U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-373/84-10(DPRP); 50-374/84-13(DPRP)

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: March 25 through April 13, 1984

Inspectors: W. G. Guldemond

S. C. Guthrie

C. D. Evans

Approved By: W. J. Chrissotimos, Chief
Reactor Projects Section 2C

5-10-84
Date

Inspection Summary

Inspection on March 25 through April 13, 1984 (Reports No. 50-373/84-10(DPRP); 50-374/84-13(DPRP))
Areas Inspected: Routine, unannounced inspection conducted by resident inspectors of licensee actions on previous inspection findings; ooerational safety; onsite followup of operating events; Licensee Event Reports; independent inspection; periodic and special reports; startup testing; maintenance; IE Bulletins; and procedures. The inspection involved a total of 151 inspector-hours onsite by three NRC inspectors including 20 inspector-hours onsite during off-shifts.
Results: Of the ten areas inspected, no items of noncompliance or deviations were identified in eight areas; two examples of one item of noncompliance were identified in the remaining areas (failure to follow procedures - Paragraphs 4 and 5).

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## DETAILS

1. Persons Contacted

*G. J. Diederich, Superintendent, LaSalle Station
*R. D. Bishop, Administrative and Support Services Assistant Superintendent
*C. E. Sargent, Operating Assistant Superintendent
J. G. Marshall, Operating Engineer
*W. Huntington, Technical Staff Supervisor
*R. Kyrouac, Quality Assurance Supervisor
*R. Clark, Quality Control Supervisor

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

*Denotes personnel attending exit interview.

2. Licensee Actions on Previous Inspection Findings

(Closed) Unresolved Item (373/83-12-05(DPRP)): This unresolved item documented inspector concerns over the level of station management that could authorize deviations from the overtime guidelines contained in TMI Task Action Item I.A.1.3.. In revision 3 of LaSalle Administrative Procedure LAP-100-17, "Overtime Guideline For Personnel That Perform Safety Related Functions," the licensee changed their requirements to require Assistant Superintendent pre-approval of deviations from overtime guidelines. This is acceptable.

(Closed) Noncompliance (373/83-42-03(DPRP)): This item documented a failure to maintain a second offsite power source immediately available to Unit 1 as required by Technical Specifications. The licensee has made the necessary procedural changes to allow for immediate availability of a second power source through the alternate unit's electrical distribution system.

(Closed) Open Item (373/83-37-03(DPRP)): This open item tracked licensee corrective actions for a startup in which a water hammer occurred due to a failure to drain water from the main steam lines and in which the main condenser manways were not installed. The licensee has revised LGP 1-S1, the master startup checklist, to require that moisture be drained from the main steam lines and the condenser manway covers be verified in place.

(Closed) Open Items (373/83-37-01(DPRP) and 374/83-37-02(DPRP)): These open items tracked the status of changes to the drywell to suppression pool bypass leakage test, LTS 300-10, to require a specific valve lineup for the test and to include the post-LOCA containment monitoring system in the test. These changes have been made.

(Closed) Open Item (373/83-49-03(DPRP)): This open item tracked the preparation of a training module on the RHR system committed to in response to noncompliance item 373/83-34-02(DPRP). This module has been completed.

(Closed) Open Item (374/83-46-01(DPRP)): This open item tracked a licensee commitment to perform testing on the reset feature of certain isolation valves. This testing has been completed.

(Closed) Open Item (373/83-19-01(DPRP)): This open item tracked licensee corrective actions in response to identified deficiencies in the Technical Specification surveillance program. The licensee has conducted multiple reviews of their program to ensure all Technical Specification surveillances are entered in the program and are being called up at the proper frequency. All identified deficiencies have been corrected. In addition, a surveillance oversight group was formed to monitor program implementation. Program and implementation adequacy will be monitored as part of the routine inspection program.

(Closed) Open Item (374/81-00-54(DPRP)): This open item tracked the status of certain testing required by Condition C of Attachment 1 to the Unit 2 Operating License NPF-18. This testing was verified complete including required reviews.

(Closed) Open Item (374/81-00-55(DPRP)): This open item tracked the status of certain testing required by Condition D of Attachment 1 to the Unit 2 Operating License NPF-18. This testing was verified complete including required reviews.

(Closed) Open Item (373/81-00-131(DPRP)): This open item tracked Condition 2.C(5)(b) of the Unit 1 Operating License NPF-11. This condition required the licensee to submit a Technical Specification change to modify the safety-related snubber list. A change was submitted on March 23, 1984 to delete the list in its entirety.

(Closed) Open Item (374/84-01-02(DPRP)): This open item tracked changeout of the expansion bellows on the extraction steam lines to the number 14 feedwater heaters in the Unit 2 condenser. This changeout has been completed.

(Closed) Open Item (373/82-18-02(DE)): This open item tracked resolution of inspector concerns that the terminal voltage of the as-installed Unit 2 Division III battery was such that when an equalizing charge was applied the rated voltage of supplied equipment was exceeded. With the concurrence of General Electric and the licensee's engineering staff, the licensee modified the battery, removing two cells, with the result that equalizing charge voltages are now acceptable.

(Closed) Unresolved Item (373/84-02-06(DPRP)): This unresolved item documented inspector concerns that existing Technical Specifications did not explicitly address the operability or testing of the radwaste effluent process radiation monitor (PRM) flow meter or flow alarm. In discussions with the Office of Nuclear Reactor Regulation (NRR) on March 22, 1984, it was determined that specific Technical Specifications were not required for the subject instruments. It was further determined that in the event flow was lost or not established through the radwaste effluent PRM, the PRM was to be considered inoperable.

