

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-373/82-30(DPRP)

Docket No. 50-373

License No. NPF-11

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

Facility Name: LaSalle County Nuclear Station, Unit 1

Inspection At: LaSalle Site, Marseilles, IL

Inspection Conducted: June 1-30, 1982

Inspectors: *R. D. Walker for*
W. G. Guldemon 8-16-82

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Approved By: *R. D. Walker*
R. D. Walker, Chief 8-16-82
Reactor Projects Section 1C

Inspection Summary

Inspection on June 1-30, 1982 (Report No. 50-373/82-30(DPRP))

Areas Inspected: Routine, resident inspector operational inspection. The inspection consisted of followup on Previously Identified Items; Operational Safety Verification; Monthly Maintenance Observation; Followup on Regional Requests; Followup on Part 21 Reports; Independent Inspection and Management Meeting Attendance. The inspection involved a total of 230 inspector-hours including 50 inspector-hours onsite during off-shifts.

Results: Of the eight areas inspected, no items of noncompliance were identified in six areas. Three items of noncompliance were identified in the remaining two areas (Failure to implement Technical Specification requirements and unauthorized safety system modification - Paragraph 7; failure to establish plant conditions prior to a mode change - Paragraph 3).

DETAILS

1. Persons Contacted

- *R. Holyoak, Superintendent, LaSalle Station
- *G. J. Diederich, Operating Assistant Superintendent
- *R. D. Bishop, Administrative and Support Services Assistant Superintendent
- *J. G. Marshall, Operating Engineer
- *J. C. Renwick, Technical Staff Supervisor

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

*Denotes personnel attending exit interviews.

2. Followup on Previously Identified Items

The Resident Inspector reviewed the licensee's action taken with respect to the following license conditions:

- a. Paragraph 2.C(5)(a) - Prior to criticality, the licensee shall submit for NRC approval, a revised list of safety-related snubbers. The licensee submitted their revised list on June 7, 1982 to NRR.
- b. Paragraph 2.C(6) - The licensee shall satisfactorily resolve those deficiencies which were deferred from the preoperational testing program and shall assure that the capability of a system required to be operable by Technical Specifications is not degraded. The inspectors ensured deficiencies were complete prior to the system being needed.
- c. Paragraph 2.C(10)(a) - Between initial startup and startup after the first refueling, the licensee shall document and report to the NRC the occurrence of every safety relief valve actuation and the associated cumulative damage factor. The inspector determined that the licensee Procedure LTS-500-15 satisfies this requirement.
- d. Paragraph 2.C(22) - The licensee shall implement approved procedures to monitor battery current, battery charger output voltage, and battery charger output current. The inspector determined that licensee Procedure LOS-AA-S1 satisfies this requirement.
- e. Paragraph 2.C(25)(b) - Prior to initial criticality, the licensee shall install a one-hour rated barrier on all four sides of a partially protected power cable pan and a general sprinkler system, both located in the diesel-generator corridor. The Resident Inspector verified the licensee's actions were complete.

- f. License Attachment 1, Item 5 - This condition requires the installation of 5-PING's. The item was reviewed by regional inspectors previously and remained as Open Item 81-00-102 pending calibration of the PING's. The inspector reviewed the calibration of the PING's and the item is closed.
- g. Paragraph 2.C(30)(d) - Control Room Human Factors Deficiencies needing correction. The inspector reviewed this item as part of Open Item 81-15-11. See results of review as Open Item 81-15-11 of this report.

(Closed) Open Item (373/81-00-96): The Resident Inspector performed an independent valve check and electrical check of the HPCS, LPCS, three (3) diesel generators, SBLC, and the major valves in the RHR System A. A review of the latest valve lineups required by startup procedures were also reviewed by the inspectors. This review was conducted to assure the licensee's compliance with TMI Task Action Item II.K.1 Item 5.

(Closed) Open Item (373/81-00-102): The Resident Inspector reviewed the calibration on the four remaining PINGS and found them to be acceptable. Refer to f. above for discussion of license condition requiring this action.

(Closed) Open Item (373/81-15-11): Human Factors Items; the Resident Inspector verified that the licensee has eyeglasses capable of being used with respiratory equipment for all operating personnel in the Control Room.

The Resident Inspector reviewed the licensee's action on providing paper for chart recorders. For those recorders for which the correct paper has not been obtained, the chart will be annotated at the beginning and end of the paper to indicate the correct scale and a caution card warning the operator of the scale difference will be installed. Refer to g. above for discussion of license condition requiring action.

