U.S. NUCLEAR REGULATORY COMMISSION

REGION III

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Report Nos:	50-373/97018(DRS); 50-374/97018(DRS
Licensee:	Commonwealth Edison Company
Facility:	LaSalle County Station, Units 1 and 2
Location:	2601 N. 21st Road Marseilles, N. 61341
Dates:	October 24 through December 18, 1907
Inspector:	Eric Duncan, Reactor Engineer
Approved by:	 V. Patricia Lougheed, Acting Chief Lead Engineers Branch Division of Reactor Safety

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EXECUTIVE SUMMARY

LaSalle County Station, Units 1 and 2 NRC Inspection Report 50-373/97018(DRS); 50-374/97018(DRS)

Engineering

- Overall, operability evaluations provided the necessary technical justification to support the conclusions reached. However, one exception regarding the initial operability evaluation of a potential diesel generator cooling water piping waterhammer was noted (Section E1.1).
- The licensee's implementation of the Restart Project Management Program did not review some engineering requests. In addition, a lack of attention to detail was noted, including failure to identify and schedule two items required for restart (Section E2.1).
- Although some administrative weaknesses were identified, the Engineering Assurance Group (EAG) thoroughly and critically reviewed operability evaluations completed at the station. In addition, EAG mentoring of engineering personnel was effective and EAG monthly performance indicators were an effective method to track and trend overall engineering product quality (Section E7.1).
- The C.11, "Engineering Requests," performance indicator was inaccurate and established goals for this indicator were not useful. In addition, the C.12, "Engineering Requests Overdue," performance indicator had limited value since engineering requests extended prior to becoming overdue were not identified and the extension of engineering request due dates was not a controlled process. Corrective actions planned to address these issues appeared appropriate (Section E7.2).
- The licensee's corrective actions to address a failure to design traversing incore probe (TIP) system containment isolation valves to fully close and not re-open upon receipt of a primary containment isolation signal appeared appropriate. Enforcement discretion was granted for a design control violation (Section E8.2).
- The licensee's corrective actions to address a failure to adequately perform containment isolation valve surveillance testing for the TIP system were complete. Enforcement discretion was granted for a technical specification violation (Section E8.3).
- The licensee's corrective actic is to address a problem regarding a source range monitor detector retract permit setpoint lower than that required by technical specifications were acceptable. Enforcement discretion was granted for this technical specification violation (Section E8.4).

Report Details

Exercise of Enforcement Discretion

Violations described in Sections E8.2, E8.3, and E8.4 of this report are based upon licensee activities which were identified after, but occurred prior to, the licensee announcing, in December 1996, an extended shutdown of the LaSalle County Station. These violations satisfy the appropriate criteria in Section VII.B.2, "Violations Identified During Extended Shutdowns or Work Stoppages," of the "General Statement of Policy and Procedures for NRC Enforcement Actions," (Enforcement Policy), NUREG-1600, and Notices of Violation are not being issued for these violations because the criteria specified in Section VII.B.2 were met, which allows enforcement discretion to be applied. Specifically, in reference to the violations, enforcement action was not considered necessary to achieve remedial action, the violations would not be categorized at Severity Level I, and the violations were not willful. In addition, actions specified in Confirmatory Action Letter RIII-96-008B effectively prevent the licensee from starting up LaSalle County Station without NRC approval.

III. Engineering

E1 Conduct of Engineering

E1.1 Operability Evaluation (OE) Review

a. Inspectir ~ Scope

The inspector reviewed the following selected operability evaluations performed during September and October 1997:

•	OE-97113	Service Water Pipe 1WS26-20 Leakage
•	OE-97031	Waterhammer in Diesel Generator (DG) Cooling Water Piping
•	OE-97118	1A Residual Heat Removal (RHR) Flow Orifice Out of Tolerance
•	OE-97120	1A DG Frequency Meter Potential Inaccuracies
•	OE-97123	Inaccurate Lake Blowdown Valve Position
•	OE-97007	Core Standby Cooling System Pipe Wall Thinning
•	OE-97125	Neutron Monitoring System Cable Routing Discrepancy
•	OE-97122	1A RHR Service Water Orifice Diameter Found Undersized

Observations and Findings

Ovarall, the inspector concluded that the quality of the operability evaluations reviewed was good in that the evaluations provided sufficient technical details to clearly justify the final conclusions on equipment operability. However, the following deficiencies were identified:

 The inspector noted that the initial operability evaluation (Attachment B) associated with OE-97031 stated that based, on past historical data, a waterhammer of the DG cooling water piping was not a credible event. The inspector determined that this statement was not technically justifiable since the historical data was not based on design DG room temperature and design lake level. However, since the final operability evaluation (Attachment C) included these factors and provided the necessary technical justification to demonstrate the continued operability of the system, the safety significance of the issue was minimal.

The inspector noted that OE-97120 for the 1A DG frequency meter contained an inaccurate reference to the technical specification (TS) allowable frequency span. However, the correct span was identified in other sections of the evaluation. The inspector concluded that although this error was minor, it indicated a lack of attention to detail.

c. Conclusions

The inspector concluded that, overall, the quality of operability evaluations reviewed provided the necessary technical justification to support the conclusions reached. However, one exception regarding the initial operability evaluation for a DG cooling water piping waterhammer issue was noted.

