

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-373/85017(DRP); 50-374/85017(DRP)

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 Site, Marseilles, IL

Inspection Conducted: May 14 through June 19, 1985

Inspectors: M. J. Jordan

J. Bjorgen

R. Kopriva

*A. Januska*  
A. Januska

Approved By: *N. Chrissotimos*  
N. Chrissotimos, Chief  
Reactor Projects Section 2C

7-18-85  
Date

Inspection Summary

Inspection on May 14 through June 19, 1985 (Reports No. 50-373/85017(DRP); 50-374/85017(DRP))

Areas Inspected: Routine, unannounced inspection conducted by resident inspectors of licensee actions on previous inspection findings; operational safety; monthly surveillance; monthly maintenance; unit trips; maintenance activities that affect operations; headquarters requests; Licensee Event Report Followups; enforcement actions; and meetings. The inspection involved a total of 210 inspector-hours onsite by four NRC inspectors including 12 hours onsite during off-shifts.

Results: Of the nine areas inspected, no deviations or violations were identified in seven areas; three violations were identified in the two remaining areas (inadequate administrative controls for the review and authorization of planned testing - Paragraph 7; failure to follow procedures - Paragraph 10; failure to have adequate control of design drawings - Paragraph 10).

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## DETAILS

### 1. Persons Contacted

#### Persons Contacted During Monthly Inspection Effort

G. J. Diederich, Manager, LaSalle Station  
\*R. D. Bishop, Services Superintendent  
D. Berkman, Assistant Superintendent, Technical Services  
C. E. Sargent, Production Superintendent  
R. M. Jeisy, Quality Assurance Supervisor  
\*R. Bare, Quality Assurance Inspector  
\*E. E. Boyd, Master Mechanic  
\*W. Huntington, Assistant Superintendent of Operations  
\*P. F. Manning, Technical Staff Supervisor  
F. Lawless, Rad/Chem Supervisor  
J. Lewis, Health Physics Coordinator-Operations  
R. Dwyer, Emergency Planning

The inspectors also talked with and interviewed members of the operations, maintenance, health physics, and instrument and control sections.

\*Denotes personnel attending exit interview held on June 19, 1985.

#### Attendees At Enforcement Conference on May 28, 1985

##### NRC

J. K. Keppler, Regional Administrator  
A. B. Davis, Deputy Regional Administrator  
C. E. Norelius, Director, Division of Reactor Projects (DRP)  
W. D. Shafer, Chief, DRP, Branch 2  
N. J. Chrissotimos, Chief, DRP, Section 2C  
B. W. Stapleton, Enforcement Coordinator  
Carl Paperiello, Chief, Emergency Preparedness and Radiological  
Protection Branch  
L. R. Greger, Chief, Facilities Radiation Protection Section  
N. C. Choules, Inspector, Quality Assurance Programs Section  
Frank Hawkins, Chief, Quality Assurance Programs Section  
M. J. Jordan, Senior Resident Inspector, LaSalle  
Bruce Berson, Regional Counsel

##### Commonwealth Edison Company

C. Reed, Vice President of Nuclear Operations  
D. P. Galle, Division Vice President and General Manager for  
Nuclear Stations  
L. O. DelGeorge, Assistant Vice President of Licensing & Engineering  
D. Farrar, Director of Nuclear Licensing  
G. J. Diederich, LaSalle Station Manager  
J. S. Abel, Station Nuclear Engineering Department

2. Licensee Action on Previous Inspection Findings

(Closed) Open Item (373/85012-07(DRP); 374/85012-07(DRP)): The inspector was concerned with the adequacy of the licensee's surveillance testing program in that repeated testing had failed to detect miswired Reactor Core Isolation Cooling (RCIC) room ambient temperature detectors. The inspector reviewed a selected sample of surveillance procedures based on the Technical Specifications required channel functional testing. The following procedures were reviewed:

LIS-NB-301	LIS-PC-306	LIS-RH-308
LIS-NB-302	LIS-PC-312	LIS-RH-309
LIS-NB-303	LIS-MS-301	LIS-RH-317
LIS-NB-304	LIS-MS-302	LIS-RI-304
LIS-NB-305	LIS-MS-303	LIS-PC-303
LIS-NB-309	LIS-MS-304	LIS-VR-301
LIS-NB-310	LIS-MS-305	LIS-VR-302
LIS-NB-311	LIS-MS-306	LIS-NB-317

The inspector noted that the majority of the procedures utilized direct sensor actuation to complete the functional test. Seven of the procedures, however, utilized alternate means of checking channel integrity. These seven procedures were discussed in detail with the Instrument Maintenance Department to confirm the adequacy of the testing. The licensee had previously identified a weakness in the testing program in that temperature detectors were not being heated directly to confirm channel integrity. This weakness has been corrected such that detectors are heated periodically when plant conditions permit. This corrective action identified the miswired RCIC room ambient temperature detectors. The inspector has no further concern in this area at this time.

No deviations or violations were identified.

