U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report Nos. 50-373/90016(DRP); 50-374/90017(DRP)

Docket Nos. 50-373; 50-374 License Nos. NPF-11; NPF-18

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

Facility Name: LaSalle County Station, Units 1 and 2

Inspection At: LaSalle Site, Marseilles, Illinois

Inspection Conducted: July 15 through September 4, 1990

Inspectors: T. Tongue
R. Kopriva
D. Jones
C. Phillips

Approved By: J. M. Hinds, Jr., Chief
Reactor Projects Section 1A

SEP 12 1990
Date

Inspection Summary

Inspection from July 15 through September 4, 1990 (Report Nos. 50-373/90016 (DRP); 50-374/90017 (DRP)).
Areas Inspected: Routine, unannounced safety inspection by the resident inspectors of licensee action on previously identified items; licensee event reports; regional requests; operational safety verification; monthly maintenance; monthly surveillance; training effectiveness; report review; events; quality assurance program implementation; evaluation of licensee self-assessment capability; and site visits by NRC staff.
Results: Of the twelve areas inspected, no violations or deviations were identified.

Plant Operations:

During the inspection period (July 15, 1990 through September 4, 1990), Units 1 and 2 operated at or near full power with only minor occurrences. On about August 1, 1990, the licensee installed and placed new Prime 1 computers into service. Initial problems resulted in a number of computer trips that were corrected by circuit board replacements. Two of the trips met the two nour reporting criteria for loss of safety assessment. The licensee made ENS notifications (Section 10).

Maintenance/Surveillance:

Two occurrences of Static-O-Ring (SOR) dp switch diaphragm failures were encountered. The failed SORs were identified through routine surveillance testing. The failed SORs were replaced with calibrated units from onsite. Appropriate NRC notifications were made (Section 10).

Safety Assessment/Quality Verification

Completed inspection identified a number of improving trends, i.e. personnel errors, unplanned ESF actuations, and scrams, etc. No adverse indications were identified. (Section 11)

DETAILS

1. Persons Contacted

*G. J. Diederich, Manager, LaSalle Station
*W. R. Huntington, Technical Superintendent
J. C. Renwick, Production Superintendent
D. S. Berkman, Assistant Superintendent, Work Planning
J. V. Schmeltz, Assistant Superintendent, Operations
*J. Walkington, Services Director
T. A. Hammerich, Regulatory Assurance Supervisor
*W. E. Sheldon, Assistant Superintendent, Maintenance
W. Betourne, Quality Assurance Supervisor
*P. Wisniewski, Regulatory Assurance
*M. Hayse, Nuclear Quality Programs Inspector
J. Roman, Resident Engineer, Illinois Department of Nuclear Safety

*Denotes those attending the exit interview conducted on September 4, 1990, and at other times throughout the inspection period.

The inspectors also talked with and interviewed several other licensee employees, including members of the technical and engineering staffs, reactor and auxiliary operators, shift engineers and foremen, and electrical, mechanical and instrument maintenance personnel, and contract security personnel.

2. Licensee Action on Previously Identified Items (92701)

(Open) Unresolved Item (373/90014-02(DRP); 374/90015-02(DRP)): On August 22, 1990, the Senior Resident Inspector and Region III Core Physics Specialist monitored a reenactment of the unanticipated cooldown rate during planned reactor shutdown occurrence of June 23, 1990, on the LaSalle simulator at the Production Training Center (PTC) in Essex, Illinois. The inspectors verified that the plant conditions were acceptably reproduced within the capability of the simulator and that they were acceptably close to the actual condition of the plant during the occurrence. The unexpected cooldown and power reversal scenario was run twice with the inspectors monitoring the behavior of the reactor. It was found that in both runs that the response of the reactor core power and associated parameters were sufficiently slow such that plant operators had time to analyze and evaluate the conditions for rational decision making to avert an unnecessary trip (transient). This item remains open pending evaluation of the licensee's response to questions documented in the unresolved item.

No violations or deviations were identified.

