

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-373/82-41(DPRP); 50-374/82-09(DPRP)

Docket Nos. 50-373; 50-374

Licenses No. NPF-11, CPPR-100

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

Facility Name: LaSalle County Station, Units 1 and 2

Inspection: LaSalle Site, Marseilles, IL

Inspection Conducted: August 2-31, 1982

Inspectors: *R. D. Walker for*
W. G. Guldemon

10-4-82

R. D. Walker for
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10-4-82

R. D. Walker for
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10-4-82

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10-4-82

Approved By: *R. D. Walker*
R. D. Walker, Chief
Reactor Projects Section 2A

10-4-82

Inspection Summary

Inspection on August 2-31, 1982 (Reports No. 50-373/82-41(DPRP);
50-374/82-09(DPRP))

Areas Inspected: Routine, unannounced resident inspection. The inspection consisted of Licensee Action on Previous Inspection Findings; Operational Safety Verification; Licensee Event Reports Followup; Plant Trips/Safety System Challenges; Startup Test Witnessing; Followup of IE Information Notices; Part 21 Followup; IE Bulletin Followup; and Independent Inspection Effort. The inspection involved a total of 229 inspector-hours onsite by four NRC inspectors including 50 inspector-hours on off-shifts.

Results: Of nine areas inspected, no items of noncompliance were identified in eight areas; one item of noncompliance was identified in the remaining area (Unsupervised trainee performing reactivity manipulations - Paragraph 3).

DETAILS

1. Persons Contacted

- *R. Holyoak, Station Superintendent
- *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
- *R. D. Kyroutac, Quality Assurance Engineer

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. Licensee Actions on Previous Inspection Findings

(Closed) Open Item (373/81-00-112): License Condition requiring Documentation of Fuel Assembly Liftoff Analysis. Paragraph 2.C(12)(a) of Facility Operating License No. NPF-11 requires by July 30, 1982, the licensee shall submit to NRC a complete description of the analytical methods along with all analytical results necessary to show that LaSalle fully meets the criteria of Appendix A to the Standard Review Plan, Section 4.2 (NUREG-0800) with regard to fuel assembly liftoff. The inspector verified that this requirement was satisfied in a July 30, 1982, letter from Mr. C. W. Schroeder (Licensee) to Mr. A. Schwencer (NRC).

(Closed) Noncompliance (373/82-28-01): Control of Fire Hazards and Fire Doors. This item of noncompliance documented failure to control fire hazards and fire doors. The licensee provided corrective actions in a letter dated August 9, 1982, from Mr. L. O. DelGeorge (Licensee) to Mr. J. G. Keppler (NRC). The inspector verified that the corrective actions had been implemented and were effective in solving the noted problems.

3. Operational Safety Verification

The inspectors observed control room operations, reviewed applicable logs, and conducted discussions with plant operators during the month of August 1982. The inspectors verified the operability of selected emergency systems, reviewed tagout records, and verified proper return to service of affected components. Tours of Unit 1 and Unit 2 reactor buildings and turbine buildings were conducted to observe plant equipment conditions, fire hazards, fluid leaks, and excessive vibrations and to verify that maintenance requests had been expeditiously initiated and resolved for equipment in need of maintenance.

On August 3, 1982, the inspector was notified by the licensee of a discrepancy between indicated and actual suppression pool water level. It was found that the narrow range recorder located on Panel 1PM13J in the control room was indicating a level up to 4.5 inches higher than actual level. The cause for this discrepancy was ascertained to

be a malfunction in a level transmitter causing a shift in the zero set. The wide range level recorder, also located on Panel 1PM13J, was unaffected.

Following identification of the problem, confirmation of suppression pool level was made locally utilizing a sightglass indicator. Level was observed to be +0.5 inches above instrument zero, well within the normal operating range. The faulty transmitter was repaired and returned to service. No Technical Specification limits were exceeded.