3. Operational Safety Verification

The inspector observed control room operations, reviewed applicable logs and conducted discussions with control room operators during the inspection period. The inspector verified the operability of selected emergency systems, reviewed tagout records and verified proper return to service of affected components. Tours of Units 1 and 2 reactor buildings and turbine buildings were conducted to observe plant equipment conditions, including potential fire hazards, fluid leaks, and excessive vibrations and to verify that maintenance requests had been initiated for equipment in need of maintenance. The inspector, by observation and direct interview, verified that the physical security plan was being implemented in accordance with the station security plan.

The inspector observed plant housekeeping/cleanliness conditions and verified implementation of radiation protection controls.

During the month of June 1985, the inspector walked down the accessible portions of the following systems to verify operability:

- Unit 1 & 2 High Pressure Core Spray
- Unit 1 & 2 RHR Service Water Pump Rooms
- Unit 1 & 2 Diesel Generators
- Unit 1 & 2 Standby Gas Treatment and Standby  
Liquid Control Systems

On May 20, 1985, a Regional Inspector observed an individual improperly exiting the control room by not using the proper badge card reader. The station security personnel were notified and immediate corrective action was initiated. Subsequent investigation determined that an excessive number of personnel were not aware of the proper procedure for using badge card readers. The licensee plans to conduct refresher training to remind all personnel of the proper procedure. The Region III security inspectors were notified of this event and will evaluate the licensee's corrective action as part of the next routine safeguards inspection.

At 1:50 p.m. (CDT) on May 23, 1985, the Unit 2 "D" Automatic Depressurization System (ADS) valve opened for approximately 23 seconds. The unit was in cold shutdown at 140 degrees F so vessel water level and pressure were not affected. The licensee performed ground checks on the valve solenoids in an attempt to determine the cause of the valve opening. Due to ongoing maintenance activities, the cause of the valve opening could not be determined.

At 2:30 p.m. (CDT) on May 23, 1985, the Unit 2 Standby Gas Treatment (SBGT) Train was declared inoperable due to water in the charcoal absorbent. The licensee had been troubleshooting a ground in the Division II 125 volt DC battery. The ground had been located in the DC power supply to the SBGT deluge valve. In the process of deenergizing the circuit to make repairs, the deluge valve apparently opened. The licensee repaired the ground problem and operated the train to remove the moisture from the charcoal beds. Additional testing of the deluge valve was performed during the week of June 3, 1985.

At 1:25 p.m. (CDT) on May 24, 1985, the inspector found the Unit 1 Reactor Building outer interlocked door No. 394 open while leaving the Reactor Building through the inner door. This indicated that the interlock function of the two doors was inoperable. The Shift Engineer was notified and immediate corrective action was initiated.

At 12:30 a.m. (CDT) on May 27, 1985 with Unit 2 in cold shutdown, the licensee noticed water bubbling out of the ground outside of the plant Off Gas Building. The Unit 2 High Pressure Core Spray System (HPCS) was in full flow test at the time with a flow path from and to the Cycled Condensate (CY) storage tank. The licensee secured the HPCS system and isolated the suction line and full flow test line. A region based inspector was dispatched to the site on May 28, 1985 to review the results of samples analyzed by the licensee, to discuss proposed enhancement of the Environmental Monitoring Program and to make confirmatory measurements.

The initial groundwater sample collected by the licensee at the point where the liquid bubbled out of the ground was only analyzed for gamma activity. As no tritium analysis was performed on this sample, the concentration of tritium in the Unit 2 condensate tank was added to the gamma concentration to evaluate the radioactivity released to the cooling lake. The activity discharged to the lake was verified to be less than 85% of 10 CFR 20 Appendix B, limits for releases to an unrestricted area. No release beyond the owner controlled property occurred as lake blowdown had been secured for weeks prior to this occurrence. Subsequent samples were collected on a four hour interval by the licensee at the last available point prior to discharge into the cooling lake. A sample, collected at 3:15 p.m. on May 28, 1985, was split with the inspector. This, the last of the four hour interval samples, indicated only the presence of Mn-54 at 0.13% of the unrestricted area MPC in both the NRC and licensee results. The licensee has changed to one sample per 24 hour when runoff is available and will sample immediately after a rain and revert to four hour interval samples if an evaluation of sample results warrant.

The inspector traced the pathway from the lake to the release origin. Approximately 100 yards of an open drainage ditch running north-south from the origin was contaminated to  $10^4$  d/m/100 cm<sup>2</sup> and was roped off. The area has since been decontaminated by removing soil to the point where no radioactivity above background is detected.

The licensee subsequently initiated a comprehensive evaluation program for short and long term corrective action. The inspector and Region III personnel followed the licensee's actions and continue to do so at the close of this inspection period.