(Closed) Open Item (373/81-43-03): Following the modifications to the counting room HVAC, testing demonstrated that positive pressure is maintained. The inspector reviewed the data and discussed the results with the cognizant engineers. Per letter dated June 18, 1982, Sargent and Lundy to Commonwealth Edison, the HVAC Engineer determined that this supply of excess air conforms to the design requirements for positive pressurization of the room.

(Closed) Open Item (373/81-01-18): Technical Specification 4.4.3.2.2 requires the LPCS and LPCI check valves to be demonstrated operable by verifying leakage:

- a. Whenever the unit has been in Cold Shutdown or Refueling after the last valve disturbance prior to Reactor Coolant System temperature exceeding 200°F

- b. Within 24 hours following valve disturbance except in Cold Shutdown or Refueling

Licensee procedures in the LTS-900 series accomplish these leak checks.

(Open) Open Item (373/82-28-02): The Resident Inspector verified that the licensee has corrected the piping discrepancies for differential sensor pressure switches identified in LER 82-19 and LER 82-12. The licensee has also completed a review of safety related instrumentation and all instrumentation that had not received a functional test or a previous line walkdown. The instrumentation was functionally tested or walked down by station personnel prior to initial criticality as committed to by the Corrective Action Statement of LER 82-19. This Open Item will remain open until the modification to change the current design of the LPCS injection valve interlock described in LER 82-019 is complete and the drawing change reflecting the correct location of the sensing lines at 1E21-N006 is issued.

(Closed) Open Item (373/81-16-03): Lack of uniform or standard criteria for determining the technical acceptability of a vendor or supplier. The licensee has developed SNED Procedure Q.41, Technical Evaluation of Vendors, to establish the criteria for technical review of vendors. A review of vendor reviews showed that the procedure was being followed and the records were being retained.

No items of noncompliance were identified in this area.

3. Operational Safety Verification

The inspector observed Control Room operations, reviewed applicable logs, and conducted discussions with Control Room operators during the month of June, 1982. The inspector verified the operability of selected emergency systems, reviewed tagout records, and verified proper return-to-service of affected components. Tours of Unit 1 Reactor Building and both 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.

During the inspection period, initial criticality of Unit 1 was observed at 0537 on June 21, 1982. Several additional startups and shutdowns were also observed as part of zero power physics testing including shutdown margins testing. The inspector verified that proper controls were implemented to ensure safe operation of the reactor.

Unit 1 initially entered Operational Mode 3 at 0732 on June 5, 1982. It was subsequently determined that Mode 3 was entered without satisfying the requirements of Technical Specification 3.4.3.1. This specification requires at least two Reactor Coolant System Leakage Detection Systems to be operable. None of the systems were completely

operable. This was determined pursuant to a discussion between the Station Control Room Engineer (SCRE) and an Instrument Mechanic during which the Instrument Mechanic informed the SCRE that the paddlewheels were not installed on the Containment Air Cooler Condensate Flow Rate Monitoring System. Thus, while the electronics for the system were installed, no meaningful readout could be obtained as no detectors were installed. Operations had assumed that the system was operable and had been logging instrument readings for an extended period. This led to a continuing discussion on the operability of the Leakage Detection Systems during which it was discovered that the remaining systems had not been functionally tested within 31 days as required by Technical Specification 4.4.3.1. This is an item of noncompliance (82-30-01).

One item of noncompliance was identified.

4. Monthly Maintenance Observation

During the inspection period, maintenance performed on Unit 1 "A" Main Steam Isolation Valves was witnessed. The following items were verified: 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.

No items of noncompliance were identified.

5. Followup on Regional Requests

The Resident Inspector was requested by Region III to determine the manufacturers of installed bullet resistant fire doors and determine if the licensee had documentation specifically confirming that the doors had been tested for fire resistance by a nationally recognized laboratory. It was determined that installed doors were manufactured by Pioneer and Chicago Bulletproof. The licensee did not have documentation that specifically confirmed the doors, as supplied, had been tested and approved by a nationally recognized laboratory.

Paragraph 2.C.(25)(d) on operating license NPF-11 requires that, "Prior to startup after the first refueling outage, the licensee with respect to fire doors shall implement one of the following:

- a. Perform an engineering review of the manufacturer's certified doors and door frames by a nationally recognized laboratory to certify that the door and door frames provide the required fire resistance rating, or
- b. Test a replicate "as installed" door assembly by a nationally recognized laboratory to determine the door rating, or
- c. Replace the manufacturer's labeled doors and door frames with UL rated items.

The licensee is currently contracting for testing and evaluation pursuant to a. and b. above. Actual work is not expected to commence until at least the latter half of July, 1982.