E1.2 Relief Valve Modification Review

a. Inspection Scope

The inspector reviewed Problem Identification Form (PIF) L1997-07398 regarding design changes to address Generic Letter (GL) 96-06, "Assurance of Equipment Operability and Containment Integrity During Design-Basis Accident Conditions."

b. Observations and Findings

As discussed in PIF L1997-07398, the licensee identified that Design Change Packages (DCPs) 9700335, 9700336, 9700339, and 9700341 to install relief valves for containment penetrations to address GL 9€ 06 concerns did not require isolation valves in the relief valve discharge path to be locked open as required by ASME Section III, Article NC-7000, "Protection Against Overpressure," Paragraph NC-7153, "Provisions When Stop Valves Are Used."

The inspector reviewed this PIF as well as ASME Section III, Paragraph NC-7153, and questioned whether locking open the isolation valves in the relief path was acceptable. The licensee reviewed the inspector's concern and subsequently initiated PIF L1997-07546 to identify that locking open valves in the relief valve discharge path did not appear to meet the requirements of ASME Section III.

As part of its immediate corrective actions, the licensee revised all four DCPs to remove the isolation valves from the design. However, upon further discussion with licensee management, the inspector was informed that although the isolation valves would be removed from the design, locking open the isolation valves in the relief valve discharge path met the requirements of ASME Section III.

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This is an Inspection Follow up Item (50-373/97018-01; 50-374/97018-01) pending further NRC review.

c. <u>Conclusions</u>

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The inspector identified concerns regarding the locking open of isolation valves in the discharge path of relief valves.

E2 Engineering Support of Facilities and Equipment

E2.1 Restart Project Management Program Review

a. Inspection Scope

The inspector reviewed the licensee's Restart Project Management Program. In particular, the inspector reviewed the licensee's implementation of the restart scope screening criteria which were used to identify items that required resolution prior to restart.

b. Observations and Findings

The inspector determined that following the identification and prioritization of issues by the Systems Independent Review Group (SIRG) as part of the system functional performance review (SFPR) process, the licensee performed an independent review of the restart issues identified to determine the proper corrective action and schedule for implementation. This was accomplished using a Restart Scope Decision Tree with criteria similar to what was used by the SFPR process to prioritize resolution of identified issues. The inspector reviewed the licensee's restart list for DCPs and engineering requests (ERs) against the restart items identified and approved by the SIRG. Overall, the inspector determined that the vast majority of the DCPs and ERs identified as restart-required by the SIRG had been similarly categorized by licensee management using the Restart Scope Decision Tree process. However, there were some exceptions, as discussed below.

The inspector reviewed 9 of the 16 ERs coded as restart-required, but re-categorized by licensee management. In addition, the inspector evaluated 7 of the 29 DCPs which were coded as restart-required by SIRG, but re-categorized by licensee management. The following problems were identified:

 The inspector identified that seven ERs were not properly reviewed. Specifically, although these items had been re-classified from restart-required to post-restart. the decision process outlined in the Restart Project Management Program was not utilized. The licensee reviewed the seven ERs and concluded that none of the items were required to be completed prior to re-start. At the end of the inspection, the licensee planned to document the review of the ERs identified above in accordance with the management review process and determine if additional ERs had been inadvertently deferred without a proper management review. The inspector reviewed the ERs and did not identify any concerns regarding their deferral.

- The inspector identified that ER 9702838 was not properly scheduled. Specifically, although the ER was identified as restart-required, the electronic work control system (EWCS) did not code the ER as re-start required and established a due date of April 28, 1998; currently after the planned Unit 1 restart.
- The inspector identified that ER 9702182 regarding an evaluation of LaSalle Electrical Surveillance (LES) PC-103 was mis-coded as a procedure revision vice an engineering evaluation item, and had not been addressed as a restart item.
- The inspector identified that ER 970220 to add piping supports to the instrument air system was described in the ER title as "Evaluate Pipe Supports to Approve Abandon in Place." Subsequently, the inspector determined that originally the ER was written to evaluate the abandonment of the subject supports, until further analysis identified that the supports not only were required, but were not sufficient as currently designed and installed. In addition, since neither a new ER nor title revision was written to describe the new scope of work, the scope of the ER was inaccurately described.
- The inspector identified one instance where the disposition checklist used as part of the restart scope screening criteria was not correctly completed. Specifically, the inspector identified one case where an issue was classified as a plant challenge although it was actually a plant enhancement.
- The inspector reviewed the deferral of a DCP to replace crankcase pressure gauges on the Unit 0, 1A, and 1B DGs. Although the inspector concluded that the deferral was appropriate, the following problems were identified:
 - One Procedure Change Request (PCR) Error Was Identified

The inspector identified that a PCR to add a caution statement to the 1B and 2B DG high crankcase pressure alarm response procedure was in error. Specifically, PCR LOA-97-152 was written to revise alarm response procedure A-1(2)E22-P301B-W-4 to caution operators to approach the DG crankcase pressure reset button via a walkway out of direct alignment with potential crankcase handhold cover projectile trajectories. However, the inspector identified that, although a reset

button feature existed for the 0, 1A, and 2A DGs, that same feature did not exist for the 1B or 2B DGs. The inspector discussed this concern with licensee personnel who determined that the PCR was in error. Subsequently, the PCR was canceled. 50

One UFSAR Discrepancy Was Identified

The inspector identified that Table 8.3-4, "Tabulation of Diesel-Generator Protoctive and Supervisory Functions," of the Updated Final Safety Analysis Report (UFSAR) did not include the DG high crankcase pressure alarm.

c. Conclusions

The inspector concluded that some ERs were not reviewed in accordance with the Restart Project Management Program as required. In addition, other errors, due to a lack of attention to detail, were noted. These included failure to identify and schedule two items required for restart, inaccurate depiction of work scope, and inadequate review prior to instituting a procedure change request.