3. Licensee Event Reports Followup (92700)

Through direct observations, discussions with licensee personnel, and review of records, the following event reports 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.

a. The following reports of nonroutine events were reviewed by the inspectors. Based on this review it was determined that the events were of minor safety significance, did not represent program deficiencies, were properly reported, and were properly compensated for. These reports are closed:

373/90010-00 - Reactor Scram During Surveillance Testing Due to Mounting Bolts for Turbine Stop Valve Open Limit Switch Vibrating Loose

373/90007-00 - Reactor Core Isolation Cooling Trip on Mechanical Overspeed During Surveillance Testing

374/90008-01 - Engineered Safety Feature Actuation of the Control Room B Emergency Ventilation Makeup Fan Due to a Procedural Deficiency

374/89007-01 - Loss of the System Auxiliary Transformer Caused by a Fire Protection Deluge of the Transformer Due to a Short in the Deluge Manual Pull Station Switch

In addition to the foregoing, the inspector reviewed the licensee's Deviation Reports (DVRs) generated during the inspection period. This was done in an effort to monitor the conditions related to plant or personnel performance, potential trends, etc. DVRs were also reviewed to ensure that they were generated appropriately and dispositioned in a manner consistent with the applicable procedures and the QA manual.

No violations or deviations were identified in this area.

4. Regional Request (92701)

a. Control Rod Drive Scram Time Testing

On July 19, 1990, the resident inspectors received a request from the NRC Region III office to review Control Rod Drive (CRD) scram time testing at the LaSalle plant. The Region III office had received information that a Region I plant had not incorporated the vendor's (General Electric) recommendations into their CRD scram timing surveillance procedure. In accordance with the vendor's recommendations, the licensees were to perform single control rod scram timing with the CRD pumps isolated from that particular CRD.

The resident inspectors reviewed the LaSalle Station surveillance procedure LIS-1100-4, Scram Insertion Times, and held discussions with the technical staff system engineer. The result of these reviews indicates that LaSalle is performing the CRD scram time testing in accordance with the vendor's recommendations.

b. Unusually Heavy Rainfall Followup

On August 10, 1990, Region III, in followup to recent heavy rainfall in Northern Illinois, requested information regarding the affect on local river levels and how it impacts plant operations. At LaSalle it was verified that the Illinois River (LaSalle makeup source) is monitored visually on a daily basis and that the LaSalle lake level is recorded daily. The FSAR documents that the station (710 feet elevation) is essentially free of flooding from the Illinois River (530 feet elevation). In summary, the heavy rainfall had no impact on plant operations.

c. Operability of Systems Removed for Preventive Maintenance

By memo dated July 20, 1990, Region III requested information related to the licensee entering a Technical Specification (TS) Limiting Condition for Operation (LCO) Action Statement to perform preventive maintenance on safety-related equipment. The inspector interviewed several experienced licensee personnel in various positions and management levels concerning this practice. The interviews verified the inspector's observations that the licensee does not enter into a TS LCO action statement intentionally to perform preventive maintenance.

The personnel interviewed indicated that if a TS LCO cannot be met, as a result of unforeseen problems with periodical maintenance, then they would be forced to enter and meet the associated action statement. However, no one could recall exceeding an LCO and entering the action statement in the past 3-5 years for periodical maintenance at LaSalle. The personnel also noted and the inspector has observed that if the LCO is of insufficient time to complete the work that they will conduct preventative maintenance or install modifications in segments. This is where a portion of the work is completed, then the LCO is exited only after an acceptable operability test. The LCO is then re-entered to complete or continue the work. This practice prevents the entering of the TS LCO Action Statement.

No violations or deviations were identified.

5. Operational Safety Verification (71707)

During the inspection period, the inspectors verified daily, and randomly during back shift and on weekends, that the facility was being operated in conformance with the licenses and regulatory requirements and that the licensee's management control system was effectively carrying out its responsibilities for safe operation. This was done on a sampling basis through routine direct observation of activities and equipment, tours of the facility, interviews and discussions with licensee personnel, independent verification of safety system status and limiting conditions for operation action requirements (LCOs), corrective action, and review of facility records.