At approximately 1:15 p.m. on August 9, 1982, both Unit 1 drywell chillers were lost. Drywell temperature and pressure rose to peak values of 139°F and 0.5 psig respectively. When one chiller was returned to service, temperature stabilized and pressure returned to normal. However, temperature was still above the Technical Specification Limiting Condition for Operation (LCO) of 135°F placing the plant in an eight hour action statement of the LCO. At approximately 7:30 p.m., the licensee commenced a shutdown. However, the shutdown was terminated at 250 psig reactor pressure when drywell temperatures fell below 135°F.

As a result of heat loading surveys, some additional insulation was installed on components in the drywell. However, in order to maintain drywell temperature below 135°F, continuous operations of both drywell chillers is required. Operations will continue in this manner until a permanent solution can be found. This is an open item (373/82-41-01).

On August 18, 1982, during a routine control room inspection, the inspector monitored a Unit 1 reactor startup performed by an operator trainee. During the course of the startup, the trainee was supervised by three different licensed operators. On two occasions during the startup, the trainee was observed pulling control rods without direction from and not under the supervision of a licensed operator. This is contrary to 10 CFR Part 55, Paragraph 55.9 and as such represents an item of noncompliance (373/82-41-02).

On August 23, 1982, during a routine walkdown of the control room, the inspector noted that the minimum flow bypass valves in the Residual Heat Removal System for Unit 1 were not in the normally open position. Following further investigation, it was found these valves were capable of performing their required functions regardless of their initial valve positions.

During inspection of the related mechanical checklists, a discrepancy between the valve lineups for Unit 1 and Unit 2 Residual Heat Removal Systems was observed. The licensee's reason for this was that valve lineups have not been finalized for Unit 2, but that this would be done prior to Unit 2 startup. The inspector is following resolution of this matter as an open item (374/82-09-01).

On August 4, 1982, the licensee informed the inspector that weld inspections performed as part of a followup to a Part 21 Report issued by Zack Company had identified three sections of ducting in the Unit 2, Division 2 switchgear room with rejectable stitch welds

between the duct material and bolting flanges. As one of the duct sections was mounted above the Unit 2, Division 2 switchgear cooling control unit, the switchgear was declared inoperable and the licensee entered a seven day action statement of the LCO. Repairs were effected and the switchgear was declared operable on August 7.

On August 26, 1982, during a routine plant tour, the inspector noted two unattended bags labelled radioactive waste stored in an uncontrolled area of Unit 2 turbine hall. One of the bags was sealed, one was open. The Rad/Chem Supervisor was immediately notified and the bags were removed. Followup surveys detected no surface contamination in the area where the bags had been stored. The fact that the bags of waste were left unattended in an uncontrolled area is a violation of Radiation Control Procedure LRP 1440-2. However, it was subsequently determined that the material in the bags had been surveyed and found to be not contaminated prior to storage in Unit 2 turbine hall. Based on this occurrence, the licensee is pursuing an administrative mechanism to control the labelling of surveyed material to clearly indicate its contamination status. This item remains open until such controls are in place. (373/82-41-03)

One item of noncompliance and no deviations were identified in this area.

4. Licensee Event Reports 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 was accomplished, and corrective action to prevent recurrence had been accomplished in accordance with Technical Specifications.

Docket No. 50-373

<u>LER No.</u>	<u>TITLE</u>
82-039/03L-0	Leaking Flange on Shutdown Cooling System
82-050/03L-0	Control Room Ventilation Damper Stuck Open
82-065/03L-0	Assessment of Drywell to Suppression Chamber Vacuum Breakers
82-072-03L-0	Improper Valve Lineup on Main Steam Line Drain Valves
82-075/03L-0	Inoperable ADS Valves Due to Air Hose Failure

In addition, the inspector performed followups on Licensee Event Reports No. 82-044/03L-0, No. 82-045/03L-0, No. 82-049/03L-0, No. 82-052/03L-0, and No. 82-053/03L-0, all of which demonstrated a common problem involving valve lineups for instrument rack root stop valves following instrument surveillances.

