigned decontamination efficiency is 99% be tested with methyl iodide with an acceptance criterion of less than 0.175% penetration. The SGTS carbon bed depths are eight inches with assigned efficiency of 99% (Sections 6.5.2.2 and 15.3.2.1 and Table 15.1 of the NRC Safety Evaluation Report (NUREG-0519)); however Station Procedure No. LTS-400-16, Removal of Carbon Test Canisters from Filtration Systems Trains for Analysis, specifies an acceptance criterion of less than or equal to 10%.

- The T/S Surveillance Requirements for the testing of the control room emergency ventilation system (CREVS) carbon adsorber samples (T/S 4.7.2.b.2 and 4.7.2.c) specifies a laboratory analysis in accordance with the same regulatory positions specified in the SGTS T/S Surveillance Requirements. The regulatory positions specify that two-inch deep carbon adsorber beds for which the

assigned decontamination efficiency is 95% be tested with methyl iodide with an acceptance criterion of less than 1% penetration. The CREVS bed depths are two inches with an assigned efficiency of 95% (Section 6.5.2.1 of the SER); however, Station Procedure No. LTS-400-16 specifies an acceptance criterion of less than or equal to 10%.

The failure of the licensee to properly implement the T/S Surveillance Requirements into the procedural testing acceptance criteria for the SGTS and CREVS led to several inadvertent violations of the T/S Surveillance Requirements and failure to meet Limiting Condition for Operation Action Requirements (LCO ARs) (See Section 15).

Apparent violations are discussed in Section 15.

15. Inability of the SGTS and CREVS to Meet Surveillance Requirements

a. Event Summary

On May 24, 1989, during a review of the SGTS and CREVS T/S and the associated implementing procedures, an NRC inspector noted that the T/S Surveillance Requirements regarding laboratory testing of the carbon adsorbers with methyl iodide had apparently not been properly transferred by the licensee to the associated procedural testing acceptance criteria (see Section 14). Upon notification by the inspector of the apparent deficiencies, the licensee and the inspector reviewed testing data to ascertain any apparent past failures to meet T/S Surveillance Requirements and LCO ARs and to ascertain if the current carbon adsorbers were in compliance with SGTS and CREVS T/S.

The test data review indicated that all SGTS and CREVS carbon adsorber banks met the T/S Surveillance Requirements during the last methyl iodide laboratory acceptance tests. There were, however, five apparent failures to meet the T/S Surveillance Requirements for the carbon adsorbers and thus five periods of time when the SGTS and/or the CREVS were apparently unable to meet their design requirements and were in violation of T/S LCO Action Requirements. Specifically, the following filtration units apparently should have been declared out of service (OOS) between the following dates: Unit-1 SGTS (April 4 to July 1, 1985), makeup CREVS filter trains A and B (May 31, 1985 to November 25, 1986), recirculation CREVS filter train A (June 5, 1985 to December 3, 1986), and recirculation CREVS filter train B (June 5, 1985 to July 8, 1986). On May 26, 1989, the licensee issued Deviation Report (DVR) No. 01-1-89-050 to investigate this matter and institute corrective actions to prevent recurrence. Pursuant to 10 CFR 50.73(a)(2)(i), the licensee plans to issue LER No. 89-019-00.

b. Event Causation

The apparent root cause of this event is the erroneous interpretation of the SGTS and CREVS T/S Surveillance Requirements made in Action Item Request (AIR) No. 01-83-144, dated April 1,

1983. The AIR was issued to verify that the T/S Surveillance Requirements for HEPA and charcoal adsorber units meet the specifications of the Standard Technical Specification for ESF Cleanup Systems (Generic Letter No. 83-13). The AIR incorrectly used the stated FSAR required charcoal adsorber efficiencies of 90% for SGTS and CREVS in arriving at the conclusion that the required methyl iodide laboratory acceptance test criterion for all associated carbon adsorber banks was less than or equal to 10% penetration. Generic letter No. 83-13 specifically states that the carbon adsorber laboratory acceptance test criterion for methyl iodide penetration is less than 0.175% when a charcoal adsorber efficiency of 99% is assumed in the NRC Staff's SER or 1% when a charcoal adsorber efficiency of 95% is assumed in the SER. As stated in Section 14 above, the SER assumed efficiency for iodine removal by the SGTS and CREVS charcoal adsorbers is 99% and 95%, respectively.

c. Corrective Actions

(1) Initial actions were taken to assure that all SGTS and CREVS carbon adsorber banks met T/S Surveillance Requirements during the last methyl iodide laboratory acceptance tests.

(2) On May 26, 1989, the licensee issued DVR No. 01-1-89-050 to investigate this matter and institute corrective action (including procedural revisions) to prevent recurrence.