On a sampling basis the inspectors daily verified proper control room staffing and access, operator behavior, and coordination of plant activities with ongoing control room operations; verified operator

adherence with the latest revisions of procedures for ongoing activities; verified operation as required by Technical Specifications (TS), including compliance with LCOs, with emphasis on engineered safety features (ESF) and ESF electrical alignment and valve positions; monitored instrumentation recorder traces and duplicate channels for abnormalities; verified status of various lit annunciators for operator understanding, off-normal condition, and corrective actions being taken; examined nuclear instrumentation (NI) and other protection channels for proper operability; reviewed radiation monitors and stack monitors for abnormal conditions; verified that onsite and offsite power was available as required; observed the frequency of plant/control room visits by the station manager, superintendents, assistant superintendents, and other managers; and observed the Safety Parameter Display System (SPDS) for operability.

During tours of accessible areas of the plant, the inspectors made note of general plant/equipment conditions, including control of activities in progress (maintenance/surveillance), observation of shift turnovers, general safety items, etc. The specific areas observed were:

a. Engineered Safety Features (ESF) Systems

Accessible portions of ESF systems and components were inspected to verify: valve position for proper flow path; proper alignment of power supply breakers or fuses (if visible) for proper actuation on an initiating signal; proper removal of power from components if required by TS or FSAR; and the operability of support systems essential to system actuation or performance through observation of instrumentation and/or proper valve alignment. The inspectors also visually inspected components for leakage, proper lubrication, cooling water supply, etc.

b. Radiation Protection Controls

The inspectors verified that workers were following health physics procedures for dosimetry, protective clothing, frisking, posting, etc., and randomly examined radiation protection instrumentation for use, operability, and calibration.

c. Security

Each week during routine activities or tours, the inspector monitored the licensee's security program to ensure that observed actions were being implemented according to their approved security plan. The inspector noted that persons within the protected area displayed proper photo-identification badges and those individuals requiring escorts were properly escorted. The inspector also verified that checked vital areas were locked and alarmed. Additionally, the inspector also verified that observed personnel and packages entering the protected area were searched by appropriate equipment or by hand.

On August 17, 1990, a security guard contacted the resident inspectors regarding his recent suspension for apparent color

blindness identified during a routine physical exam. He stated that his case was marginal and he was found to be acceptable about eleven years ago for the same situation. At that time, he had been returned to normal duty. This was discussed with the licensee's security management personnel and with a Region III security specialist. They concluded that the pass/fail criteria had changed and the licensee administered a special color test and found that the guard's condition was still unacceptable. This was relayed to the guard by the licensee on about August 18, 1990 and he was suspended permanently. No further communications have been received on this matter.

d. Housekeeping and Plant Cleanliness

The inspectors monitored the status of housekeeping and plant cleanliness for fire protection, protection of safety-related equipment from intrusion of foreign matter and general protection of equipment from hazards.

The inspectors also monitored various records, such as tagouts, jumpers, shiftly logs and surveillances, daily orders, maintenance items, various chemistry and radiological sampling and analysis, third party review results, overtime records, QA and/or QC audit results and postings required per 10 CFR 19.11.

No violations or deviations were identified in this area.

6. Monthly Maintenance Observation (62703)

Station maintenance activities affecting the safety-related systems and components listed below were observed/reviewed to ascertain that they were conducted in accordance with approved procedures, regulatory guides and industry codes or standards and in conformance with Technical Specifications.

The following items were considered during this review: the Limiting Conditions for Operation were met while components or systems were removed from service; approvals were obtained prior to initiating the work; activities were accomplished using approved procedures and were inspected as applicable; functional testing and/or calibrations were performed prior to returning components or systems to service; quality control records were maintained; activities were accomplished by qualified personnel; parts and materials used were properly certified; radiological controls were implemented; and, fire prevention controls were implemented. Work requests were reviewed to determine status of outstanding jobs and to assure that priority is assigned to safety-related equipment maintenance which may affect system performance.