In accordance with station procedures, valve lineup check sheets were completed in all cases. However, root stop valves that were supposed to be left in the open position following surveillances and were listed as such on the check sheets were actually closed and, in all but one case, lockwired in that position. The cause for this was ascertained to be the use of an improper method in determining correct valve position. Up until this time, personnel were checking only for the

presence of a sealwire on a valve as an indication that valve was in the proper lineup. The assumption was made that if the sealwire was present, the valve was in the correct position. To rectify this, the Master Instrument Mechanic conducted discussions with all shop personnel specifying that valve position be checked visually and physically regardless of the presence of sealwires.

In one case, the sealwire had been removed between the last surveillance and the time that the root stop valve was discovered to be in the wrong position. The licensee could not determine the cause of the sealwire removal.

Based on the corrective actions taken, all the above noted LER's are considered closed.

No items of noncompliance or deviations were identified in this area.

5. Plant Trips/Safety System Challenges

A Unit 1 automatic scram occurred at 10:55 p.m. on August 3, 1982. The cause of the trip as indicated by the first out annunciator was Intermediate Range Monitor (IRM) Hi-Hi/Inop. Review of the plant strip recorders showed no evidence of a power level change at the time of the trip. Subsequent investigation revealed that an instrument mechanic had removed a high voltage card from a bypassed IRM simultaneous with the trip. Attempts at duplicating the scram signal by inserting and withdrawing the high voltage card were unsuccessful. The cause of the trip signal has been attributed to electronic noise. The reactor was taken critical at 7:25 a.m. on August 4, 1982. All safety systems functioned normally on the scram.

Unit 1 reactor was manually scrammed at 6:53 p.m. on August 12, 1982 following a trip of the operating control rod drive (CRD) hydraulic pump and receipt of hydraulic control unit accumulator low pressure alarms. The trip of the CRD pump was caused by a low level in the condensate storage tank resulting in a loss of suction pressure to the pump. All systems functioned normally.

Investigation into the cause of the condensate storage tank low level condition revealed that excessive water was sent to the main condenser hotwell while attempting to lower condensate temperatures. Review of the alarm typewriter output showed that a condensate storage tank low level alarm was received at 4:21 p.m. However, no action was taken to monitor tank level or restore the level to normal. Later discussions with operating personnel revealed that the control board annunciator which indicates the low condensate storage tank trip did not alarm in response to the actual low level. The annunciator was successfully tested three times after the trip. The reactor was returned to criticality on August 13, 1982, following receipt of a Technical Specification change for Reactor Core Isolation Cooling System operability.

Unit 1 reactor experienced an automatic reactor scram at 10:02 a.m. on August 17. The scram occurred in response to a mainsteam tunnel high

differential temperature Group 1 isolation with the mode switch in run. It was subsequently determined that the high differential temperature experienced in the steam tunnel occurred when the reactor building ventilation system was restarted following filter replacement. The sudden introduction of cooler air into the main steam tunnel combined with the exhausting of air which had risen in temperature while ventilation was secured resulted in the high differential temperature condition. An entry into the steam tunnel was performed and it was verified that there was no leakage.

On August 30, 1982, Unit 1 scrambled on low reactor water level. One train of low pressure feedwater heaters had been isolated prior to the scram due to leakage. At approximately 9:30 p.m., a second low pressure string automatically isolated. The annunciator for the feedwater heaters is a common alarm, so no new alarm was initiated when the second heater string automatically isolated. However, the alarm typer did print a message concerning the second heater string isolation. The operators, not having reviewed the alarm typer, remained unaware that only the third string of low pressure heaters was functional and did not open the bypass valve. Subsequently, when the third string isolated six hours later, the feed pump tripped on low suction pressure removing all feedwater flow and resulting in a reactor scram on low reactor water level.