(Closed) Open Item (373/84-02-08(DPRP)): This open item tracked the status of certain changes to procedure LOP-WF-20 required as a result of an event in which a radwaste discharge was made with an inoperable PRM. These changes were made as part of Revision 6 to the subject procedure.

(Closed) Open Item (373/84-02-09(DPRP)): This open item tracked a licensee commitment to modify the equipment out-of-service procedure LAP 900-4, to require that establishing and clearing out of service on radwaste effluent pathways be verified by a second person. The required changes have been made.

(Closed) Open Item (374/84-01-03(DPRP)): This open item tracked receipt of information on licensee actions to prevent the overtemperature conditions discovered in the Unit 1 drywell in 1983 from recurring in Unit 2. This information was received. The inspector verified that committed-to actions had been completed.

(Closed) Open Item (373/81-30-08(DPRP)): This open item tracked licensee corrections of errant Technical Specification references in surveillance procedures. This issue was addressed by the licensee during their recent review and upgrade of the Unit 1 and Unit 2 Technical Specification surveillance matrices. A number of reference errors were found and have been corrected.

(Open) Open Items (373/83-17-02(DPRP) and 374/83-16-01(DPRP)): These items track licensee actions with respect to an organic intrusion into the reactor coolant system from the laundry system. The licensee currently has in place procedures for obtaining laundry sump samples prior to release to the radwaste system and procedures for analytical determination of organic concentrations; however, there are no procedural requirements to perform an organic concentration determination of the laundry tanks prior to release to the radwaste system. These items will remain open until such procedural requirements are in place.

(Closed) Open Item (373/83-28-01(DE)): This open item documented inspector concerns relative to the value of rated core flow used in process computer thermal calculations. The licensee, as noted in IE Inspection Reports 50-373/83-54(DE) and 50-374/83-57(DE), has adequately addressed the inspector's concerns.

(Closed) Noncompliance (373/83-34-03(DPRP)): This item documented an event in which the Unit 1 reactor vessel was inadvertently overfilled and pressurized during cold shutdown due in part to an inadequacy in the procedure for Residual Heat Removal (RHR) System fill and vent. The procedural inadequacy has been corrected.

(Closed) Open Item (373/83-37-05(DPRP)): This open item tracked inspector concerns over observed inconsistencies in the manner in which the licensee was controlling access to contaminated areas. Recent observations following licensee upgrading of contamination control practices have resolved inspector concerns in this area.

(Open) Open Item (373/83-37-07(DPRP)): This open item tracked licensee committed-to corrective actions in response to IE Information Notice 83-23, "Inoperable Contaminent Atmosphere Sensing Systems." After review of this notice the licensee determined that procedures LOP-FC-10 and LOP-FC-11 required revision to ensure that drywell head area sensing lines remained uncapped following head removal and replacement. This determination was made in October 1983. As of April 1984 no procedure changes had been implemented. This is viewed as untimely action on the part of the licensee particularly in view of the recently completed Unit 2 initial fuel load.

(Closed) Open Item (373/83-42-11(DPRP)): This open item tracked licensee corrective actions in response to an event in which a modification was performed to the Standby Gas Treatment System, weld rod traceability was lost, and Unit 1 was started up before the modification package received final review and approval. On April 4, 1984 the inspector reviewed the results of an audit of the corrective actions performed by the site Quality Assurance Department. This audit showed that the loss of weld rod traceability had been resolved by component replacement and that training had been satisfactorily completed in the area of work/modification package control.

(Closed) Noncompliance (373/83-14-01(DPRP)): This item documented three cases of technically inadequate surveillance procedures. The inspector determined that all these procedures have been properly revised.

(Closed) Open Item (373/83-53-05(DPRP)): This open item tracked a licensee commitment to remove expansion bellows bracing from the Unit 2 condenser. This has been completed. In addition, the licensee has replaced the expansion bellows for the 14 feedwater heaters in Unit 2.

(Closed) Open Items (373/83-53-03(DPRP) and 373/84-02-01(DPRP)): These open items tracked a licensee commitment to provide and implement acceptable procedures for personnel surveys at contamination control points. The licensee has issued procedure LRP-1480-4, "Personal External Contamination Surveys (Hand Held Probe)." The inspector reviewed this procedure and found it technically acceptable. Implementation was verified by in-plant monitoring of personnel exiting contaminated areas.

(Closed) Noncompliance (373/83-53-02(DPRP)): This item documented numerous violations of equipment survey requirements at a contamination control point. Licensee corrective actions included retraining of on-site personnel in equipment survey requirements and the temporary stationing of Rad/Chem Technicians at highly trafficked control points to ensure compliance with requirements. Recent observations of control point activities have confirmed the effectiveness of the licensee's corrective actions.

(Closed) Open Items (373/83-34-05(DPRP) and 374/83-33-01(DPRP)): These open items tracked licensee actions in response to inspector concerns over the installation of temporary shielding. Of specific concern was the fact that installation of such shielding could compromise the seismic analysis of the shielded system. In response to the inspector's concerns, the licensee has implemented procedure LAP-300-9, "Controlling the Installation and Removal of Temporary, Mechanical Maintenance Devices." This procedure specifies that stress calculations be performed prior to the installation of temporary lead shielding.