Not items of noncompliance were identified.

6. Part 21 Followup

On June 8, 1982, Region III received notification from Zack Company that fire dampers 18 inches wide and narrower, manufactured by American Warming and Ventilating, Incorporated and shipped prior to March 24, 1981 may not close when the fusible link separates. A manufacturer's suggested repair was provided. It was determined that fire dampers of this type were potentially in use at LaSalle.

As the type of deficiency reported could render the dampers inoperable, the licensee instituted hourly fire watch patrols in accordance with Technical Specification requirements. Work was commenced on replacing the fusible links. As of June 30, 1982, this work was approximately 50% complete.

No items of noncompliance were identified.

7. Licensee Event Report Followup

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 had been taken, and action to prevent recurrence had been accomplished in accordance with Technical Specifications. These items are closed.

| <u>Number</u> | <u>Title</u> |
|---------------------|---|
| 50-373/82-010/03L-0 | Failed Detector For Fuel Pool Cooling Ventilation Exhaust Radiation Monitor |
| 50-373/82-004/03L-0 | Reactor Building Trackway Door Seal Removed |
| 50-373/82-001/03L-0 | Broken Speed Cable On OB Diesel Fire Pump |
| 50-373/82-018/03L-0 | Fire Detectors Deenergized to Allow Maintenance |

For the following Event Reports, it was determined that reporting requirements had been satisfied and that immediate corrective actions had been taken to resolve the specific issue. However, taken as a whole, the events represent inadequate implementation of Technical Specifications as specified in Paragraph 2.C.(2) of facility operating license NPF-11.

- a. (82-006/03L-0) This LER documents an event in which the channel check of the reactor building and Fuel Pool Vent Exhaust Monitoring System required by Technical Specification 4.3.2.1 was not performed because operations personnel failed to recognize that loading of unirradiated fuel constituted core alterations.
- b. (82-007/03L-0) This LER documents an event in which operating personnel failed to perform the channel check of the Station Vent Stack Radiation Monitoring System required by Technical Specification 4.3.7.11 because they failed to recognize that the system was operable and that Technical Specification testing was required.
- c. (82-014/03L-0) This LER documents an event in which Station Vent Stack Flow estimates were not made every four hours with the flow recorder inoperable as required by Technical Specification 3.3.7.11. Instead, 8 hour grab samples were taken.
- d. (82-015/03L-0) This LER documents an event in which fire door inspections required by Technical Specification 4.7.6.2 were not performed on all doors due to inadequate incorporation of these inspection duties with routine security patrol duties.
- e. (82-016/03L-0) This LER documents an event in which the Action Statement of Technical Specification 3.8.2.4 was not satisfied with the Unit 1, Division II Battery inoperable. The Action Statement requires that until the battery is restored to operable status, the Unit tie breakers for the affected division be aligned to supply power from the associated operable Unit 2 125V DC distribution panel. This was not done. The battery was simply placed on an equalizing charge.
- f. (82-011/03L-0) On May 2, 1982, electrical Bus 141Y was taken out-of-service for cleaning. Prior to the bus outage, a review was conducted to determine what equipment would be affected by the power outage and the appropriate Technical Specification requirements. At 1310, the bus was deenergized. At 2000, it was determined that the Main Stack Gaseous Effluent Monitor System was inoperable. The problem was traced to the deenergization of Bus 141Y. Thus, the review performed for systems affected was inadequate with the result that for approximately seven hours a plant effluent pathway was not monitored.
- g. (82-013/03L-0) With issuance of facility operating license NPF-11, Technical Specification 3.3.7.10 which requires radioactive liquid effluent monitoring instrumentation channels to be operable with alarm/trip setpoints established in accordance with the Offsite Dose Calculation Manual became effective. On April 19, 1982, it was determined that alarm/trip setpoints for the Service Water and RHR Loop Effluent Monitors were nonconservatively set. However, the monitors were not declared inoperable as required by Technical Specification 3.3.7.10, Operations of the Service Water and RHR Service Water Systems were continued, and required

8-hour grab samples were not taken. Compliance was established on May 11, 1982 when the setpoints on the monitors were changed. The result of these events is that plant effluent monitoring capability, fire protection capability, and station emergency power capability were compromised for varying periods of time.

NRC Enforcement Policy and Procedures in section IV.A. "Notice of Violation" states in part that: "Because the NRC wants to encourage and support licensee initiative for self-identification and correction of problems, NRC will not generally issue a notice of violation for a violation that meets all of the following tests:

- (1) It is identified by the licensee;
- (2) It fits in Severity Level IV or V;
- (3) It was reported, if required;
- (4) It was or will be corrected, including measures to prevent recurrence, within a reasonable time; and
- (5) It was not a violation that could reasonably be expected to have been prevented by the licensee's corrective action and for a previous violation."