The following maintenance activities were observed and reviewed:

Unit 0

- Moisture Removal from Sample Lines to the Standby Gas Treatment-Wide Range Gas Monitor

- Excavation Work Underneath the Security Fence and Associated Equipment

Unit 1

- 250 Volt Battery Electrical Ground Elimination

- Hydrolazing of the 1B Reactor Building Closed Cooling Water (RBCCW) Heat Exchanger

Unit 2

- Attempt to Reduce Biofouling in the Service Water Section of the Main Generator Hydrogen Cooler

The inspectors monitored the licensee's work in progress and verified that it was being performed in accordance with proper procedures, and approved work packages, that applicable drawing updates were made and/or planned, and that operator training was conducted in a reasonable period of time.

No violations or deviations were identified.

7. Monthly Surveillance Observation (61726)

The inspectors observed surveillance testing required by Technical Specifications during the inspection period and verified that testing was performed in accordance with adequate procedures, that test instrumentation was calibrated, that Limiting Conditions for Operation were met, that removal and restoration of the affected components were accomplished, that results conformed with Technical Specifications and procedure requirements and were reviewed by personnel other than the individual directing the test, and that any deficiencies identified during the testing were properly reviewed and resolved by appropriate management personnel.

The inspectors witnessed portions of the following test activities:

Unit 1

- LIS-RI-301 Unit 1 Steam Line High Flow Reactor Core Isolation Cooling (RCIC) Isolation Function Test

- LIS-NB-304 Unit 1 Reactor Vessel LoLo Water Level RCIC Initiation

- LIS-RI-303 Unit 1 RCIC Pipe Routing Area High Temperature and High Vent Differential Temperature Isolation Functional Test

Unit 2

- LOS-VG-M1 Standby Gas Treatment System. Operability Test and Inservice Test for 2VG001 and 2VG003
- LIS-NB-406B Unit 2 Reactor Level Low Water Level 3 ADS Permissive Instrument Channel B Monthly Functional Test
- LIS-NB-401B Unit 2 Reactor Vessel Low Water Level 3 Scram Trip Logic B1 and B2 and RHR (Shutdown Cooling Mode) Isolation Monthly Functional Test
- LLP-90-050 Unit 2 Main Steam Isolation Valve Testing

No violations or deviations were identified.

8. Training Effectiveness (41400, 41701)

The effectiveness of training programs for licensed and non-licensed personnel was reviewed by the inspectors during the witnessing of the licensee's performance of routine surveillance, maintenance, and operational activities and during the review of the licensee's response to events which occurred during the inspection period. Personnel appeared to be knowledgeable of the tasks being performed, and nothing was observed which indicated any ineffectiveness of training.

No violations or deviations were identified.

9. Report Review (90713 and 92701)

During the inspection period, the inspector reviewed the licensee's Monthly Performance Report for July 1990. The inspector confirmed that the information provided met the requirements of Technical Specification 6.6.A.5 and Regulatory Guide 1.16.

The inspector also reviewed the following licensee report:

. LaSalle County Station Monthly Plant Status Report for July 1990.

No violations or deviations were identified.

10. Events (93702)

a. Prime Computer Transfer

On August 1, 1990, the licensee transferred the Prime computer function for plant process parameters to a new upgraded Prime computer. Following the transfer, a number of occurrences of the new Prime computer tripping were experienced. Two trips occurred on August 6 and 7, 1990, which met the two hour NRC notification

criteria for loss of safety assessment. These resulted in appropriate ENS phone notifications to the NRC and the resident inspectors. Following the replacement of faulty electronic circuit cards on the new computers, the tripping occurrences appear to be corrected.

b. ENS Phone Difficulties

On August 1, 1990 at 8:18 a.m. (CDT), the licensee commenced a planned outage for the removal of the Prime 1 computer from service. In order to replace it with a new, improved model. An Emergency Notification System (ENS) call was made at 8:30 a.m. for the loss of emergency assessment capability. The computer outage was scheduled to last less than 24 hours.

When the licensee made the ENS call, they noted difficulties with the phone line. The connection was so poor that notification was completed via commercial telephone. The NRC duty officer in Bethesda investigated the problem. An ENS phone line check was completed at 9:40 a.m. by NRC Headquarters which verified the phone system was working properly.