E4 Engineering Staff Knowledge and Performance

E4.1 Surveillance Testing Observations

a. Inspection Scope

The inspector observed testing associated with issues identified during SFPRs or to meet TS requirements.

b. Observations and Findings

The inspector observed portions of various tests conducted to address issues identified during the licensee's SFPRs or to meet TS requirements. In particular, the following tests were observed:

- 1A Residual Heat Removal Service Water (RHRSW) Keep-Fill Modification Test
- 1A DG Load and Acceptance Test

Overall, the inspector concluded that testing engineers adequately controlled the testing. However, other deficiencies were noted as discussed below:

Procedure Issue

The inspector noted that during preparation to start the 1A DG for the load and acceptance test, Step E2.1 of LaSalle Operating Procedure (LOP) DG-01, "Preparation for Standby Operation of Diesel Generators," Revision 21, required that the operator

check that the "Engine Ready For Auto Start" light was lit. The inspector identified that the label in the field did not match the procedure label description. The inspector discussed this with the operator who indicated that since the basic description of the switch label was similar to the procedure description, a deviation between the two was acceptable and no further action was necessary. The inspector discussed this issue with licensee management who indicated that their expectation was that a procedure change request would be generated to correct the discrepancy. However, the inspector determined that due to the nature of the discrepancy and the fact that the correct component was conectly identified in the field, the safety significance of the error was minimal.

Material Condition and Housekeeping Issues

The inspector conducted a walkdown of the 1A DG during the course of the DG load and acceptance testing activity. The following material condition and housekeeping discrepancies were identified by the inspector:

- A fire protection system piping support was observed to be unloaded and, as a result, piping weight was supported at other unintended locations. The licensee subsequently performed an engineering evaluation and determined that this condition was acceptable. A PIF was written to correct the problem.
- Safety harnesses were observed to be hanging from the overhead crane trolley over the DG. Upon further review, the licensee determined that the harnesses had been used during recent maintenance activities, but had not been removed.

c. Conclusions

The inspector concluded that the surveillance tests observed were adequately controlled by testing engineers. In addition, the inspector concluded that the material condition of the equipment in the 1A DG room was good with the exceptions noted above.

E7 Quality Assurance in Engineering Activities

E7.1 Review of Engineering Assurance Group Activities

a. Inspection Scope

During this inspection period, the inspector continued the review of the implementation of the Engineering Assurance Group (EAG) function through a detailed review of oversight review records associated with recent operability evaluations, the mentoring conducted with engineering personnel, and EAG monthly performance indicators. In order to accomplish this, the inspector reviewed eight operability evaluations and oversight review records completed in October and November 1997, interviewed EAG reviewers regarding mentoring of engineering personnel and reviewed the EAG quality performance indicators for July through September 1997.

b. Observations and Findings

Background

As a result of the NRC Independent Safety Inspection at Dresden in November 1996, which pointed out weaknesses in the oversight of site engineering activities, EAGs directly reportable to the Site Engineering Manager were established. As discussed in NRC inspection report 50-373/97013; 50-374/97013, the inspector reviewed the licensee's implementation of the EAG function through a review of oversight review records which documented EAG identified deficiencies associated with 10 CFR 50.59 screenings and safety evaluations.

Operability Evaluation Review

The inspector identified one case in which the EAG reviewed an operability evaluation and graded it "N/A" because, according to the reviewer, the operability evaluation was written to address past (not present) operability of a system. The inspector discussed this issue with the EAG program manager who stated that since the operability evaluation was performed to determine reportability and not operability (since the system was already inoperable at the time of discovery of the issue), a review of the issue was outside the scope of the EAG, but had been performed as a courtesy. The inspector discussed this issue with licensee management who subsequently determined that the review of operability evaluations used to support reportability decisions would be added to the EAG charter.

 The inspector noted that for a given operability issue, although the oversight record described the subject of the operability evaluation, the operability evaluation number was not noted on the record. The inspector discussed this issue with the EAG manager who indicated that inclusion of the operability evaluation number on the review record would be a useful enhancement to the review record form and would be incorporated.

Engineering Por anel Mentoring

The inspec Jentified that the EAG charter included provisions for mentoring of engineering personnel. The inspector interviewed EAG reviewers, including the EAG manager, regarding this charter item. The inspector determined that following an EAG review and documentation of findings in the oversight review record, the EAG reviewer discussed identified concerns and potential product improvements with the document preparers to provide mentoring and receive feedback prior to assignment of a final work product grade. In addition, the document preparer's supervisor was provided with a copy of the EAG reviewer's comments and final grade for informational use. The

inspector reviewed this practice and concluded that it was an effective means to mentor engineering personnel. In addition, the inspector interviewed personnel who had prepared documents reviewed by the EAG. These personnel indicated that the mentoring process had been effective and, as a result, the quality of their products had improved. The inspector verified, as discussed below, that engineering product quality performance metrics demonstrated that product quality had improved.

Monthly Quality Performance Indicator Review

In regard to the EAG quality performance indicators, the inspector determined that, in order to monitor performance on a monthly basis, the licensee prepared charts for each of the document-types reviewed by the EAG. These charts indicated the total number of documents reviewed in a month broken down by grade classification. In addition, the performance indicator also captured category results based on the number of satisfactory and unsatisfactory classifications assigned to each oversight review record category. An overall assessment of product improvement based on the data obtained was also contained in the report.