This is the second occurrence in which an annunciator was not sounded, yet the alarm typer would have made the operators aware of the problem had they reviewed it on a regular basis. The first occurrence was noted by the inspectors on August 12 when the CRD pumps tripped on low suction pressure due to low level in the condensate storage tanks.

The licensee is emphasizing operator use of the alarm typer and examining methods to make the alarm typer more operationally useful.

No items of noncompliance or deviations were identified in this area.

6. Startup Test Witnessing

Reactor Core Isolation Cooling (RCIC) was declared inoperable on August 3, 1982, following unsatisfactory performance during surveillance testing. On a fast start, the RCIC turbine tripped on high steam flow. The second attempt of a fast start did not produce a turbine trip, however, pump flow was less than that required by Technical Specifications. Subsequent to the first fast start attempt and prior to the second, a slow start was performed. Pump flow was less than the 600 GPM required.

After increasing flow orifice size on August 4, the fast start surveillance was repeated with similar flow results. On August 5, reactor pressure was increased to 200 psi and pump flow of 600 GPM was achieved. The licensee is considering several alternative resolutions to the flow problem. Among these are: replacement of the test return line isolation valve and engineering evaluation of actual flow into the vessel vs. vessel pressure.

A wording problem was discovered by the licensee in the FSAR. Table 14.2-112, Reactor Core Isolation Cooling System Startup Test, states, "The pump discharge pressure during the above manual and hot starts will be throttled to 100 psi above reactor pressure." After consultation with the Office of Nuclear Reactor Regulation (NRR), the licensee was instructed to throttle to at least 100 psi above reactor pressure.

The inspector observed the performance of several RCIC startups and prolonged operation of the system. The only problem the inspector noted was the lack of attention given to suppression pool temperature. The precautions of the Startup Test Procedure (S.T.P.) require this temperature to remain at or below 95°F. In fact, the high temperature alarm was reached during operation of RCIC on August 6. This concern was related to the licensee.

During observations of startup tests performed on the off-gas system on August 5, the inspector noted that the licensee was in the process of securing the stack monitoring system. The inspector reminded the Shift Control Room Engineer (SCRE) that stack monitoring was required by the startup procedure for off-gas. Compensatory measures were then taken to ensure continuous monitoring of stack effluents.

On August 8, 1982, the inspector witnessed the startup test demonstrating acceptable SCRAM times for individual control rods (STP-5) at rated reactor pressure. The only discrepancy noted during the test dealt with the scram time determination for rod 42-23. During the test, rod position 47 did not register as the control rod was scrammed. The cause was ascertained to be a mispositioned reed switch in the control rod drive mechanism. This information was noted along with the data acquired and will be evaluated during the test review. The test was conducted in accordance with an approved procedure and the results were found to be acceptable.

No items of noncompliance or deviations were identified in this area.

7. Followup of IE Information Notices

(Closed) IE Information Notice No. 82-28: Hydrogen Explosion While Grinding in the Vicinity of Drained and Open Reactor Coolant System. This Information Notice documents an event in which a hydrogen explosion occurred due to grinding on a recently cut high pressure injection pipe. The inspector determined that the licensee has in place Administrative Procedures LAP 900-10, "Fire Prevention Procedure for Welding and Cutting" and LAP 900-13, "Testing for Hydrogen Gas" which specify adequate preventative measures to preclude a similar event from occurring at LaSalle.

(Closed) IE Information Notice No. 82-31: Overexposure of Diver During Work in Fuel Storage Pool. This Information Notice documents an event in which a diver received excessive radiation exposure while installing fuel rack support plates in a fuel storage pool. The event was attributed to three factors. First, an improper fuel assembly transfer placed an irradiated fuel assembly in close proximity

to where the diver subsequently worked. Second, an inadequate underwater radiation survey was performed prior to the work beginning. Third, the alarm dosimeters worn by the diver were not source checked prior to the work beginning. The inspector reviewed this event for applicability to LaSalle and made the following observations. There are no procedures written explicitly for exposure control of divers. However, the following in-place procedures do provide adequate controls for underwater exposure: LRP 1160-4 ALARA Review, LRP 1250-2 Exposure Control, and LRP 1000-1 Radiation Protection Standards.