At 10:00 p.m. on August 1, 1990, the licensee made a courtesy ENS call with an update on the computer outage; the new Prime 1 computer had been installed and was operable.

c. Static O Ring (SOR) Differential Pressure (DP) Switch Diaphragm Failures

On August 1, 1990 at 8:00 p.m. (CDT), the licensee was performing instrument surveillance LIS-RI-301, Unit 1 Steam Line High Flow Reactor Core Isolation Cooling (RCIC) Isolation Functional Test.

During the surveillance, it was discovered that the RCIC high steam line flow differential pressure (dp) switch Static O Ring (SOR) 1E51-N013BA had a ruptured diaphragm. This rendered the switch inoperable and in accordance with Technical Specification 3.7.3, the RCIC system was also declared inoperable. An Emergency Notification System (ENS) call was made at 9:04 p.m. to report the loss of a safety system (RCIC). Work Request L01646 was written to replace the SOR switch and on August 3, 1990, the replacement switch was installed and tested satisfactorily.

On August 23, 1990, the licensee identified that an SOR dp switch (No. 1B21-N037CB) for reactor vessel level had a failed diaphragm. This was identified while conducting surveillance LIS-NB-304, RCIC LoLo Level Initiation, LPCS/RHR LoLoLo Level Initiation, ADS Permissive Functional Test. The affected SOR is one of four SORs and provides RCIC initiation on Low Low reactor vessel level (-50 inches indication). The four SORs were undergoing a monthly functional test which verifies that the trip will occur and the integrity of the SOR dp switch diaphragm. The other three SOR dp

switches passed the test. Upon identification of the failed dp switch, the licensee appropriately declared RCIC inoperable, placed the RCIC system in a 14 day Limiting Condition for Operation (LCO) in accordance with Technical Specification 3.3.5 and made an ENS notification to the NRC. The licensee located a replacement SOR dp switch on site, verified its calibration and replaced the failed SOR dp switch. This exchange was completed and the Technical Specification LCO was exited on August 23, 1990. The resident inspectors will review the associated licensee event report upon its release in accordance with Inspection Procedure 92700.

No violations or deviations were identified.

11. Quality Assurance (QA) Program Implementation (35502)

The inspector performed an evaluation of the effectiveness of the licensee's implementation of its Quality Assurance (QA) program. The overall effectiveness of the licensee's QA program implementation is directly related to the licensee's performance in specific functional disciplines, which is reflected in its operating history. Therefore, operating history is an indication of the effectiveness of the implementation of the QA program. The evaluation was conducted by review of the following:

1. NRC inspection reports for the past twelve months

2. SALP reports for the past two years (SALP 7 and SALP 8)

3. Outstanding regional open items list (OIL)

4. Licensee corrective actions for NRC inspection findings

5. Licensee event reports for the past twelve months

In addition to the above review, the facility's recent operating history and the collective knowledge of the resident and region based inspection staffs was also used in the evaluation process.

LaSalle's operating history has shown significant improvements in the number of ESF actuations, and LER's attributable to personnel error:

ESF Actuations		Personnel Error LER's
1984	120	70
1985	72	46
1986	31	18
1987	28	12
1988	17	9
1989	21	8
1990 (June)	13	3

The number of LER's has also shown a decline:

	LER's
1986	62
1987	61
1988	46
1989	47
1990 (June)	18

No negative performance trends were noted, and based upon the review the inspector has concluded that the QA Program at LaSalle is effectively implemented.

No violations or deviations were identified.

12. Evaluation of Licensee Self-Assessment Capability (40500)

The inspector performed an evaluation of the licensee's self-assessment capability. The evaluation involved review of the licensee's QA audits, team assessments, and Onsite Nuclear Safety Group (ONSG).