A summary of the licensee's evaluation program to date is as follows:

- a. Contamination Control: The licensee has initiated a three phase enhanced Environmental Monitoring Program to identify any migration of the released liquid. Phase 1, which increases the frequency of some samples, has been implemented. It includes weekly onsite deep well samples, weekly composites of 24 hour runoff samples when available, and monthly cooling lake water, sediment and fish samples. Sampling and analysis is performed by the licensee's environmental contractor. Results from the first set of samples analyzed by the licensee's environmental contractor have not been received. The licensee is also considering opening up observation wells used during construction for additional liquid monitoring. Phase 2 involves sinking boreholes along the broken pipe to sample soil and water near the break. Phase 3, which would be implemented after about one year, would involve an adjustment in the monitoring program depending on the evaluation of the problem. The enhanced Environmental Monitoring Program will be followed by regional based inspectors during the next site visit. This will be followed as an open item (373/85017-01(DRP); 374/85017-01(DRP)).

- b. Unit 1 and 2 Operation Effects: The licensee evaluated the impact of not having the HPCS full flow test line on unit operations. Based on a review of the Technical Specifications and the Updated Final Safety Analysis Report, it was determined that the full flow test line and the CY tank are not required for HPCS System operation. The system is designed under accident conditions to take a suction from the suppression pool and discharge to the reactor vessel. Full flow test capability remains available from the suppression pool to the suppression pool. The licensee also conducted leak testing on all other safety related pipes in the area of the leak to verify their integrity. The HPCS full flow test piping (14" diameter, ASTM-A-409 stainless steel grade 304 schedule 10S) was confirmed to be leaking on both units. All other pipes were confirmed to be intact. The system operational considerations were formalized in accordance with 10 CFR 50.59 with a temporary system change to align the HPCS System suction to the suppression pool.
- c. Failure Mode: Due to the depth of the pipe (approximately 28' for Unit 2 and 14' for Unit 1), an extensive analysis is underway to find a means of determining the failure mode of the piping. The surrounding landfill is primarily sand which makes excavation difficult. The Unit 2 piping is believed to be below the local water table. In addition, there are a significant number of pipes in the area such that excavation activity would lead to concerns of adequately supporting the exposed piping. The licensee is evaluating the possible use of a self propelled television camera to inspect the piping from the inside. In parallel, the licensee is coordinating with chemical grout contractors to develop a possible method of limited excavation. Action on this item will be tracked as open item (373/85017-02(DRP); 374/85017-02(DRP)).
- d. Replacement of the Piping: The licensee is developing a modification package for piping replacement. Preliminary results indicate that the licensee intends to pursue leaving the failed piping in place and rerouting the full flow test line. Completion of this plan requires coordination with the NRC and the State of Illinois regarding onsite storage (burial) of contaminated material. This action will be followed under open item (373/85017-03(DRP); 374/85017/03(DRP)).

The inspector observed portions of the control room activities during startup of Unit 1 on June 10, 1985. The inspector noted that all operations personnel performed as expected and that the restart progressed smoothly.

No deviations or violations were identified in this area.

#### 4. Monthly Surveillance Observation

The inspector observed the operation of the 2B diesel generator during the twenty four hour surveillance run (LTS 800-6). The inspector verified the use of technically adequate procedures and noted satisfactory operation of the diesel generator and its supporting systems.

The inspector also observed the leak rate testing of the 2A Residual Heat Removal Service Water (RHRSW) piping being conducted as a special test LST 85-73 as a follow-up to the failed High Pressure Core Spray (HPCS) full flow test piping. The licensee tested a majority of the safety related piping to confirm that the leaking pipe problem was isolated to the HPCS full flow test line. The inspector verified the use of technically adequate procedures, that the test gage was calibrated, and that the test results were meaningful.

The inspector observed the testing of the control room automatic trip alarms (LST 85-74) following installation of a degraded voltage trip modification on Division II bus 242Y. Modification M-1-2-82-12 was installed as required by Operating License Condition 2.C.(11). The inspector verified the use of technically adequate procedures and that test functions operated satisfactorily.

The inspector observed the weekly operational test of the "A" and "B" Emergency Diesel Fire Pumps (DFP) (LOS FP-W2). The inspector verified the use of technically adequate procedures and conformance to Technical Specifications. The inspector observed the operation of the fire pumps and noted satisfactory operation with the following exceptions:

The "A" DFP relief valve failed to fully open during the test. The inspector verified that a Work Request (No. 8743) had been initiated on May 9, 1985 to repair the valve. The valve was replaced and performance testing of the new valve was observed on May 23, 1985. The inspector noted that the flow test isolation valve (OFP-068A) for the "A" DFP was not locked closed. The chain device was properly attached and the lock was in place with the lock not completely closed. The equipment operator was notified and he verified the valve was in its proper position and closed the lock. This is considered to be an isolated case and no regulatory action is considered necessary. The inspector noted minor oil leaks on the "B" DFP motor and absorbent towels under the "A" DFP motor.

The inspector considered that housekeeping efforts in the DFP rooms could be improved to reduce potential fire hazards. Licensee maintenance and management personnel were notified.