(Closed) Open Item (373/81-15-13(DPRP)): This open item tracked correction of certain control room human factors deficiencies as identified by Condition 2.C(30)(d) to the Unit 1 Operating License NPF-11. These deficiencies will be corrected as part of the Detailed Control Room Design Review required by a February 21, 1984 Confirmatory Order on Emergency Response Capability and tracked by open item 373/81-00-138(DPRP).

(Closed) Open Item (373/83-42-08(DPRP)): This open item is duplicated by open item 373/83-49-08(DPRP).

(Closed) Noncompliance (374/83-39-01(DE)): This was a no response item of noncompliance.

(Open) Open Item (373/83-53-06(DPRP)): This open item tracked licensee corrective actions for an identified cracking problem on diesel fire pump flywheels. The licensee is currently performing a quarterly visual inspection of the flywheels on the two installed pumps; however, the licensee's material analysis department now believes that the cracks are propogating from casting irregularities in an area not accessible to visual examination. The licensee is reviewing their existing inspection requirements in light of this new information.

(Closed) Open Items (373/83-42-04(DPRP) and 373/83-42-05(DPRP)): These open items tracked licensee receipt of a NAMCO evaluation of failed limit switches as committed to in Licensee Event Report (LER) 373/83-71. The report, dated January 26, 1984, and received on site on March 29, 1984, was inconclusive as to switch failure mode. It did, however, suggest that the failure may have been caused by prolonged exposure to excessive temperatures.

(Closed) Noncompliance (373/83-44-02(DE)): This item documented a failure on the part of the licensee to take prompt measures to ensure the quality of breathing air relied upon by fire protection personnel. The licensee has restored the air compressor CO monitor to service and has implemented procedures for compensatory actions for future failures of the monitor.

(Closed) Noncompliance (373/83-44-09(DE) and 374/83-48-10(DE)) and Open Item (373/83-44-10(DE)): These items documented shortcomings in the installation of fire detection systems with respect to number, location and effects of ventilation on detectors. On March 9, 1984 the licensee submitted a report resulting from an analysis of the LaSalle fire detection systems performed by an independent contractor. The report concluded that while changes are necessary and will be made to improve system performance, the currently installed system is adequate.

(Closed) Noncompliance (374/83-11-01(DE), 374/83-18-01(DE)) and Unresolved Item (374/83-22-01(DE)): These items documented inspector concerns in the area of cable separation. These concerns were discussed during a meeting between the NRC staff and the licensee in Bethesda, Maryland in November 1983. As a result of these discussions, certain commitments were made by the licensee and certain actions were required by the staff. These items are discussed in Section 7 of Supplement 7 to NUREG-0519 and were incorporated as conditions to the Unit 2 Operating License NPF-18.

(Closed) Open Item (373/83-14-03(DPRP)): This open item tracked licensee preparation of procedures for Turbine Control Valve Fast Closure - Recirculation Pump Trip response time testing and Recirculation Pump Breaker Arc Suppression response time testing. These procedures, LIS-RP-05 and LIS-RR-05, have been prepared and are in place.

(Closed) Unresolved Item (374/83-36-02(DE)): This item documented missing documentation for the release of electrical panels which had been put on hold due to installation orientation deficiencies. The missing documentation was located. The licensee had a reinspection of panel orientation performed by quality control personnel to verify conformance with plant drawings. The inspector reviewed both the recovered documents and reinspection results and found them acceptable.

(Closed) Unresolved Item (374/83-36-05(DE)): This item documented an apparent failure on the part of the licensee to require that quality control inspections performed on certain reactor protection system cabling after the cabling was upgraded to safety grade. A review of documentation relative to this situation revealed that the licensee had identified the failure to perform the required inspections during the system turnover for testing purposes and had the required inspections performed.

(Closed) Noncompliance (374/83-36-03(DE)): This item documented an apparent failure on the part of the licensee to implement Quality Assurance Level I requirements for the installation of certain cables in the Standby Liquid Control System (SBLC). Failure to implement these

requirements resulted in a lack of quality control inspections and violation of electrical separation criteria. On November 14, 1983 a meeting was convened with licensee and NRC staff members to discuss this and related matters. As a result of this meeting, it was concluded that Level I Quality Assurance requirements were not applicable to the cables in question; however, electrical separation requirements were applicable. As documented in IE Inspection Report 374/83-56(DPRP), the licensee has established proper separation of SBLC cables in Unit 2. A commitment to establish proper separation in Unit 1 is being tracked by Open Item (373/81-00-136(DPRP)).

(Open) Noncompliance (374/83-36-01(DE)): This item of noncompliance documented incomplete production test results for the Unit 1 and Unit 2 Division I 125V DC battery chargers. Specifically, no documentation could be located for the performance of dielectric tests demonstrating cable insulation integrity. Two concerns were generated as a result of this item. The first concern related to the technical acceptability of the battery chargers. The second concern was that incomplete documentation of test results was apparently deemed acceptable by the licensee's Architect/Engineer. In response to this item, the licensee performed an engineering review of the incomplete documentation and determined that based on satisfactory charger performance to date the chargers were technically adequate for use. Further, review of the documentation associated with other battery chargers uncovered no documentation deficiencies. These conclusions appear to be valid. The licensee's response to this item did not address concerns over the acceptance of incomplete documentation. This item will remain open pending resolution of this concern.

No items of noncompliance or deviations were identified.