As demonstrated by the number and nature of the above LER's the licensee did not take prompt and effective correction action to correct personnel problems associated with interpreting and implementing technical specifications identified in these LER's and therefore this constitutes an item of noncompliance with respect to Technical Specification adherence specified in Paragraph 2.C.(2) of facility operating license NPF-11. (82-30-02)

On May 12, 1982, the licensee submitted Licensee Event Report 50-373/82-017/03L-0. This LER documented an event in which Standby Gas Treatment System (SBGT) suction valves 1(2)VG001 failed to open during surveillance testing.

Units 1 and 2 share a common two train SBGT as described in Section 6.5 of the LaSalle FSAR. System Start Logic is designed such that either Division 1 or Division II Primary Containment Isolation System (PCIS) initiation signals from either Unit 1 or Unit 2 will open both SBGT train suction valves and start both fans. However, with Unit 2 under construction and testing, the Unit 2 PCIS initiating signals to SBGT have been blocked. This was done in accordance with the licensee's "LaSalle County Station Units 1 and 2 Unit 2 Separation During Unit 1 Startup and Operation" program to preclude inadvertent SBGT initiation.

Because SBGT is a shared system, initiating logic associated with Unit 1, Division I and II signals receives power in part from Unit 2. On or before April 25, 1982, a portion of the Unit 2 power feeding the Unit 1 initiating logic for the local suction valves was lost. It is surmised, but not established, that the power loss occurred as a result of construction activities. This power loss allowed relays to drop out and caused the normally shut local suction valves for SBGT to open.

On April 25, 1982, the Control Room Operator and the Station Control Room Engineer (SCRE) discovered the valves open. As there were no Unit 1 PCIS initiating signals present at the time, an attempt was made to return the valves to their normally shut position. However, the valves failed to shut.

At this point, the Control Room Operator and the SCRE began reviewing SBT and PCIS schematics in an attempt to determine a cause for the abnormal condition. They incorrectly concluded that the blocking of Unit 2 PCIS signals per the separation plan was incomplete and that four more leads needed to be lifted to prevent what they believed to be Unit 2 PCIS signals from opening the local SBT suction valves. The four leads were lifted in accordance with the Jumper and Lifted Lead Administrative Procedure LAP 240-3.

On May 11, 1982, Instrument Surveillance LIS-PC-05 was performed. Although this surveillance does not specifically address SBT Local Suction Valve Operation, a SBT simulated initiation signal is generated. The local suction valves failed to open. The problem was traced to the four leads lifted on April 25, 1982. Rather than completing the Unit 1-Unit 2 separation as postulated, lifting the leads prevented the suction valves from opening in response to a Unit 1, Division II signal.

Technical Specification 3.6.5.3 requires that two Independent Gas Treatment Subsystems shall be operable. During core alterations with both subsystems inoperable, core alterations are to be suspended. This operability is defined, in part, by Technical Specification 4.6.5.3.d.2 which requires the filter trains to start and the isolation dampers to open on high reactor building exhaust plenum radiation, high drywell pressure, low reactor vessel water level, and high fuel pool vent exhaust radiation. Given that, SBT would not have initiated in response to Division II of the above signals, the entire system was rendered technically inoperable. This position is reinforced by the fact that a failure of the 0 Diesel Generator, which powers Division 1 logic, would have prevented the system from responding to any initiating condition. Thus, during the period April 25, 1982-April 30, 1982 while Unit 1 core alterations were being performed in the form of initial fuel loading, the licensee was in violation of Technical Specification 3.6.5.3.

10 CFR 50.59 requires that changes to the facility as described in the Final Safety Analysis be reviewed to determine if the changes involve an unreviewed safety question. Per Technical Specification 6.1.6.2, this review is to be performed by the Onsite Review and Investigative Function. This review was not performed. The modification did involve an unreviewed safety question in that lifting leads increased the consequences of an equipment malfunction in the SBT.

In summary, the actions taken by the SCRE and the Control Room Operator on April 25, 1982 were in direct violation of 10 CFR 50.59 requirements

and placed a safety system in an inoperable condition in violation of Technical Specification 3.6.5.3. This is an item of noncompliance (82-30-03).

Two items of noncompliance were identified in this area.