On May 31, 1985, the inspector observed the leak testing performed on the Unit 1 High Pressure Core Spray (HPCS) full flow discharge pipe to the cycled condensate storage tank. This static head pressure test indicated a pressure drop from 16.3 psig to 6.3 psig in twenty nine minutes. The licensee calculated an estimated leakage rate of 10 gallons per minute. Accordingly, the piping was isolated while the licensee evaluates corrective action. The inspector verified the use of technically adequate procedures, proper radiological controls and that the test gage was calibrated.

No deviations or violations were identified.

## 5. Monthly Maintenance Observation

Following the flooding of the Lake Screen House on May 31, 1985, the inspector followed the licensee's maintenance activities. The inspector observed the clean-up activities and the disassembled operator for the 1B circulation water pump discharge valve. The inspector inspected the valve disc for damage and followed the licensee's investigation into the cause of the event and corrective actions. Refer to Paragraph 6 of this report for the results of this investigation.

The inspector also witnessed portions of the Unit 2 primary system leakage test (LOP-NB-01). The inspector verified the use of technically adequate procedures, compliance with Technical Specifications and the ASME Code, Section XI, and that the official test gage was calibrated. The inspector also walked down various portions of the piping under test including the piping inside the primary containment to observe for excessive leakage. No leakage was observed.

## 6. Unit Trips

On May 31, 1985, the licensee manually scrambled Unit 1 due to a decreasing vacuum in the condenser. The licensee determined that a 9 ft. diameter flexible expansion joint on the discharge of the 1B Circulation Water (CW) pump had ruptured and the Lake Screen House was flooded. All service water and circulation water pumps were lost on both units due to the flooding. An Unusual Event (UE) was declared at 10:30 p.m. (CDT). The Reactor Water Cleanup System (RWCU) isolated on high flow after the scram. The system was walked down and no leaks were found so the RWCU System was returned to service. The local Marseilles Fire Department responded with a pumper truck to assist in pumping the water out of the Lake Screen House. Unit 1 achieved Cold Shutdown at 7:40 a.m. on June 1, 1985 and the UE was terminated at 10:27 a.m. on June 1, 1985. Unit 2 had been in Cold Shutdown since February 28, 1985 for outage work.

The water was removed from the Lake Screen House on June 1, and the equipment was dried and tested during the week of June 3, 1985. Unit 1 was returned to service on June 10, 1985. The licensee's investigation into the cause of this event found that the mounting bolts on the limitorque operator for the 1B CW pump discharge valve failed most probably due to vibration and eventual fatigue failure. The discharge valve was thus free to move and closed due to system flow. The resulting water hammer caused the rubber expansion joint to fail. The licensee coordinated with the valve manufacturer (Pratt) to identify permanent corrective action. The valve manufacturer noted that the valve is normally designed to be installed with the shaft in the horizontal position to minimize pump/piping flow imbalances on the valve disc. The valves are installed vertically at LaSalle. Accordingly, the licensee intends to conduct a stress evaluation on the valve operator using strain gages to assure that it has been adequately designed for the application. The licensee is also evaluating some form of locking device for the operator mounting bolts to eliminate

loosening due to vibration. Upon disassembly of the operator, it was noted that the mechanical stops inside the operator had considerable wear. This indicates that the electrical limit switches may not have been adjusted properly. The licensee readjusted these switches prior to startup.

No deviations or violations were identified.

7. Maintenance Activities That Affect Operations

During this inspection period, the inspector noted several instances of maintenance activities that affected unit operations by unnecessarily actuating plant safety systems.

At 4:30 a.m. on May 10, 1985 while in Cold Shutdown, Unit 2 received a full scram signal. The "B" Reactor Protection System (RPS) channel had a 1/2 scram signal due to troubleshooting the "B" main steam line radiation monitor. The "A" channel tripped due to spurious spiking in the "C" Intermediate Range Monitor (IRM) cabling. The "C" IRM had been undergoing troubleshooting on the evening of May 9, 1985. In an effort to isolate the cause of the spiking, the Instrument Mechanics (IM's) had cross connected wiring between the "C" and "G" IRM's. During this process, the BYPASS switch had been moved from the "C" IRM to the "G". When the mechanics left the work area, they failed to adequately communicate to the unit operator which position the BYPASS switch should be in. It had been left with "G" in BYPASS and the unit operator was confused as to where it should have been. The resultant spiking in the unbypassed "C" IRM caused the scram. Performing work on both RPS channels at the same time is considered a failure to have measures to prevent inadvertent operation of systems and components.

On May 31, 1985, while attempting to test the main turbine intercept valves on Unit 2, a Group I isolation signal was received when the main turbine trip signal was reset. The unit Main Transformer was being backed from the Unit Auxiliary Transformer (UAT), which caused the 1800 RPM position to be selected on the turbine Electro-Hydraulic Control (EHC) panel. When the turbine trip was reset, the bypass logic for the isolation on low condenser vacuum was no longer bypassed for shutdown conditions. The main turbine stop valves opened in response to the 1800 RPM turbine speed signal and initiated the isolation.