(Closed) IE Information Notice No. 82-18: Assessment of Intakes of Radioactive Material by Workers. This Information Notice reaffirms the NRC commitment to use International Commission on Radiological Protection Publication 2 methodology in determining compliance with 10 CFR 20 until this part is revised. The licensee's bioassay program was deemed acceptable using the criteria in NUREG-0519.

No items of noncompliance or deviations were identified in this area.

8. Part 21 Followup

The inspectors reviewed licensee action concerning General Electric's 10 CFR Part 21 report dated August 12, 1981, concerning Crosby Safety Relief Valve (SRV) solenoid valves. Modification 1-1-82-059, completed June 19, 1982 on Unit 1, installed Crosby IMF-2 solenoids. This is considered a satisfactory solution and closes the concerns as related to Unit 1. Similar actions are to be performed on Unit 2 Crosby SRV solenoid valves prior to fuel load. This is an open item (374/82-09-02).

No items of noncompliance or deviations were identified in this area.

9. IE Bulletin Followup

Based on a review of IE Bulletin No. 82-02, "Degradation of Threaded Fasteners in the Reactor Coolant Pressure Boundary of PWR Plants," the inspector determined that the bulletin is not applicable to LaSalle and is considered closed.

No items of noncompliance or deviations were identified in this area.

10. Independent Inspection Effort

A potential generic problem had been identified in Regions IV and V concerning personnel airlocks manufactured by Chicago Bridge and Iron. The inspector verified that personnel airlocks at LaSalle had been manufactured by Chicago Bridge and Iron. The licensee had not encountered the problem identified by Regions IV and V, but is in the process of investigating its applicability. The inspectors will follow the licensee's investigation. This is an open item (373/82-41-04).

No items of noncompliance or deviations were identified in this area.

11. Exit Interview

On August 19, 1982, the inspectors met with the Operating Engineers and the Administrative and Support Services Superintendent to convey the results of recent control room observations and to express concerns resulting from these observations. Five areas of concern were expressed: response of operators to alarms, excessive personnel in the control room, lack of coordination of control room activities, insufficient control of a trainee performing a reactor startup (See Paragraph 3), and the large number of material deficiencies in the control room. Specific examples of each concern were provided.

In the ensuing discussion, the inspectors suggested that the licensee review their schedules for compatibility to ensure that planned events could be efficiently coordinated. The licensee took the inspectors' concerns under advisement and agreed to investigate them.

On September 2, 1982, a similar discussion was held between the inspector and the Acting Plant Superintendent. Specifically, activities affecting the reactor operator during startup and operator attentiveness to alarms and indications were discussed.

As of September 10, 1982, the inspectors noted considerable improvement in these areas of concern. The licensee had taken the following actions: (1) All personnel entering the control room are required to log in with the time and the nature of their business; (2) A corridor has been established around all control panels to ensure the operator freedom of access to these panels; (3) A meeting was conducted with all operations supervisory personnel to arrive at methods of improving performance; (4) A licensee representative independent of LaSalle Station and experienced in plant evaluations performed a two-day evaluation of control room operations and made recommendations for improvements to station management; (5) Changes to shift turnover checklists to improve their effectiveness were initiated; (6) Efforts were undertaken to prepare written guidance on control room protocol; and (7) Station management established correction of control room deficiencies as a number one priority consistent with other plant deficiencies.

These actions and their results appear to be adequately addressing the inspectors' concerns. However, continuing scrutiny will be applied to the area of control room operations to ensure continuing improvement in performance.