8. Management Meeting

On June 11, 1982, a meeting was held in the Region III offices between NRC Region III personnel and Commonwealth Edison representatives as noted below. The purpose of the meeting was to express NRC concerns over the apparently excessive number of Reportable Events which had occurred at LaSalle Station since issuance of operating license NPF-11.

Five areas of concern were discussed: failure to implement Technical Specification surveillance requirements; failure to comply with Technical Specification action statements; unauthorized operation of safety related equipment; inadequate plant awareness; system deficiencies associated with control room alarm and indication functions. Specific examples of each area were presented.

The licensee acknowledged the concerns expressed. They further stated that they had formulated similar concerns and that these concerns had been the subject of an On-Site Review on May 24, 1982. The results of the On-Site Review were discussed.

At the conclusion of the meeting, the licensee agreed to provide to Region III their program addressing the expressed NRC concerns. This program was received on June 17, 1982. Implementation is being followed by the Resident Inspector.

Meeting Attendees

NRC

A. B. Davis, Deputy Director, Region III
R. L. Spessard, Director, Division of Resident and Project Inspection
R. C. Knop, Chief, Projects Branch 1
R. D. Walker, Chief, Projects Section 1C
W. G. Guldmond, Senior Resident Inspector, LaSalle Station
M. J. Jordan, Resident Inspector, Dresden Station

CECO

W. Duke, Nuclear Safety Administrator
W. Steide, Assistant Vice President
C. Reed, Vice President for Nuclear Operations
L. DelGeorge, Director of Nuclear Licensing
D. Galle, Vice President and General Manager for Nuclear Divisions
R. Holyoak, Superintendent, LaSalle Station
G. Diederich, Operating Assistant Superintendent
J. Renwick, Technical Staff Supervisor

9. Independent Inspection Effort

On June 11, 1982, the licensee issued a memorandum to the NRC Regional Administrator concerning an allegation made to the Illinois Department of Nuclear Safety of possible construction deficiencies in the attachment of subfloor piping flanges to steel liners of floor sumps. The allegation stated that the attachments of piping flanges to the steel liners were not seal welded in accordance with Note 5 of Drawing A-529, but were only set in against the liner plates, and then backfilled with concrete. Without the seal welds, the concrete floor material provides the sealing mechanism for radioactive fluids. Because concrete is porous and possesses small sub-surface hairline cracks, release of radioactive effluents to the environment becomes a concern.

Drawing A-598, detail "Q" shows a typical sump liner penetration. The drawing does not require welding the pipe flange or plate to the liner. On the concrete side of the liner, a 1/4" circular plate is required to be welded to the pipe and installed flush against the liner. On the inside of the liner, the pipe to liner gap is to be sealed with epoxy grout. Visual inspection by the licensee revealed the piping was neither seal welded per Drawing A-529, nor grouted per Drawing A-528. The licensee has a signature card showing that prior to the pouring of the concrete the mechanical piping was satisfactory.

Note "Q" to Drawing A-598 was added April, 1974. Note 5 of Drawing A-529 had been there since the initial drawing issuance, before 1972. Records of concrete pours around some of the sumps show dates of August, 1974 to January, 1975. Thus, both notes existed before pouring concrete.

Inspection of the sumps by the Resident Inspector showed that neither grouting nor seal welding was on the inside of the sump liner. The licensee has established a program of sealing the piping to sump liner by seal welding. This has been completed for Unit 1. This, combined with the fact that Paragraph 2.4.12 of the LaSalle County Station FSAR provides an analysis of accidental release of liquid effluent and demonstrates that the liquid could not leak out of the basement because the groundwater elevation (700 feet level) is above the floor (633 feet) and allows this item is considered closed.

The inspector questioned during this review why the sumps were not sealed as required by Drawings A-529 and A-528. Fundamentally, the inspector was informed that the problem was missed because the sumps are not subject to 10 CFR, Part 50, Appendix B Quality Assurance (QA) inspections via FSAR Table 3.2-1, Item XXXVII. The inspector questions whether FSAR Table 3.2-1 is accurate in this case since the sumps appear to be required to meet the design criteria stated in 10 CFR, Part 50, Appendix A, Criterion 60. If the sumps are required to meet 10 CFR, Part 50, Appendix A, design criteria, it would seem that the QA requirements of 10 CFR 50, Appendix B should apply and therefore FSAR Table 3.2-1 is in error. This issue is considered to be an Unresolved Item

(373/82-30-03) and will be referred to the Office of NRR for resolution of the requirements.

10. Unresolved Items

Unresolved Items are matters about which more information is required in order to ascertain whether they are acceptable items, items of non-compliance, or deviations. An unresolved item disclosed during the inspection is discussed in Paragraph 9.

11. 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.