On June 4, 1985, while performing Source Range and Intermediate Range Neutron Monitoring System tests (LIS-NR-401 and LIS-NR-02) on Unit 2, a scram signal was received when the Reactor Mode Switch was placed in the "Startup" position. Since the Control Rod Drive (CRD) system was shutdown at the time, the low CRD header pressure scram actuated.

On June 6, 1985, while performing Reactor Protection System (RPS) logic tests (LES-RP-02) on Unit 2, two scram signals were received following changes in the Reactor Mode Switch position:

- a. The mode switch was moved from "Shutdown" to "Startup" with a high water level in the Scram Discharge Volume (SDV). Instrument air to the system valves was out of service which had allowed water to collect in the SDV. Accordingly, the SDV high level scram actuated.
- b. The mode switch was moved from "Startup" to "Run" with the Main Steam Isolation Valves (MSIVs) closed. This actuated the "MSIVs Not Full Open" scram signal in the "Run" mode.

On June 7, 1985, while continuing with the Reactor Protection System logic testing (LES-RP-02), an additional scram signal was received while lifting leads during testing of the K-14 relays in the backup scram circuitry. This required a change to the procedure.

The inspector also noted on June 8, 1985 that planned testing of the main turbine and feedwater turbine high water level trip logic (LES-FW-01) would have caused another Group I isolation signal similar to the one previously described on May 31, 1985. The unit operator identified the potential problem while reviewing the procedure.

The preceding course of events indicates that the licensee's administrative controls for the review and authorization of planned testing are inadequate, both in the areas of original procedure development and approval as well as final onshift review and authorization.

Regulatory Guide 1.28, as committed to in the licensee's Quality Assurance Manual, invokes the requirements of ANSI N45.2 - 1977 for the control of activities affecting quality. ANSI N45.2, Section 7 requires that measures shall be established to assure that documents are reviewed for adequacy. Section 12 requires that test prerequisites include the condition of the item to be tested. Section 15 requires that measures shall be established to prevent inadvertent operation of systems and components.

Contrary to the above, as previously noted, maintenance and testing activities conducted on Unit 2 from May 10, 1985 through June 7, 1985 resulted in six inadvertent safety system actuations. This is considered to be a violation (374/85017-04(DRP)).

No other deviations or violations were identified.

#### 8. Headquarters Requests

NRC Headquarters requested the inspector, via E. L. Jordan memorandum of March 4, 1985 and C. E. Norelius memorandum of April 25, 1985, to conduct an evaluation of the licensee's response to General Electric Company's Service Information Letter (SIL) Number 402. This SIL was issued to the licensee with recommendations to prevent inadvertent introduction of cold nitrogen into the primary containment during inerting. This situation occurred at Hatch Unit 2 and caused a brittle fracture crack in the torus.

The inspector conducted an evaluation of the licensee's response to General Electric's SIL No. 402 with the following results:

a. Inerting System Design:

The licensee reviewed the design of the inerting system and has originated modification M-1-0-85-012 to install a low temperature alarm in the control room to warn operators of inerting system problems. At the time of this report, a firm schedule for completion of the modification was not available. The nitrogen injection lines connects to the 26" containment ventilation piping.

The inspector entered the Unit 2 drywell (the suppression chamber was not accessible for inspection) and considers no major equipment is near enough to the entrance of the vent to be affected by cold nitrogen. The inspector considers, however, that cold nitrogen could adversely affect the containment vent piping and isolation valves if the inerting system temperature controls were to fail.

b. Inerting System Operation:

The licensee reviewed the operating history of the inerting system and confirmed that all components have functioned properly. The system operating procedure, LOP-VQ-11, was changed to require periodic visual inspection of the piping during inerting to verify proper operation. The inspector reviewed the calibration, maintenance, and operating program for the inerting system. The inspector noted that the system temperature control valve does not have a periodic calibration or functional test. The frequency of calibration to be assigned to the planned low temperature alarm has not been established. The inspector also noted that no formal planned or preventive maintenance procedures have been established for the inerting system. The licensee considers visual inspection of the system during operation and the planned low temperature alarm to be adequate to assure proper system operation.

c. Drywell/Wetwell Bypass Leakage Testing:

Since LaSalle is a relatively new facility and has a Mark II containment, the licensee does not consider a special test of the vent system to be warranted. The licensee will, however, perform local and integrated leak rate tests of the containment during the first refueling outage as required by the Technical Specifications.

d. Nitrogen Injection Line Inspection:

Based on the system operating history, the licensee does not intend to conduct Ultrasonic Testing (UT) of injection line welds.

e. Containment Inspection:

The licensee intends to perform a visual inspection of the containment prior to the Integrated Leak Rate Test (ILRT) during the first refueling outage. Internal inspection of the vent header is not possible without removal of a protective screen that covers the pipe end inside the containment.

The above information will be utilized by the NRC Division of Emergency Preparedness and Engineering Response to assess the need for additional regulatory action.

No deviations or violations were identified.

9. Licensee Event Reports

Through direct observations, discussions with licensee personnel, and review of records, the following Licensee Event Reports (LERs) were reviewed to determine that reportability requirements were fulfilled, immediate corrective action was accomplished, and corrective action to prevent recurrence had been accomplished in accordance with Technical Specifications.