3. Operational Safety Verification

The inspectors observed control room operations, reviewed applicable logs, and conducted discussions with plant operators during the inspection period. 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 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, and that radiation protection controls were being implemented.

a. On March 23, 1984 Amendement No. 1 was issued to the LaSalle Unit 2 Operating License NPF-18. This amendement authorized full power operation of the unit. Additionally, this amendment modified

Condition 2.C(15)(e) to the license to require the licensee to replace approximately 110 feet of four inch pipe feeding the sprinkler system in the cable spreading room with six inch pipe. This modified license condition will be tracked as an open item (374/81-00-59(DPRP)).

b. On March 24 Unit 2 startup testing activities were delayed as a result of chemistry problems discovered during the routine daily sampling program. Conductivity for both reactor water and condensate storage tank water was determined by laboratory analyses to be 2.78 and 17 micromhos respectively. Technical Specifications establish a conductivity limit of 2 micromhos for reactor water with the reactor in the startup mode. The licensee placed all three Reactor Water Cleanup System (RWCU) demineralizers in service and cycled condensate storage tank water through the condensate demineralizers for cleanup. After approximately thirteen hours plant chemistry parameters were within acceptable levels for continuation of startup activities. The chemistry problem was later attributed to the full flow surveillance of the High Pressure Core Spray System. It was assumed that the condensate storage tank was agitated by the surveillance test, mixing stagnated bottom tank water with better quality water in the upper portion of the tank.

c. At 2:00 p.m. on March 26 the licensee restored the Safety Parameter Display System (SPDS) to a fully operational status following an extended period of inoperability for diagnosis and repairs. On March 27 at 1:50 p.m., while performing a surveillance requiring the only operable Auxiliary Electrical Equipment Room Ventilation (VE) train be secured, the temperature in the computer room rose to 81°F, resulting in a trip of the Process Computer and loss of SPDS. SPDS was returned to service at 6:15 p.m. on March 27 following restoration of computer room ventilation. The inspector has on several occasions echoed the concerns of licensee computer personnel by expressing to the licensee his concern that a history of VE malfunctions made the loss of SPDS a reasonably predictable occurrence and with the summer season approaching alternative air conditioning systems should be considered. The licensee has informed the inspector that they will provide an independent air conditioning system for the computer room and identified May 15, 1984 as target date for installation.

d. During a tour of the 2B diesel generator room on March 28, 1984, the inspector noted that the location for adding oil to the 2B diesel generator while it was running was not marked nor were there any posted instructions for adding oil while the diesel was running. This information was provided to the Unit 2 Operating Engineer. Correction of this deficiency will be tracked as an open item (374/84-13-01(DPRP)).

e. At 5:15 p.m. on March 29, 1984 Unit 2 was manually scrammed from approximately 4% power. The scram was performed to complete a test on a modification to the scram discharge volume vent and drain valves. All systems functioned normally following the scram. No Emergency Core Cooling Systems were challenged. Reactor vessel water level was maintained utilizing the Reactor Core Isolation Cooling System (RCIC). This particular scram, while required to complete the noted post modification testing, had not been scheduled for March 29. A flange leak on the discharge of the motordriven feedwater pump made a reactor shutdown advisable. The licensee elected to perform the shutdown by manually scramming the unit.

f. On March 31 the resident inspector witnessed a fire drill which included the participation of the Marseilles Fire Department. The local fire department was provided the opportunity to interface their equipment with the plant's fire suppression system. The systems were compatible. The ingress of the offsite fire trucks and fire fighting personnel into the protected area was conducted in a timely fashion.

No items of noncompliance or deviations were identified.

4. Onsite Followup of Operating Events

a. On March 22 the inspector was notified that power on Unit 1 was reduced from approximately 800 MWE to approximately 485 MWE (45 percent power) and Reactor Recirculating Pump 1B was secured in response to high water level in the pump's cooling coil containment enclosure. The alarm, which uses a level switch to sense level in the enclosure, had been activating intermittently for the preceding 24 hours. The licensee, using annunciator response procedures, had verified that pump bearing temperatures and Reactor Building Closed Cooling Water (RBCCW) flow were normal. Licensee investigation following pump shutdown confirmed zero leakage in the RBCCW piping, and identified that valves 1B33-F051B and 1B33-F052B (Cleanup Suction From 1A Recirculation Loop Upstream and Downstream Drain Stop Valves) were shut but not tightly torqued. This permitted steam to enter a common drain header with the drain line from the 1B pump cooling coil containment enclosure, then condensing and activating the level switch. Tightly torquing the valves eliminated further alarms and the licensee returned to two loop operation. The inspector monitored the licensee's compliance with Technical Specifications 3.4.1.1 as modified by Amendment No. 11 to the Unit 1 Facility Operating License, which permits and specifies provisions for single loop operation, and 3.6.6.2, which specifies time limits for reestablishing drywell oxygen concentration following deinerting.

b. On March 27 Unit 1 Division 2 of the Reactor Building Ventilation System (VR) experienced an automatic isolation during a routine surveillance of the ventilation process radiation monitors. The instrument mechanics performing the surveillance activity had rendered the C radiation monitor inoperable, whereupon the VR system unexpectedly isolated. It was later determined that the D radiation monitor had failed prior to the surveillance activity. When the C radiation monitor was rendered inoperable the additional one-half isolation signal needed for the VR isolation was provided. Failure of the D radiation monitor was attributed to degradation of the monitors trip circuit as a result of component aging.

c. On March 29 the licensee discovered that steam was being exhausted from a ventilation duct located on the 755 ft. elevation of the Unit 2 turbine building. An immediate investigation was conducted of areas within the turbine building where the radwaste ventilation system was taking suction. The investigation revealed that main steam line (MSL) drain valves were in the open position allowing steam to travel through the drain lines to the waste collector tank where it was then vented to the turbine building atmosphere. The valves were immediately closed. No increase in airborne activity was noted.