The inspector also determined that in a letter dated August 5, 1997, the licensee established product quality goals for the documents reviewed by the EAG. The goals which existed at the time of the inspection were that greater than 90 percent of the EAG products reviewed would be classified at a grade of "A" or "B," less than 10 percent of the products classified at a grade of "C," and none of the products classified at a grade of "D," or "E."

Overall, the inspector ascertained that, programmatically, the monthly performance indicators established by the licensee were an effective method to track and trend overall product quality. However, the following was noted:

Inconsistent Application of Category Grades Affected Data Trends

As discussed in inspection report 50-373/97013; 50-374/97013, the inspector identified that EAG reviewers inconsistently applied satisfactory and unsatisfactory grades to categories for which enhancements were identified which affected and data trends. As a result, the inspector concluded that the tracking of satisfactory and unsatisfactory grades to trend overall category improvement may be misleading and not accurately represent performance trends.

Data Was Not Compared to Established Goals for Performance Assessment

The inspector determined that although the licensee had established performance goals on August 5, 1997, the September Quality Performance Indicator report did not compare September performance against those gcals. For example, although for August and September, the number of operability evaluations graded at a "C" level exceeded the 10 percent goal established, this was not discussed in the report. Category Grade Goals Did Not Correlate With Oversight Review Record Format

The inspector noted that the licensee had established a goal that no more than 10 percent of the products reviewed by the EAG would be categorized at a "C" grade. However, the inspector identified that the oversight review record form only required that a written grade explanation be provided for "D" and "E" grades. The inspector determined that the goal did not correlate very well with the oversight review record grade explanation requirements.

c. <u>Conclusions</u>

The inspector concluded that although some administrative weaknesses were identified, the EAG thoroughly and critically reviewed operability evaluations completed at the station. In addition, the inspector concluded that the EAG mentoring of engineering personnel was effective. Finally, the inspectors concluded that the monthly performance indicators established by the licensee were being conducted as outlined in the EAG charter and an effective method to track and trend overall engineering product quality, although some problems were identified.

E7.2 Assessment of Performance Indicators

a. Inspection Scope

Commonwealth Edison's March 28, 1997 response to the NRC's request for information pursuant to 10 CFR 50.54(f) delineated performance indicators that would be used to trend and monitor plant performance. During this inspection period, the inspector performed a review of the C.11, "Engineering Requests," and C.12, "Engineering Requests Overdue," performance indicators. The inspector reviewed Nuclear Operating Directive (NOD) OA-39, "Performance Indicators for Nuclear Operations Division," Revision 1, which defined the performance indicators monitored by the licensee. In particular, the C.11, "Engineering Requests," and C.12, "Engineering Requests Overdue," performance indicators for Nuclear Operations Division," Revision 1, which defined the performance indicators monitored by the licensee. In particular, the C.11, "Engineering Requests," and C.12, "Engineering Requests Overdue," performance indicators were reviewed.

Observations and Findings

"Engineering Requests" Performance Indicator Review

The inspector determined that, to develop the C.11, "Engineering Requests," performance indicator, the licensee tracked the number of ERs assigned a priority level of "A" or "B" (ERs tied to plant milestones and significant issues). In addition, on October 8, 1997, the licensee completed a 6-month period of data trending and established a threshold for acceptable performance of 10 percent deviation from the site ER workdown curve.

The inspector reviewed the licensee's implementation of this performance indicator and noted the following:

The Total Number of Open "A" and "B" ERs Was Incorrectly Counted

The inspector determined that the licensee recently identified that "A" and "B" ERs in a "hold" status were inadvertently omitted from the total. As a result, the licensee estimated that an additional 20 to 30 percent of the total number of ERs was inadvertently omitted from the total displayed. At the end of the inspection, the inspector verified that the licensee had corrected this error.

The Total Number of Open ERs Significantly Exceeded Workdown Curve Goals

The inspector determined that although the licensee had established a goal for open ERs of less than 10 percent deviation from the site ER workdown curve, in fact, the number of ERs had increased between August and September and significantly exceeded these goals.

The inspector discussed this issue with licensee personnel who stated that the number of open ERs counted in the performance indicator included both Unit 1 and Unit 2. In addition, the licensee stated that since efforts had been dedicated to the restart of Unit 1, ERs assigned to Unit 2 were not addressed which contributed to an increase rather than a decrease in the total ER backlog. At the end of the inspection, the inspector verified that the licensee had revised the ER workdown curve with more reasonable ER reduction goals.

The inspector determined that, although the licensee had established a performance measure to track the number of "A" and "B" priority ERs open at the end of a given month, the numbers presented were inaccurate. In addition, the inspector optermined that the 10 percent workdown curve deviation threshold was of limited use since the workdown curve was not adjusted to account for Unit 2 ERs. The inspector verified that the licensee had addressed both of these issues by the end of the inspection.

"Engineering Requests Overdue" Performance Indicator Review

The inspector determined that, to develop the C.12, "Engineering Requests Overdue," performance indicator, the licensee tracked the number of overdue ERs at the end of a given month which were assigned a priority level of "A" or "B."

In addition, on October 8, 1997, the licensee completed a 6-month period of data trending and established a threshold for acceptable performance of overdue ERs as five per month.