373/85029-00 - Reactor Scram Due to Instrument Valving Error. This event is addressed in Inspection Report 50-373/85009; 50-374/85009 and resulted in an item of noncompliance being issued to the licensee at that time.

373/85032-00 - Inboard Feedwater Check Valve Failed Local Leak Rate Testing (LLRT): The soft seated material in the valve was replaced and LLRT again after repaired successfully.

373/85033-00 - Missed Noble Gas Sample from Unit 1 Standby Gas Treatment (SBGT). Technical Specification 4.11.2.1.2 requires a sample to be taken daily whenever there is flow. A sample was taken before starting SBGT but not while flowing prior to shutdown. The continuous recorder for noble gases was used to calculate release. No increase in the release occurred during operation of the SBGT.

373/85035-00 - Main Turbine Trip and Scram From Spurious Bearing Vibration Signal.

373/85038-00 - Ammonia Detector Actuation Due to Equipment Failure.

373/85039-00 - Ammonia Detector Actuation. Equipment out of calibration.

373/85040-00 - Ammonia Detector Failure.

373/85041-00 - Spurious Auto Start of Emergency Makeup Fan.

373/85042-00 - Ammonia/Chlorine Detector Actuations.

374/84084-01 - Failure of RCIC Hi Temperature Isolation Switch. This revision was issued to identify the testing done to try to identify the erratic behavior of the Reactor Core Isolation Cooling room temperature switch during calibration testing.

374/85012-00 - Inadvertent Residual Heat Removal (RHR) Shutdown Cooling Isolation. Person valved out the wrong valve and caused the isolation of the Shutdown Cooling System.

374/85013-00 - Loss of Shutdown Cooling Due to Group 6 Division 2 Isolation. A defective procedure for logic testing resulted in the isolation. The procedure is being changed to prevent this isolation in the future.

374/85015-00 - Loss of Continuous Conductivity Indication. The continuous conductivity monitoring system was out of service for excess of Technical Specification limits of 31 days. The unit was in cold shutdown during this time and the licensee was taking conductivity samples every 4 hours. The system was out of service for outage work.

374/85016-00 - Missed Surveillance of 2E51-F091 RCIC Steam Supply to RHR Bypass. This was a procedural problem.

374/85017-00 - Group 6 Isolation. Isolation of Shutdown Cooling System caused by installation error and inadequate procedure. See noncompliance 373/85012-03B; 374/85012-03B.

374/85018-00 - Shutdown Cooling Isolation on Blown Fuse. This was a personnel error. Group 6 isolation caused by mechanic grounding electrical wire.

374/85019-00 - Primary Containment Group I Isolation Signal. This was a personnel error.

373/84075-01 - The closure of this LER has been transferred to regional based inspectors by memorandum from C. E. Norelius to R. L. Spessard dated March 28, 1985.

#### 10. Enforcement Action

On April 17, 1985 at 4:30 p.m. (CST) while performing the monthly functional tests on Unit 1, the licensee determined that two switches for the Automatic Depressurization System (ADS) permissive on low reactor vessel water level 1 (-129 inches of reactor water level) had been miswired. These two switches had been newly installed as part of the licensee's Environmental Qualification (EQ) switch replacement program. This made the trip system B for ADS initiation inoperable. At 7:40 p.m. (CST) the licensee declared an Alert emergency classification due to a shutdown required by the Technical Specifications. The Alert was terminated at 8:45 p.m. after one of the switches was rewired correctly and tested

satisfactorily. At 9:10 p.m. the system was returned to service after the second switch was wired correctly and tested. The system A was wired correctly and would have been able to initiate the ADS if reactor vessel water level 1 would have occurred. The miswiring was due to an error in the drawing received from corporate engineering.

Technical Specification 3.3.3 states, "With either ADS trip system A or B inoperable, restore the inoperable trip system to OPERABLE status within: ...7 days, provided that the HPCS and RCIC systems are OPERABLE...Otherwise be in at least HOT SHUTDOWN within the next 12 hours and reduce reactor steam dome pressure to less than or equal to 122 psig within the following 24 hours."

On April 7, 1985 the licensee returned Unit 1 to operation after the EQ modification with the switches not operable. The switches were found inoperable on April 17, 1985. Upon identification of the switches being inoperable on April 17, 1985, the licensee considered that 7 days remained to fix the switches. When the inspector was notified, he told the licensee that the 7 day clock had expired and they were in the action statement of Technical Specification 3.0.3. Some discussion transpired and the licensee agreed to take the action for 3.0.3. The Licensing Project Manager for LaSalle agreed with the inspector's interpretation when contacted on April 18, 1985.

On March 31, 1985 the licensee performed a calibration test after the modification was complete. A functional test on April 17, 1985 determined the switches were miswired. Discussions with the licensee determined that the calibration test on March 31, 1985 could not have been completed correctly, otherwise it would have identified the miswired switches.