Continued followup of the event indicated that the drain valves 2B21-F306A, B, C, and D and 2B21-F307A, B, C, and D had been placed in the open position during the performance of procedure LGP 1-S1, "Master Startup Checklist." The procedure required opening of valves for draining of residual condensate from the main steam lines and subsequent closure prior to startup. The procedure provided for a single signoff of the combined activities of opening and closing the referenced valves. This combination appears to have contributed to the breakdown in the administrative control of the valves. The failure to follow procedure LGP 1-S1 in that the main steamline drain valves were not closed prior to startup is considered an example of an item of noncompliance (374/84-13-02(DPRP)).

d. On April 10, 1984 a small smoldering fire was discovered under the insulation on the steam supply line to the Unit 2 "B" Residual Heat Removal (RHR) System heat exchanger. The fire occurred when steam was admitted to the line for the first time and was apparently caused by a minor accumulation of dust and debris under the insulation which began smoldering. The fire was self-extinguishing. On the morning of April 11 the inspector toured the area of the fire. From visual indications, it appeared that the area of the fire was approximately 12 square inches on the top side of the pipe. No damage to any equipment resulted from the fire.

One example of noncompliance was identified. No deviations were identified.

5. Licensee Event Reports Followup

Through direct observations, discussions with licensee personnel, and review of records, the following Event Reports (LER's) 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.

| | |
|---|---|
| 374/84-01 | Spurious Scram Caused by Bumping an Electrical Connector |
| 374/84-04 | Primary and Secondary Containment Isolation Caused by a Blown Fuse |
| 374/84-05 | Failure of the High Pressure Core Spray Pump Breakers to Close |
| 374/84-06 | Reactor Water Cleanup System Isolation |
| 374/84-07 | Reactor Water Cleanup System Isolation |
| 373/84-08 | Spurious Scram Caused by Bumping an Electrical Connector |
| 373/84-09 | Spurious Scram Caused by Bumping an Electrical Connector |
| 373/84-10 | Spurious Scram Caused by Bumping an Electrical Connector |
| 373/84-11 | Scram Resulting From a Loss of Vacuum |
| 373/84-12 | Excessive Containment Isolation Valve Leakage |
| 373/84-13 | Out of Tolerance Steam Flow Switch Setpoints |
| 373/84-14 | Procedure Error in LES-RI-01 |
| 373/84-15 | Inadvertent Group II and IV Containment Isolation |
| 373/84-17 | Failure of Control Room Ventilation Ammonia/Chlorine Detection Systems |

LER 374/84-08 reported on February 29, 1984 a Unit 2 Group 1 primary containment isolation event. The LER contained the required information and was submitted in a timely fashion and is considered closed; however, two items requiring additional NRC and licensee effort were identified in the LER. The first item concerns a failure on the part of the Unit 2 Reactor Operator to followup the isolation by placing the control switches for all of the main steam isolation valves (MSIVs) in the closed position. This was in violation of procedure LOA-MS-02, "Recovery From a Group I Isolation," and as such is an example of an item of noncompliance (374/84-13-02(DPRP)). The second item concerns the fact that the MSIV isolation logic is such that with one set of valves open and the other closed, resetting the isolation signal will allow the originally open valves to reopen. This situation does not appear to be in conformance with NRC requirements for Engineering Safety Feature logic reset as discussed in IE Inspection Reports 374/83-29(DE) and 374/83-39(DE). This matter has been referred to the Region III Division of Engineering and the Office of Nuclear Reactor Regulation (NRR) for resolution and will be tracked as an unresolved item (374/84-13-03(DPRP)). It should be noted that in response to NRC concerns in this area, the licensee on March 30, 1984 placed caution cards on the Group I isolation reset buttons instructing the reactor operator to ensure the MSIV control switches were placed in the closed position before resetting the isolation.

LER 373/84-18 reported the results of an inspection of butt splices in control cables and evidence of insulation/conductor damage due to the use of incorrect insulation stripping tools. The inspection was conducted by the licensee subsequent to NRC receipt of allegations of improper work practices in these areas. The LER was submitted in a timely fashion, contains the required information and is considered closed; however, the report contains several committed-to actions which will be tracked by open items as indicated below:

a. An environmental test is to be performed on the Okonite taping sequence applied over nicks and cuts in conductor insulation (373/84-10-01(DPRP)).

b. Ninety-four switchgear and motor control center and 11 Unit 1 containment penetration butt splices will be reinspected using more stringent inspection criteria. While the report does not specify when these inspections are to be performed, it is expected that they will be performed during the next outage of sufficient duration, plant conditions permitting. It is further expected that the results of these inspections will be reported to the LaSalle Resident Inspector (373/84-10-02(DPRP)).

c. Electrical maintenance and craft procedures will be upgraded to better define craft and quality control responsibilities with respect to conductor butt splicing activities (373/84-10-03(DPRP)).

One example of noncompliance was identified. No deviations were identified.