The inspector reviewed the licensee's implementation of this performance indicator and noted that rescheduled ER due dates were not tracked. The inspector observed that an ER could be extended prior to the due date and the extension then would not be identified by the C.12 performance indicator. In addition, the inspector determined that a large number of individuals, including the individual responsible for closing the ER, could extend the ER due date at any time without supervisory or any other approval.

The inspector discussed this concern with licensee personnel who stated that they planned to establish an ER extension approval process, and remove the ability of all but a few individuals to extend an ER due date.

The inspector determined that the C.12, "Overdue Engineering Requests," performance indicator had limited value since ERs extended prior to becoming overdue were not identified and the extension of ER due dates was not a controlled process. However, the inspector considered the planned corrective actions to be appropriate.

c. Conclusions

The inspector concluded that the C.11, "Engineering Requests," performance indicator was inaccurate and that established goals were not useful. In addition, the inspector concluded that the C.12, "Engineering Requests Overdue," performance indicator had limited value since ERs extended prior to be coming overdue were not identified and the extension of ER due dates was not a controlled process. The inspector also concluded that corrective actions appeared appropriate to address these issues.

E7.3 10 CFR 50.54(f) Letter Commitment Review

a. inspection Scope

The inspector reviewed the status of commitments pertaining to ComEd's March 28, 1997, response to the NRC's request for information pursuant to 10 CFR 50.54(f). Commitment 180, which related to engineering and the corrective action program, was reviewed by the inspector. The commitment number corresponds to that used by the licensee in their March 28, 1997, response.

b. Observations and Findings

<u>Commitment 180</u>: "Performing an independent review of key engineering work products (e.g., operability evaluations, safety evaluations, and root cause analyses) using experienced external engineering personnel as a method to both raise the job performance standards and train LaSalle personnel on how to achieve those standards."

The inspector verified that the licensee's LAG provided an independent review of engine ring work products using experienced engineering personnel. In addition, mentoring had been provided to preparers of reviewed products to raise job performance standards and train LaSalle personnel on how to achieve those standards.

c. Conclusions

The inspector concluded that the licensee had adequately addressed 10 CFR 50.54(f) Commitment 180.

E8 Miscellaneous Engineering Issues

E8.1 (Closed) Licensee Event Report (LER) 50-373/97028-00: Residual Heat Removal System Increased Frequency Surveillance Missed Resulting in Operation Outside of Technical Specification Requirements Due to Personnel Error.

This event was discussed in inspection report 50-373/97011; 50-374/97011. No new issues were revealed by the LER. However, the inspector noted that additional problems regarding the licensee's implementation of the IST program have been identified in a number of recent LERs. In particular, LER 50-373/97019-01 identified six major IST code non-compliance issues which included two required systems not in the program, pump vibration criteria not in compliance with program requirements (11 pumps), emergency core cooling system strainer backwash valves (9) not manually cycle tested, lift-off force testing not performed for vacuum breakers (2 cases), leakrate tests not extrapolated to functional pressures (feedwater check valves), and valves not appropriately stroke-time tested (46 examples).

The licensee identified the root cause of the problems noted above as personnel error. Specifically, the licensee concluded that the documents and procedures that governed the IST program were incorrectly revised when the second 10-year plan was developed due to a misinterpretation of some requirements as well as incorrect assumptions and decisions on other requirements. In addition, a management review of the updated plan failed to detect the deficiencies. At the end of this inspection, corrective actions to address problems with the IST program were still in progress. LER 50-373/96019-01 remains open pending NRC review of these completed corrective actions.

E8.2 (Closed) Unresolved Item 50-373/95002-03; 50-374/95002-03: Traversing Incore Probe (TIP) Containment Isolation Logic Design Deficiencies.

As discussed in inspection report 50-373/95002; 50-374/95002, and LER 50-373/95003-00, the licensee identified that containment isolation valves in the TIP system were outside their design basis. Specifically, under certain system configurations these valves could automatically re-cpen when a Group VII primary containment isolation signal (PCIS) was reset. The LaSalle UFSAR required that PCIS valves would fully close upon receipt of a PCIS signal and not re-open automatically upon reset of the PCIS signal. As an interim measure, the TIP ball valves were taken out of service and closed. If the valves needed to be opened, a temporary alteration of the wiring was performed to defeat the re-opening feature. At the end of the inspection the licensee was performing additional evaluations of this issue and was developing a permanent modification to resolve it. Unresolved item 50-373/95002-03; 50-374/95002-03 was opened pending further review.

During this inspection, the inspector determined that modifications had been installed on Unit 1 and Unit 2 to address this issue. In particular, a modification that provided a sealin logic with a manual push button to reset the isolation signal was completed for Unit 1 on June 25, 1996 and for Unit 2 on October 3, 1996. The inspector verified that the modification had been completed in the field and that post-modification testing had been accomplished. No concerns were identified.

The failure to design the TIP containment isolation valves to fully close and not re-open upon receipt of a PCIS signal was an example where the design basis was not translated into specifications as required by 10 CFR 50, Appendix B, Criterion III, "Design Control," and was a violation. However, because this violation was based upon activities prior to the events leading to the current extended plant shutdown and satisfy the criteria in Section VII.B.2, "Violations Identified During Extended Shutdowns or Work Stoppages," of the Enforcement Policy, a notice of violation is not being issued

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(50-373/97018-02; 50-374/97018-02).

This item is closed.