(3) Pursuant to 10 CFR 50.73(a)(2)(i), the licensee plans to issue LER No. 89-019-00.

d. Safety Significance

The lowest measured carbon adsorber methyl iodide efficiencies for the Unit-1 SGTS (99.62%), makeup CREVS filter trains A (98.538%) and B (95.540%), and recirculation CREVS filter trains A (98.000%) and B (90.804%) all are within the licensee's previous design basis accident (DBA) safety evaluation calculational envelop to assure 10 CFR 100 and 10 CFR 50, Appendix A, GDC-19 compliance. Although the potential existed for a combination of measured iodine removal efficiencies to fall outside the evaluated design basis envelop for the SGTS and CREVS according the licensee's analysis, such a condition did not appear to have occurred.

e. Quality Assurance Regulatory Requirements

Appendix B to 10 CFR 50 defines the required quality assurance criteria for nuclear power plants to assure safety operation, including quality assurance requirements for design, construction, and testing of systems that mitigate the consequences of postulated accidents that could cause undue risk to the health and safety of

the public. As used in this appendix, quality assurance comprises all actions necessary to provide adequate confidence that systems and components will perform satisfactorily in service.

The T/S Surveillance Requirement for the testing of the carbon adsorber samples for the SGTS (T/S 4.6.5.3.b.2 and 4.6.5.3.c) and for the CREVS (T/S 4.7.2.b.2 and 4.7.2.c) specifies a laboratory analysis in accordance Regulatory Positions C.6.a and C.6.b of Regulatory Guide 1.52, Revision 2, March 1978. These regulatory positions specify that the SGTS and CREVS carbon adsorbers be tested with methyl iodide with acceptance criteria of less than 0.175% and 1.0% penetration, respectively. Contrary to these instructions, the licensee's LaSalle Station Procedure No. LTS-400-16 specifies an acceptance criteria of 10% penetration for both the SGTS and CREVS carbon adsorbers. The failure to properly implement the T/S Surveillance Requirements into Procedure No. LTS-400-15 is an apparent violation of Criterion V, Instructions, Procedures, and Drawings, Appendix B to 10 CFR 50. (Violation 373/89014-03; 374/89014-03).

f. Technical Specification Limiting Conditions for Operation

As discussed in Subsection 15.a above, there were five identified failures to meet the T/S Surveillance Requirements for the carbon adsorbers and thus five periods of time when the SGTS and/or the CREVS were apparently unable to meet their design requirements and in violation of LCO Action Requirements. These violations were discussed at the exit meetings; however, they appear to meet the criteria of 10 CFR Part 2, Appendix C for self-identification and correction of problems; therefore, a Notice of Violation is not being issued.

g. Additional Regulatory Concerns

The inspectors' concerns with the licensee's testing of the SGTS and CREVS filters extend beyond the specifics of the methyl iodide acceptance test criteria discussed above. These additional regulatory concerns are discussed below.

- T/S 4.6.5.3.b.1 specifies that, under certain operation conditions, each SGTS subsystem satisfies the in-place testing acceptance criteria of Regulatory Positions C.5.c and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978. These regulatory positions and Generic Letter 83-13 specify the inplace leakage test acceptance criteria for the LaSalle SGTS subsystems for both the DOP testing of HEPA filters and for freon testing of charcoal adsorbers is less than 0.05% penetration. Contrary to the above requirements, T/S 4.6.5.3.e specifies that, after each complete or partial replacement of HEPA filter bank, the licensee verify that the HEPA filter banks remove greater than or equal to 99% of the DOP when they are tested inplace. Also, contrary to the above requirements,

T/S 4.6.5.3.f specifies that, after complete or partial replacement of a charcoal adsorber bank, the licensee verify that the charcoal adsorbers remove greater than or equal to 99% of a halogenated hydrocarbon refrigerant test gas (freon) when they are tested inplace.

The inconsistencies in T/S 4.6.5.3 regarding inplace testing of the SGTS filters are apparently due, in part, to the erroneous conclusion of AIR No. 01-83-144 that 1% penetration of freon and DOP was the appropriate interpretation of the T/S Surveillance Requirements. Because the Technical Specifications are required to be approved by the NRC, a lack of detailed scrutiny of this particular T/S may also have played a part in the apparently contradictory acceptance criteria. It appears that the licensee should appropriately amend T/S 4.6.5.3.e and 4.6.5.3.f and make similar revisions to implementing Station Procedure No. LTS-400-1, Standby Gas Treatment HEPA Filter Leak Test, and No. LTS-400-2, Standby Gas Treatment Charcoal Filter Leak Test. (A review of the DOP and freon SGTS inplace filter test data indicates that all tests demonstrated less than 0.05% penetration with the exception of DOP tests conducted on upstream and downstream HEPAs on both SGTS subsystems on May 24, 1982. According to licensee representatives, these tests were conducted by station personnel with instruments which could adequately detect a 1% penetration, but were too inaccurate to quantify with any certainty the amount of penetration in the region below 1%. Subsequent tests have been conducted satisfactorily by a testing vendor.)