6. Independent Inspection

a. Generic Letter 83-36 dated November 1, 1983 requested that boiling water reactor licensees submit Technical Specifications or a submittal schedule for NUREG-0737 items scheduled for implementation after December 31, 1981. On February 9, 1984 the licensee submitted information which indicated that no changes to the LaSalle Unit 1 or Unit 2 Technical Specifications were required. This item is closed.

b. On February 21, 1984 the NRC issued an Order Confirming Licensee Commitments on Emergency Response Capability for LaSalle Unit 1. The contents of this order will be tracked by open item as indicated below:

| Open Item No. | Subject | Due Date |
|---|---|---|
| 373/81-00-138 | Submit to the NRC a summary report on the results of the detailed control room design review including implementation schedule. | 11-01-85 |

| | | |
|---|---|---|
| 373/81-00-139 | Implement Regulatory Guide 1.97 requirements for Emergency Response Facilities. | 08-01-86 |
| 373/81-00-140 | Submit a procedures generation package to the NRC for upgraded Emergency Operating Procedures (EOPs). | 09-30-84 |
| 373/81-00-141 | Implement upgraded EOPs | 09-30-85 |

c. Licensee Event Report (LER) 373/83-39 described an event during which a water hammer occurred in the Unit 1 Residual Heat Removal (RHR) steam condensing mode piping. One of the committed-to corrective actions for this event was the installation of a warming valve in the system to allow for a more controlled system warmup. This valve has been installed in Unit 2. A similar modification is planned for Unit 1 during the first refueling outage (Modification M-1-1-82-26). Completion of this modification will be tracked as an open item (373/84-10-04(DPRP)).

d. IE Inspection Report 50-373/83-34(DPRP) documented Region III concerns over the ability of the licensee to control the number of activities in progress associated with initial fuel load and startup of Unit 2 coincident with completion of the Unit 1 startup testing program. In response to these concerns, the licensee, by memorandum dated November 7, 1983, provided a program to Region III structured to ensure that sufficient numbers of personnel would be available to support planned activities and that an independent oversight function would exist to control the number of activities in progress. This program consisted of three parts:

(1) Discussions between station management and operating shift personnel stressing the need to limit the number of activities in progress to that which could be reasonably managed.

(2) Assignment of extra licensed individuals to shift duties as necessary to support ongoing activities.

(3) Assignment of a management individual reporting to the Operating Assistant Superintendent during peak workload periods whose primary responsibility was to monitor control room activities to ensure that sufficient control was maintained.

In the November 7, 1983 memorandum, the licensee committed to continue this program through Unit 2 initial criticality and then to reevaluate the need for the management oversight function.

Region III accepted the licensee's program. Subsequent inspection showed that the program was implemented and was reasonably effective at addressing Region III's concerns.

By memorandum dated March 26, 1984, the licensee informed Region III of their decision to discontinue the management oversight function described above. The basis for this decision was that initial criticality had been achieved in Unit 2 and that it was expected that the control room workload would decrease significantly. Prior to finalizing this decision the licensee discussed their position with representatives of Region III during the weeks of March 12 and 19, 1984. Initially, the Region III position was that the oversight function should be maintained, particularly in light of a number of recent operating events (reference IE Inspection Report 50-373/84-05 (DPRP)). The licensee honored the Region III position.

By memorandum dated February 24, 1984, the licensee provided to Region III a Regulatory Improvement Program. One element of this program was the establishment of an around-the-clock, 7 day a week senior station management shift overview function. The functions of the individual assigned to the overview function included performance of a general overview of plant activities to assess compliance with regulatory requirements and corporate directives and communication to all levels of in-plant personnel of the need for safe operations and compliance with requirements. This function has been verified to be in place.

Upon review of the responsibilities assigned the shift oversight function as defined by the Regulatory Improvement Program and comparison with the responsibilities of the management oversight function as defined in the November 7, 1983 memorandum, Region III concluded that termination of the management oversight function was both reasonable and acceptable. This fact was verbally communicated to the licensee.

e. During the week of April 2, 1984 the licensee was informed by General Electric of a potential defect in the actuating solenoids supplied with Crosby relief valves. Specifically, numerous electric failures had occurred on in-use solenoids at Hanford and Susquehanna. The failures were characterized as earlier than expected electrical degradation.

On April 6 the inspector met with members of the licensee's operating and engineering departments to determine the impact of the potential defect on LaSalle and any planned actions. At this meeting it was disclosed that the failure mechanism was believed to be mechanical damage to the insulation of the solenoid coil wire. It was postulated that the damage occurred during the manufacturing process as the first turns of the solenoid coil wire were wrapped on the coil. With the insulation damaged in such a fashion, the coil wire could become grounded to the coil and result in an electrical fault.

In an effort at determining the potential for such a problem with the solenoids at LaSalle, the licensee performed 500 volt megger checks of all of the spare solenoids in their onsite storeroom and all of the solenoids installed in Unit 2. The acceptance criteria applied was a measured insulation resistance of 2 megohms or greater. Three of fifty-nine solenoids in the storeroom failed the megger checks and were removed from the supply system. None of the solenoids installed in Unit 2 failed the megger checks. Following the performance of checks on the solenoids installed in Unit 2 each solenoid was cycled to ensure that the checks had not damaged the solenoids. Based on this low failure rate and the successful experience with the solenoids in LaSalle Units 1 and 2, the licensee elected not to perform megger checks on the Unit 1 solenoids immediately. The necessity for performing such checks is still under evaluation. This position is acceptable.

No items of noncompliance or deviations were identified.