The ONSG functions as a NUREG 0737 Independent Safety Engineering Group (ISEG). The ONSG reviews and evaluates station safety related operating events and observes operating and maintenance activities in the station. The ONSG reports to the corporate ONSG superintendent. The inspector reviewed the experience level of the ONSG members through interviews and a survey of resumes, and determined that the members are qualified to perform meaningful independent assessments and provide valid recommendations to senior management. The members understood the scope of authority and responsibilities associated with their independent reviews.

The inspector reviewed the ONSG Monthly Reports from June 1989 through June 1990, and found that thorough, in-depth reviews of various functional areas were performed and valid recommendations proposed. The status of recommendations is tracked as an appendix to the Monthly Report and by the licensee's Nuclear Tracking System (NTS). The inspector also reviewed the Third Quarter 1990 ONSG Administrator's Meeting Notes and Agenda, and found that representatives from each site group meet on a quarterly basis to discuss items of interest. The inspector's review of offsite audit reports included the following:

1. LaSalle County Offsite Audit Report Number 01-90-I, dated July 19, 1990, which reviewed activities and documentation associated with maintenance, operations, radiation protection, radwaste, chemistry, security, emergency preparedness, first aid and QA/corrective action.

2. LaSalle County Offsite Audit Report Number 01-90-III, dated April 9, 1990, which reviewed activities and documentation associated with

the stations' controls of non-CECo personnel performing quality related activities in the operations, maintenance, technical support, quality control, training, ENC and site architect engineering areas. The audit also reviewed the station's commercial grade dedication program and its fire protection program.

The inspector also reviewed team assessments which are performed by the corporate Performance Assessment Department. The Performance Assessment Department is responsible for conducting routine performance assessments in the chemistry, emergency preparedness, engineering, maintenance, operations, radiation protection/ALARA, radwaste, technical support, and training areas.

The inspector reviewed the following assessment reports:

1. LaSalle Station Radiation Protection Assessment, January 29-February 2, 1990.

2. Response to 1990 Radiation Protection Performance Assessment Report dated February 27, 1990.

3. LaSalle Operations Assessment, March 20-23, 1989.

4. Response to the March 1989 LaSalle Operating Performance Assessment Report dated May 31, 1989.

The inspector also attended an exit meeting of the LaSalle Industrial Safety Assist Visit Team.

Based upon this evaluation, the licensee's capability to perform self-assessments and followup on the results appears to be effective in the identification and prevention of problems.

No violations or deviations were identified.

13. Site Visits by NRC Staff (30702)

a. On August 17, 1990, Mr. W. D. Shafer, Chief, Division of Reactor Projects, Branch 1, was on site for a planned routine visit. The purpose of the visit was to meet with the resident inspectors to discuss details and procedures associated with the forthcoming signing and implementation of the Memorandum of Understanding (MOU) with the Illinois Department of Nuclear Safety (IDNS) and the NRC interface with the IDNS site resident engineer. The visit was also an opportunity to meet with the licensee to discuss the results of the recent Diagnostic Evaluation Team (DET) inspection at Zion Station and the status of the licensee response to questions related to the unanticipated cooldown rate during planned reactor shutdown occurrence of June 23, 1990 discussed as an unresolved item in Inspection Report 373/90014 (DRP); 374/90015 (DRP).

b. On August 28 and 29, 1990, the senior resident inspector attended a DRP, Branch 1, SRI meeting in Champaign, Illinois and a combined

inspection tour of the Clinton Power Station. In addition, on August 30, 1990, associated Branch 1 personnel, including the LaSalle, Dresden and Clinton SRIs, attended a meeting with the Illinois Department of Nuclear Safety (IDNS) in Springfield, Illinois to discuss the upcoming signing and implementation of the Memorandum of Understanding (MOU) between the NRC and IDNS. The meeting topics included the interface between the NRC resident inspectors and the IDNS site resident engineers and the coordination of their further activities on those sites.

14. Exit Interview (30703)

The inspectors met with licensee representatives (denoted in Paragraph 1) during the inspection period and at the conclusion of the inspection period on September 4, 1990. The inspectors summarized the scope and results of the inspection and discussed the likely content of this inspection report. The licensee acknowledged the information and did not indicate that any of the information disclosed during the inspection could be considered proprietary in nature.