Discussions of this event with the licensee identified that the onsite review of the drawings prior to installing the EQ switches had identified several errors. The drawings were sent back to the Station Nuclear Engineering Department (SNED) for revision. This review process, however, failed to identify the drawing error for wiring of the ADS initiation switches for trip System B on low reactor water level. Accordingly, the switches were wired incorrectly making them inoperable.

Technical Specification 6.2.A.7 states that detailed written procedures, "shall be prepared, approved and adhered to" for surveillance and testing requirements.

Contrary to the above, the procedure for performing the calibration of two level switches on March 31, 1985 was not "adhered to" which allowed returning the inoperable system B for ADS to service and exceeded the Action Statement for Technical Specification 3.3.3. This is considered to be a violation (373/85017-04(DRP)).

Title 10 to the Code of Federal Regulations (10 CFR), Part 50, Appendix B, Criterion III states, in part, "Measures shall be established for the identification and control of design interfaces, and for coordination among participating design organization." The licensee implemented this

requirement by Quality Assurance Manual Procedure Q.P. No. 3-51. Step C.6.C of Q.P. 3-51 requires the Station Nuclear Engineering Manager (SNEM) to "Prepare required detailed engineering design documents necessary drawings, plus establish quality requirements and other supporting documentation requirements."

Contrary to the above, adequate measures and quality requirements were not implemented to prevent the issuance of incorrect drawings to the site for two environmentally qualified switch replacements. Trip system B for ADS was wired incorrectly making it inoperable which resulted in the Technical Specification 3.3.3 Limiting Condition for Operation to be exceeded. This is considered to be a violation (373/84017-05(DRP)).

On May 28, 1985 an Enforcement Conference was held in Region III to discuss the above events and continued personnel errors by maintenance personnel at the site. The NRC presented the licensee with an overview of problems that had occurred at the site over the last ten months (Refer to Attachment 1). Region III management emphasized the concern that the event described above resulted in a Technical Specification Limiting Condition for Operation (LCO) action statement being exceeded.

The licensee acknowledged the data and then presented their actions being taken to improve maintenance at the site:

- a. Convey senior management expectations to all first line supervisors and personnel in the plant.
- b. Establish a Task Force to reduce unnecessary Engineered Safety Feature (ESF) actuations.
- c. Expand the Delian Program to involve selected maintenance management personnel.
- d. Interchange of information between Japanese utilities and Commonwealth Edison on operation and maintenance.
- e. Complete INPO Accreditation Program for maintenance.
- f. Develop a checklist to ensure appropriate testing is completed by maintenance prior to return to operations.
- g. Improve maintenance planning and scheduling by establishing a station daily/weekly work schedule.

Besides the issue on maintenance, some discussion was also conducted on the licensee's poor performance in health physics. Two (2) regional inspectors identified that personnel at the site were not properly following radiological procedures (see Inspection Report 373/85014, 374/85014). Personnel were noticed wearing dosimetry equipment improperly, improper frisking when leaving a controlled area, and loitering in a radiation area.

The meeting was concluded by Mr. Keppler stressing to the licensee that improvement in management involvement in the regulatory posture at LaSalle needed to be made, particularly in the areas of health physics and maintenance. Attendees at this meeting are listed in Paragraph 1.

11. Meetings

Representatives from the NRC Headquarters, Division of Nuclear Reactor Regulation (NRR) visited the site on May 15, 1985 to discuss the plant standard Technical Specifications. The purpose of this meeting was to allow the licensee the opportunity to identify weaknesses in the plant Technical Specifications. NRR has established a team to evaluate reported weaknesses with Technical Specifications. The results of this review will be utilized to determine possible means of improving plant Technical Specifications for all licensed power plants. The NRR team has visited several other plants and intends to complete the information gathering portion of the evaluation by September 1985.

12. Open Items

Open items are matters which have been discussed with the licensee, which will be reviewed further by the inspector, and which involve some action on the part of the NRC or licensee or both. Open items disclosed during the inspection are discussed in Paragraph 3.

13. Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) throughout the month and at the conclusion of the inspection period and summarized the scope and findings of the inspection activities. The licensee acknowledged these findings. The inspector also discussed the likely informational contents of the inspection report with regard to documents or processes reviewed by the inspector during the inspection. The licensee did not identify any such documents or processes as proprietary.

ATTACHMENT 1

LASALLE  
MAINTENANCE/SURVEILLANCE  
ACTIVITIES

CATEGORY 3  
PERFORMANCE RATING

PERSONNEL ERRORS BY MAINTENANCE DEPARTMENT  
CAUSING PROBLEMS WITH SAFETY-RELATED SYSTEMS

- 3 UNIT SCRAMS. (one during shutdown)
- 1 RECIRCULATION PUMP TRIP.
- 5 ESF ACTUATIONS.
  - Including the inadequate performance of the test procedure that would have prevented the LCO violations for inoperable ADS valves.
- 2 ERRORS.
  - Caused half scram.
  - Caused a system to be inoperable but was found during testing prior to return to service.