7. Review of Periodic and Special Reports

a. The inspector reviewed the following required reports and verified that the reports were submitted in a timely fashion and contained the required information:

(1) Special Report on Area Low Temperatures submitted February 8, 1984

(2) LaSalle Unit 1 Monthly Operating Reoort dated March 9, 1984

(3) LaSalle Unit 1 Annual Operation Report dated February 27, 1984

(4) LaSalle Radiation Exposure Report dated February 23, 1984

b. The inspector reviewed Supplement No. 8 to NUREG-0519, "Safety Evaluation Report Related to the Operation of LaSalle County Station Units 1 and 2." As a result of this review, the following action items were identified which will be tracked by open items as indicated:

(1) The licensee will specify an augmented Inservice Inspection Program for 14 primary system welds which were not treated as part of the Induction Heating Stress Improvement (IHSI) program (374/81-00-59(DPRP)).

(2) The licensee will review the feasibility of conducting an IHSI program on Unit 1 prior to startup following the first refueling outage (373/81-00-142(DPRP)).

(3) A refueling outage surveillance will be implemented which will require the performance of a shutoff head test on each service water pump. As a minimum, two service water pumps will be verified to be within acceptable limits of the manufacturer's supplied performance curves. Vibration readings will be taken on the acceptable pumps at operating flow for future reference and analysis (373/81-00-143(DPRP)).

(4) Procedural requirements will be implemented requiring the following actions if both diesel fire pumps become inoperable (373/81-00-144(DPRP)).

(a) Two acceptable service water pumps will be verified to be available as a backup fire water supply by reference to refueling outage surveillance shutoff head and vibration data.

(b) Vibration readings on the service water pumps that are identified as acceptable for fire protection will be verified at operating flows within 96 hours.

(c) Should only one acceptable service water pump be available, two additional fire patrols will be placed in the plant.

(d) If no acceptable service water pumps are available, LaSalle Units 1 and 2 will be shutdown within 24 hours. This requirement is interpreted to mean, with the concurrence of NRR, that upon recognition that both fire pumps are inoperable and that service water backup capability is not available, within 24 hours either a fire pump will be restored to service, service water backup capability will be established with at least one service water pump, or an alternate, acceptable backup capability will be established. If fire water suppression capability is not established within 24 hours, both units will be placed in at least the startup mode within the next 6 hours, at least the hot shutdown mode within the following 6 hours, and at least the cold shutdown mode within the subsequent 24 hours.

No items of noncompliance or deviations were identified.

8. Startup Test Witnessing

a. On April 4, 1984 the inspector witnessed portions of the Unit 2 RCIC Startup Test STP-14. The testing witnessed included a hot quick start of the RCIC system followed by 10% step changes in flow. All testing witnessed was performed in accordance with approved procedures. The Test Engineer was knowledgeable in RCIC system operation and testing requirements.

b. On April 9, 1984 the inspector witnessed a Unit 2 RCIC cold quick start and injection into the reactor vessel performed in accordance with STP-14. Preliminary results indicated that the applicable acceptance criteria were met.

No items of noncompliance or deviations were identified.

9. Maintenance

During the performance of the Control Room Heating, Ventilating, and Air Conditioning (HVAC) Functional Test on March 27, 1984, the licensee discovered that one "A" train ammonia detector would not initiate the recirculation mode of the Control Room HVAC system through the charcoal filters. Immediate investigation revealed that the cause of the problem was an improperly landed lead which, while not affecting detector operation, did prevent the detector from actuating the emergency mode of Control Room HVAC.

Subsequent investigation revealed that the lead was improperly landed on March 10, 1984 during system restoration following maintenance. The inspector reviewed the work documentation associated with the maintenance, talked to several personnel associated with the maintenance, and determined the following:

a. At the time the maintenance was performed, drawings were not available showing the detailed wiring configuration of the ammonia detector assembly.

b. The leads going to the ammonia detector assembly were not conspicuously identified.

c. There was no participation or inspection of the maintenance activities by the assigned foreman.

d. There was no post-maintenance quality control inspection of the work performed.

e. The workers performing the maintenance did not understand the requirements for independent verification of lifted and relanded leads with the result that, in the absence of foreman and quality control oversight, no second check of the maintenance activity was performed.

f. The specification of required post-maintenance testing was extremely vague. The post-maintenance testing performed was predicated on the assumption that in-process and post-maintenance verifications had been properly performed.

It was concluded by the inspector that the wiring error which rendered the Control Room HVAC system unresponsive to the "A" train ammonia detector was a personnel error compounded by multiple failures of required oversight functions.

Technical Specification 3.3.7.8 requires that two independent ammonia detection subsystems, each with two ammonia detectors be operable at all times and capable of initiating the recirculation mode of the Control Room HVAC system. With one ammonia detector inoperable this specification allows for continued operation for up to seven days

followed by placing the Control Room HVAC system in the recirculation mode. During the period March 10 through March 27, 1984, one ammonia detector was incapable of initiating the required Control Room HVAC mode; thus, the action required by Technical Specification 3.3.7.8 were violated for approximately ten days.

In evaluating this event for potential enforcement action, the following factors were considered:

a. The purpose of the ammonia detectors and the ventilation system mode change is to protect plant operators from an ammonia release in the vicinity of the site, not accident prevention or mitigation. Thus, the violation is of minor safety significance.

b. The HVAC mode change function was not rendered inoperable. Sufficient operable ammonia detectors as well as manual initiation capability remained to effect the required mode change.

c. The violation was identified, promptly reported, and promptly corrected by the licensee.

d. The corrective actions taken by the licensee were appropriate for the circumstances and reflect the effective implementation of the recently submitted Commonwealth Edison Regulatory Improvement Program, including classification of the event as potentially significant and obtaining corporate involvement and consideration of disciplinary action.

e. Because of the nature of the wiring error, there were no indications that the affected system had been degraded.