E8.3 (Closed) LER 50-373/97013-00: Misinterpretation of Technical Specifications Resulted in Failure to Perform the Isolation Valve Surveillance for All Traversing Incore Probes.

As discussed in the subject LER, the licensee identified a concern during a SFPR of the PCIS regarding testing of the Group VII isolation logic system. Specifically, the concern was whether the testing methodology used in LES PC-107(207), "Unit 1(2) Group VII Isolation Logic System Functional Test," met the surveillance requirements of TS 4.3.2.2. TS 4.3.2.2 required a logic system functional test and simulated automatic operation of all channels listed in Table 3.3.2-1 (Isolation Actuation Instrumentation) every 13 months. A logic system functional test, as defined by TSs, required a test of all logic components of a logic circuit, from a sensor up to and including the actuated device, to verify operability. During the review of LES PC-107(207) for the TIP portion of the PCIS Group VII logic, the licensee identified that the surveillance required only one TIP be inserted and withdrawn, which did not satisfy the definition for a logic system functional test since the automatic withdrawal function of the remaining four TIPs were not tested.

The licensee determined that the root cause of this event was a misinterpretation of the TS surveillance requirement regarding TIP system testing. In particular, it was assumed that since all five TIP machines withdraw from the same signal, the testing of one TIP was sufficient to test the logic for all TIPs.

As part of the licensee's immediate corrective actions, LES PC-107(207) was revised to meet the requirements of TS 4.3.2.2. As part of the licensee's long-term corrective actions, in addition to the SFPR reviews which have been completed, a validation of the design basis information contained in the UFSAR was in progress.

The inspector reviewed this event, including the licensee's corrective actions, and have no further concerns. In addition, since the TIP system had a shear valve to close off the guide tube in the unlikely event that a TIP failed to retract, the safety significance of this event was minimal. The failure to conduct testing as required by TS 4.3.2.2 was a violation. However, because this violation was based upon activities prior to the events leading to the current extended plant shutdown and satisfy the criteria in Section VII.B.2, "Violations Identified During Extended Shutdowns or Work Stoppages," of the Enforcement Policy, a notice of violation is not being issued (50-373/97018-03; 50-374/97018-03).

This LER is closed.

E8.4 (Closed) LER 50-373/97011-00: Source Range Monitor (SRM) Detector Retract Permit Enabled Lower Than Allowed by Technical Specifications Due to Non-Conservative Setpoint in an Inadequate Procedure.

As discussed in the subject LER, during a SFPR of the neutron monitoring system, the licensee identified that the calibration procedures for the Unit 1 and Unit 2 SRMs did not set the retract permit setpoint to greater than or equal to 100 counts per second (cps) as required by TS Table 3.3.6-1. Instead, LaSalle Instrument Calibration Procedure (LIS) NR-101(201) used a nominal setpoint of 100 cps plus instrument tolerance which permitted an actual setpoint of as low as 72 cps.

The licensee conducted a root cause investigation and determined that the event was caused by an inadequate review of engineering documents, UFSAR, and TSs during initial licensing.

As part of the licensee's corrective actions, a setpoint determination to establish the proper limits followed by a revision to incorporate the correct retract permit setpoints was planned prior to either unit entering an operational condition requiring SRM detector withdrawal.

The inspector reviewed the licensee's corrective actions and has no further concerns. The inspector also noted that since normal operating procedures directed the operator to initiate SRM detector withdrawal at great than 500 cps, it was unlikely that the operator would retract the detectors at less than 100 cps. Therefore, the inspector concluded that the safety significance of the event was minimal.

The failure to calibrate SRM withdrawal instrumentation in accordance with TS Table 3.3.6-1 was a violation. However, because this violation was based upon activities prior to the events leading to the current extended plant shutdown and satisfy the criteria in Section VII.B.2, "Violations Identified During Extended Shutdowns or Work Stoppages," of the Enforcement Policy, a notice of violation is not being issued (50-373/97018-04; 50-374/97018-04).

This LER is closed.

E8.5 (Open) LER 50-373/97030-00 Containment Integrated Leak Rate Test (ILRT) Error Due to Failure to Track an Issue to Resolution.

As discussed in the subject LER, the licensee identified that Unit 1 and Unit 2 ILRTs had been performed with most of the containment liner weld channel vent plugs installed

since initial pre-operational testing. As a result, the licensee determined that this configuration challenged the channels and plugs as the containment boundary instead of the containment liner welds.

The licensee performed a root cause investigation and determined that the cause of the event was a failure to track, follow up, and resolve a known technical issue. This issue had been previously identified in 1981 in a letter to the NRC. In that letter, the licensee provided information regarding the channel and vent plug configuration. However, although the NRC's response indicated that the ILRT had to be performed with the liner channel plugs removed or an exemption had to be obtained from the NRC, the licensee proceeded with testing as though an exemption had been received. In addition, the test procedure did not provide for the inspection of the channels and plugs prior to ILRT testing, although personnel who wrote the procedure were aware of the configuration.

To address the problems discussed above, the licensee planned the following corrective actions:

- Prior to Unit 1 restart, the licensee would evaluate the channel welds and liner plugs to determine if the design, procurement, and installation satisfied containment pressure boundary requirements.
- Known missing liner channel plugs would be replaced to minimize the effects of corrosion inside the channels.
- LaSalle Technical Surveillance (LTS) 600-3, "Primary Containment Inspection," would be revised to inspect the accessible channels and plugs for deterioration.