LER REPORTING/PERSONNEL  
OR PROCEDURE ERRORS  
IN THE  
MAINTENANCE DEPARTMENT

- Technical Specification required surveillance procedure not being issued since the startup of the plant.
- One month later the above surveillance was missed again because the procedure was not issued.
- Failure to follow procedures. Numerous examples.

MAINTENANCE OR MODIFICATION PROBLEMS  
OUTSIDE THE MAINTENANCE DEPARTMENT

- ° 2 UNIT SCRAMS.
  - ° One due to not updating drawings after modifications.
  - ° One due to operations not venting and purging instrument properly after modification.
- ° 2 ESF ACTUATIONS.
  - ° Operations clearing out-of-service after modification.
- ° 1 LCO VIOLATION.
  - ° Inadequate drawing provided to site for modification and onsite review did not pickup the error.

AREAS WHERE MAINTENANCE PRACTICES  
HAVE CAUSED PROBLEMS WITH OPERATIONS

IR 373/84-29;374/84-37

- Nov. 12, 1984      Unit 2 experienced a half scram when an EM grounded the A Reactor Protection System bus because he had used an AC volt meter in lieu of a DC volt meter.
- Dec. 7, 1984      Unit 1 experienced a RWCU isolation when an IM failed to follow procedure and verify that the isolation logic had been reset before removing two relay blocks. (Noncompliance issued).
- Nov. 15, 1984      B control room emergency ventilation make-up fan inadvertently initiated when an IM pulled the trip fuse before the center desk operator placed the make-up fan in pull-to-lock. (Noncompliance issued).

IR 373/84-26;374/84-33

- Oct. 1, 1984      Unit 2 Control Room Emergency Ventilation System activated when an IM returned from lunch and continued a surveillance on the ventilation system after the NSO had returned the system to normal during the lunch time.
- Sep. 21, 1984      Unit 1 scrambled when IM while performing a functional test on one Main Steam Line Low Pressure (MSLLP) switch placed his radio on the stanchion to another MSLLP switch and caused the switch to activate and caused a Group I isolation.

IR373/84-20;374/84-26

- Jul. 31, 1984      Unit 2 while shutdown received a scram signal on low reactor water when an IM while valving in a differential switch caused a pressure spike in the instrument line.

IR373/84-17;374/84-22

- Jul. 9, 1984      Unit 2 experienced a reactor scram from 67% power on high pressure. The high pressure was the result of an IM troubleshooting a problem in the recirculation flow controller and initiated an unintentional grounding causing the bypass valve to open and close.
- Aug. 25, 1984      Unit 1 experienced a power reduction from 100% power to approximately 60% power due to a tripped recirculation pump. IM performing surveillance and isolated an ATWS switch and performed testing on another switch.

IR373/84-33;374/84-40

Feb. 8, 1985 Unit 1 scrambled on low reactor level because of loss of feedwater pumps on low suction pressure. The feedwater pumps were tripped because the drawings in the control room were not kept up to date after a modification. Operations had installed a jumper correctly according to the drawings available in the control room; however, because of the modification and the drawing not being updated, the jumper caused the feedwater pumps to trip.

IR 373/85-009:374/85-009

Mar. 21, 1985 Unit 1 scrambled from 100% power due to inadequate procedure not requiring the operator to vent and purge an instrument prior to returning it to service. (Noncompliance issued).

Mar. 31, 1985 IM incorrectly valved out the switch for high flow isolation for the Shutdown Cooling System (SDCS) for Unit 2 causing a SDCS isolation while the unit was on the SD cooling system. (Noncompliance issued).

Mar. 27, 1985 On Unit 1 a contractor was performing a hydrostatic test and ran pressure above the set value required by the work package. Because of valve leakage, 3 ADS valves lifted, the reactor pressure dropped 75 lbs., and level dropped below the scram setpoint. If correct pressure would not have been exceeded the transient would not have happened. (Noncompliance issued).

Air supply to one set of air start motors was incorrectly connected by a mechanical maintenance personnel. This was found out by testing before returning the system to service so no noncompliance was issued.

Present IR 373/85-012:374/85-012

Apr. 12, 1985 Unit 2 Group 1 isolation and scram after removal of a relay block on the channel A while channel B was tripped due to a miswired EQ mod switch. The return to service was not adequate in that it should have checked the continuity of the circuit before removal of the relay block to prevent the A channel trip and isolation. (Noncompliance to be issued). (Operation Department caused problem).

Apr. 13, 1985 Unit 2, while shutdown, an OOS removed a jumper and caused an isolation of the SDCS. This could have been prevented if a relay block would have been installed, the jumper removed, then continuity checked, then remove the relay block. Thus, an inadequate OOS. (Noncompliance to be issued). (Operation Department caused problem).

Apr. 13, 1985

EM worked on loose electrical lug in the logic circuit for the SDCS that was found during the clearing of the OOS above causing a ground and a isolation of the SDCS. The IM had not told the operating shift, and did not have a WR to do the work. (Inspector still investigating this event).