Because of the minor safety significance of the event and the prompt corrective actions taken by the licensee, no Notice of Violation will be issued for this event; however, several significant weaknesses were identified during the investigation of the circumstances leading to this event. These weaknesses must be addressed by the licensee. Actions taken will be tracked as an open item (373/84-10-07(DPRP)). These weaknesses were:

a. Lack of specificity in post-maintenance testing. The post-maintenance testing requirements as specified on the work request for the repair of the ammonia detector could reasonably be interpreted to be quite extensive. In fact, limited testing was performed and tha+ testing was predicated on assumed satisfactory implementation of verification requirements.

b. Lack of documentation of post-maintenance testing performed. The actual testing performed following maintenance on the ammonia detector was documented only by signature on the work request. No description of the testing itself or the results obtained was documented. The licensee should include this type of information for all post maintenance testing.

c. Lack of foreman oversight and work completion verification. Licensee procedures for work request processing imply that the assigned foreman will review the completed work to ensure that it is satisfactory and that this review is in addition to paperwork review.

d. Lack of Quality Control review of completed work. Licensee procedures for work request processing imply that Quality Control will review both documentation and completed work as to satisfactory completion of the work and other quality requirements. In discussions with the Quality Control Supervisor on April 5, 1984, it was identified that a review of completed work for safety-related, code, or reliability-related work was not always performed. One of the reasons for this lack of followup was that the post-maintenance equipment status was not consistently conducive to such inspections; however, a review of Figure 8 of Attachment A to the Station Quality Assurance Manual, "Station Work Request Flow-Chart," shows that Quality Control is to review work for completion prior to the clearance of any out of service cards and prior to the performance of any operating tests. The clear implication is that Quality Control review of work performed is to take place prior to final system restoration for operation and/or testing and under conditions in which maintenance was performed. Thus there is no reason that post-maintenance equipment status should not be such as to allow inspection. The licensee should review both work group and quality control practices to ensure that adequate post-maintenance inspections are performed.

No items of noncompliance or deviations were identified.

10. IE Bulletin Followup

For the IE bulletins listed below, the inspector verified that the written response was within the time period stated in the bulletin, that the written response included the information required to be reported, that the written response included adequate corrective action commitments based on information presentation in the bulletin and the licensee's response, that licensee management forwarded copies of the written response to the appropriate onsite management representatives, that information discussed in the licensee's written response was accurate, and that corrective action taken by the licensee was as described in the written response.

373/83-08 Electrical Circuit Breakers With An Undervoltage Trip Feature In Use In Safety-Related Applications Other Than The Reactor Trip System

374/83-08 Electrical Circuit Breakers With An Undervoltage Trip Feature In Use In Safety-Related Applications Other Than The Reactor Trip System

No items of noncompliance or deviations were identified.

11. Procedures

During the inspection period the inspector reviewed LaSalle Administrative Procedure LAP 1300-1, "Work Requests," Revision 19, December 8, 1983, for technical adequacy and incorporation of quality assurance requirements. The following observations were made:

a. Step E.1 states that, "Troubleshooting is defined as craft capability or routine maintenance." Quality Procedure Q.P. No. 3-52, "Design Control For Plant Operations," of the licensee's Quality Assurance Procedures Manual defines routine as, "Routine type maintenance as used in the Quality Procedure means work of a simple nature that can be accomplished by craft capability with guidance stated on the work request. Work, if not performed correctly, that could have impact on safety or plant reliability, shall not be designated as routine." The clear inference is that non-specific troubleshooting work requests as defined should not be used if safety or reliability considerations are involved. Based on the event described in Paragraph 9 above, this guidance is not being uniformly applied. It is not the intent of the inspector to imply that non-specific troubleshooting on safety or reliability related equipment be prohibited. Rather, the concern is that if such troubleshooting is to be performed, the nature and scope of such work should be clearly defined in advance.

b. Step F.2.C of LAP 1300-1 states that the Shift Engineer is responsible for identifying on the work request any in-process or post-maintenance testing. QP 3-52 assigns this responsibility to the Operating Assistant Superintendent or the Operating Engineer. This discrepancy would be acceptable if LAP 1300-1 specifically required the Operating Engineer or Assistant Superintendent to review and concur in Shift Engineer-specified testing. No such requirement exists.

c. Step 30.c of LAP 1300-1 assigns responsibility for work request preparation and processing for requests for work originating outside the station to the Technical Staff Supervisor. QP 3-52 assigns responsibility for these activities to the Operating Engineer or Assistant Superintendent.

d. Step F.37.j of LAP 1300-1 relating to Quality Control release of troubleshooting-type work states in part that, "QC will inspect the work or documentation and sign the 'QC Release' block." This is contrary to the requirements of Q.P. 3-52 which requires that Quality Control inspect the work performed and the documentation for satisfactory completion. Originally this discrepancy was considered to be an item of noncompliance. Based on the fact that the licensee agreed to revise LAP 1300-1, Step F.37.j to bring it into conformance with Q.P. 3-52, no citation will be issued. Revision of LAP 1300-1 will be tracked as an open item (373/84-10-05(DPRP)).

Items a, b, and c above will be tracked as an unresolved item (373/84-10-06(DPRP)).

No items of noncompliance or deviations are identified.

12. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. Unresolved items disclosed during the inspection are discussed in Paragraphs 5 and 11.

13. 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 Paragraphs 3, 5, 6, 7, 9, and 11.

14. 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.