Subsequently, the licensee performed the channel weld and liner plug evaluation and concluded that the configuration satisfied containment pressure boundary requirements. That evaluation was forwarded to the Office of Nuclear Reactor Regulation (NRR) for review.

This LER remains open pending the results of NRR's review of the evaluation.

E8.6 (Open) LER 50-373/97019-00: Post Loss of Coulant Accident (LOCA) Hydrogen Analyzers Do Not Monitor to 10 Percent as Stated in the UFSAR Due to Ineffective Design Control.

As discussed in the subject LER, during a SFPR the licensee identified that all four post-LOCA hydrogen analyzers were inoperable due to a failure to comply with the design basis specified in UFSAR Section 7.5.2.2.2.1. In particular, although Regulatory Guide 1.97 required the capability to record hydrogen concentration up to 10 percent, and the UFSAR stated that the primary containment hydrogen concentration could be recorded up to 10 percent hydrogen by volume, the hydrogen analyzers were calibrated using a maximum hydrogen concentration of 4 percent. Therefore, since the containment hydrogen recorded range was limited to the analyzer output range, and the analyzer was only calibrated to 4 percent hydrogen, the recorder was only useful up to 4 percent hydrogen in lieu of the 10 percent required.

The licensee determined that the root cause for the event was ineffective design control. In addition, the licensee determined that as a contributing factor, plant personnel were not aware that using 4 percent hydrogen calibration gas also limited the hydrogen indication accuracy to 4 percent.

To address this issue, the licensee planned the following corrective actions:

- The licensee planned to revise the calibration method for the hydrogen analyzers to require the use of a calibration gas of sufficient concentration to meet UFSAR requirements.
- Technical Specification Table 4.3.7.5-1, "Accident Monitoring Instrumentation Surveillance Requirements," specified the use of a 4 percent hydrogen calibration gas. The licensee planned to revise this table to meet UFSAR requirements.
- The licensee planned to revise affected procedures and drawings to address this issue.

The inspector reviewed this event, including a walkdown of the subject hydrogen analyzers. The inspector concluded that the licensee's planned corrective actions were appropriate. However, during the walkdown, the following material condition and housekseping issues were identified:

Numerous Minor Material Condition Deficiencies Were Noted

Overall, the inspector did not identify any significant material condition deficiencies. However numerous minor deficiencies were noted inside the hydrogen analyzer panels that had not been previously identified by the licensee. These included missing screws, a missing receptacle spring-loaded cover plate, and a welding rod being used as a back panel docr hinge.

Housekeeping Deficiencies Were Noted

The inspector also identified debris in the bottom of the panels such as screws and washers, as well as equipment labels which had not been affixed to identify equipment components. Overall, the labeling of components in the panels was poor. Unauthorized Maintenance Aids Were Identified

The inspector noted that maintenance and calibration instructions were written either on the inside of the panels or on paper kept inside the panels. The inspector concluded that this was a poor practice.

This LER remains open pending the completion, and NRC review of the licensee's corrective actions including the as-found hydrogen analyzer calibration results utilizing appropriate calibration gas.

E8.7 (Closed) LER 50-373/96020-00: Potential Waterhammer Concerns of RHRSW Division 2 Piping.

This issue was discussed in detail in NRC inspection report 50-373/97008; 50-374/97008 for which an apparent violation was identified, and enforcement discretion granted under Section VII.B.6 of the Enforcement Policy. No new issues were revealed by the LER.

This LER is closed.

E8.8 (Closed) Escalated Enforcement Items (EEIs) 50-373/96011-2/3/4/5/6/7/8/9; 50-374/96011-2/3/4/5/6/7/8/9: Apparent Violations Resulting From 2A RHRSW Pump Impeller Replacement

As discussed in inspection report 50-373/96011; 50-374/96011, the inspectors identified that the licensee failed to control and manage a replacement of the 2A RHRSW pump impeller. The inadequate control of this safety-related maintenance activity resulted in the installation of a different size impeller because maintenance personnel failed to machine the impeller to the size specified in the work package. This resulted in altering the hydraulic characteristics of the system and constituted an unauthorized modification. In addition, post-maintenance testing failed to determine if the altered system hydraulic characteristics affected system performance. A properly implemented and evaluated post-maintenance test would have identified the installation error. Lastly, there was a lack of engineering rigor and questioning attitude when the staff failed to question. evaluate, and resolve system performance problems that were the direct result of the increased system flow because of the new impeller. These problems included the failure of a discharge isolation valve and the offscale reading of a flow meter installed in the pump discharge flowpath. As a result, EEIs 50-373/96011-2/3/4/5/6/7/8/9: 50-374/96011-2/3/4/5/6/7/8/9 were opened to track the apparent violations associated with the findings discussed above.

Subsequently, the NRC issued a letter dated September 29, 1997, which granted enforcement discretion for the EEIs identified above. The enforcement discretion was exercised in accordance with Section VII.B.6, "Violations Involving Special Circumstances," of the Enforcement Policy, and as a result, the NRC will not issue a notice of violation or propose a civil penalty in this case.

The decision to apply enforcement discretion was based upon consideration of the following: (1) significant NRC enforcement action (EA 96-325) was imposed for a service water sealant intrusion event for which the licensee's corrective actions encompassed the root causes for these apparent violations, (2) the licensee voluntarily shutdown both units to address wide ranging performance problems that encompassed the causes for the violations, (3) the apparent violations were not willful, (4) the apparent violations were related to activities before the shutdown, (5) the apparent violations would not be classified at a severity level higher than Severity Level II, (6) the actions specified in Confirmatory Action Letter RIII-96-008B effectively prevent the licensee from starting LaSalle County Station without NRC approval, and (7) although the NRC had identified a number of these issues, the NRC has determined that Commonwealth Edison has dedicated significant resources to address the performance issues and improve the LaSalle County Station conduct of operations.