- Although the CREVS T/S 4.7.2 inplace filter Surveillance Requirements have apparently been properly implemented in the acceptance criteria of the associated station procedures, it would be desirable for the licensee to exert best efforts to reduce the amount of penetration, as deemed appropriate. The inspectors noted that with the exception of the test conducted on Train A on November 7, 1983 (1.25%), the freon inplace test penetrations of the CREVS recirculation charcoal adsorber filters have remained within 1%. It would be a good practice for the licensee to revise Station Procedure No. LTS-400-14, Control Room HVAC Supply Filter, to state that best efforts should be exerted to maintain the penetration below 1%, even though the acceptance criterion is 30%. (It is also important for the licensee to note that a significant contributor to the measured penetration could be leakage through the normally-closed bypass damper.) The inspectors also noted that with the exception of the DOP penetration test conducted on the Train B upsteam HEPA on January 5, 1988 (0.1%), the DOP and freon test penetrations of the CREVS emergency makeup filtration system have remained within 0.05%. It would be a good practice for the licensee to revise Station Procedure No. LTS-400-12, Control Room Emergency Makeup Train HEPA Filter

Leak Test, and No. LTS-400-13, Control Room Emergency Makeup Train Charcoal Filter Leak Test, to state that best efforts should be exerted to maintain the penetration below 0.05%, even though the acceptance criterion is 1%.

- During the onsite inspection, the licensee was unable to verify that CREVS recirculation charcoal adsorbers meet the residence time criterion of 0.25 seconds per two inches of adsorbent bed specified by Regulatory Position C.3.i of Regulatory Guide 1.52, Revision 2, March 1978. If the residence time is less than that specified by the regulatory position, the licensee's testing vendor needs to be notified of the appropriate residence time to assure that proper test parameters are used during the charcoal adsorber penetration tests.

- The testing methodology specified by the licensee for the methyl iodide test is apparently RDT M16-1T or alternately ASTM D-3803-1979 (per Regulatory Guide 1.52, ANSI/ASME N509, and ANSI/ASME N510). These methodologies (testing protocols) have been shown to be inappropriate; the test protocol recommended to replace the licensee's current testing protocol is specified by NRC Information Notice No. 87-32. Currently, ASTM D-3803 is being revised to closely match the testing protocol specified by the Information Notice. Until the ASTM D-3803 is appropriately revised, it would be a good practice for the licensee to specify testing of charcoal adsorbers using the testing protocol specified in the Information Notice, as well as also continuing testing using the testing protocol required by Technical Specifications. It also appears appropriate for the licensee to consider replacing charcoal adsorbers which may pass the acceptance criteria for the T/S testing methodology, but fail the Information Notice specified testing acceptance criteria. After ASTM D-3803 has been revised to the NRC's satisfaction, it would seem appropriate for the licensee to amend the SGTS and CREVS T/S to specify the use of that testing standard and to make corresponding appropriate revisions to station procedures.

Pending resolution of the above regulatory concerns, this matter is considered an Unresolved Item. (Unresolved Item 373/89014-04; 374/89014-04)

One violation and one unresolved item were identified by the inspectors.

16. Exit Meeting (IP 30703)

The inspectors met with licensee representatives (denoted in Section 1) at the conclusion of the onsite inspection on June 2, 1989, and by telephone on June 16, 1989. 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

and processes reviewed by the inspectors during the inspection. The licensee did not identify any such documents or processes as proprietary. The following matters were discussed specifically by the inspectors:

a. Inspector concern regarding the lack of progress in correcting a previously NRC-identified station procedural deficiency. The licensee stated that corrective action would begin immediately and the procedural deficiency would be corrected within two weeks. (Section 3)

b. Inspector concern regarding the apparent lack of progress in correcting licensee-identified chemistry sampling system problems. (Section 10)

c. The apparent violation of T/S 6.6.A.4 (failure to report required information in the semiannual radioactive effluent release reports). (Section 11)

d. The apparent violation of Criterion V, Appendix B to 10 CFR 50 (failure to properly implement SGTS and CREVS carbon adsorber T/S Surveillance Requirements into procedural instructions). (Subsection 15.e)

e. The apparent violation of SGTS and CREVS LCO Action Requirements. (Subsection 15.f)

f. Inspector concerns regarding the SGTS and CREVS inplace and laboratory filter testing programs. (Subsection 15.g)

g. The inspectors stated that the licensee's 10 CFR 61 waste generation, classification, and characterization program appears to be particularly good. (Section 8)