These EEIs are closed.

E8.9 (Closed) EEIs 50-373/96013-8; 50-374/96013-8; 50-373/96018-3; 50-374/96018-3: Inability of Corrective Action Program to Prevent Several 1996 Events

As discussed in inspection reports 50-373/96013; 50-374/96013, and 50-373/96018; 50-374/96018, the inspectors identified several apparent violations which pertained to the failure of licensee corrective actions to prevent several 1996 events that either were known industry problems or had previously occurred at the plant. The ineffective corrective actions resulted in the following deficiencies: (1) failure of a rupture disk for the reactor core isolation cooling system, (2) misaligned 480-volt breakers that could have caused the loss of the normal and emergency power supply for the control room and emergency diesel generator room ventilation systems during a seismic event, (3) suppression pool foreign material control problems that could have resulted in inadequate net positive suction head to the emergency core cooling system pumps, and (4) control switch degradation problems due to hydrocarbons during the manufacturing process and/or the use of cleaning agents containing hydrocarbons.

The NRC issued a letter dated September 29, 1997, which granted enforcement discretion in accordance with Section VII 8.6, "Violations Involving Special Circumstances," of the Enforcement Policy, and as a result, the NRC will not issue a notice of violation or propose a civil penalty in this case.

These EEIs are closed.

E8.10 (Closed) EEIs 50-373/96018-4/5/6: 50-374/97018-4/5/6: 50-373/97003-6/7: 50-374/97003-6/7: Failure to Maintain the Control Room and Auxiliary Electric Equipment Room Ventilation Systems Operable

As discussed in inspection reports 50-373/96018; 50-374/96018, and 50-373/97003; 50-374/97003, the licensee identified that the surveillance testing program and the design change program were inadequate to demonstrate and maintain post-accident operability of the main control room (MCR) and auxiliary electric equipment room (AEER) ventilation systems. The MCR and AEER ventilation systems had not been verified operable since initial plant construction in that the licensee's program failed to routinely verify that these systems had the capability to maintain a positive pressure of 1/8 inch water column and similarly, pre-operational and post-modification testing failed to verify this design parameter. In addition, an inadequate safety evaluation for a 1993 modification, which changed the initiation logic for the MCR and AEER radiation monitoring system, introduced a single failure valuerability and resulted in an unreviewed safety question.

The NRC issued a letter dated September 29, 1997, which granted enforcement discretion in accordance with Section VII.B.6, "Violations Involving Special Circumstances," of the Enforcement Policy, and as a result, the NRC will not issue a notice of violation or propose a civil penalty in this case.

These EEIs are closed.

VI. Management Meeting

X1 Exit Meeting Summary

The inspector presented the results of these inspections to licensee management at an exit meeting on December 12, 1997. The licensee acknowledged the findings presented.

The inspector asked the licensee if any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

PARTIAL LIST OF PERSON3 CONTACTED

ComEd

- W. Subalusky Site Vice President
- G. Poletto Site Engineering Manager
- E. Connell Design Engineering Supervisor
- R. Palmieri System Engineering Supervisor
- W. Eifert Engineering Assurance Group Manager
- P. Barnes Regulatory Assurance Manager
- T. Hammrich Design Engineering
- J. Damron System Engineering
- G. Kats System Engineering

INSPECTION PROCEDURES USED

- IP 37550 Engineering
- IP 37551 Onsite Engineering
- IP 90712 In-Office Review of Written Reports of Nonroutine Events at Power Reactor Facilities
- IP 92700 Onsite Follow-Up of Written Reports of Nonroutine Events at Power Reactor Facilities

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-373/97018-01; 50-374/97018-01 IFI 50-373/97018-03; 50-374/97018-03 NCV Missed TIP Surveillance 50-373/97018-04; 50-374/97018-04 NCV

Use of Isolation Valves in Relief Discharge Path 50-373/97018-02; 50-374/97018-02 NCV TIP Containment Isolation Logic Design Deficiency

Failure to Calibrate SRM Withdrawal Instruments

Closed

50-373/96020-00 50-373/97028-00 50-373/97013-00 50-373/97011-00 50-373/95002-03: 50-374/95002-03		
50-373/96011-02; 50-374/96011-02	EEI	1
50-373/96011-03; 50-374/96011-03 50-373/96011-04; 50-374/96011-04	EEI	
50-373/96011-05; 50-374/96011-05	EEI	
50-373/96011-06; 50-374/96011-06	EEI	1
50-373/96011-(7; 50-374/96011-07 50-373/96011-08; 50-374/96011-08	EEI	
50-373/96011-09; 50-374/96011-09	EEI	
50-373/96013-08; 50-374/96013-08	EEI	
50-373/96018-03; 50-374/96018-03	EEI	
50-373/96018-05; 50-374/97018-05	EEI	
50-373/96018-06; 50-374/97018-06	EEI	
50-373/97003-06; 50-374/97003-06	EEI	
50-3/3/97003-07; 50-374/97003-07	EEI	

RHRSW Division 2 Waterhammer Concerns Missed Increased Frequency RHR Surveillance Missed TIP Surveillance Failure to Calibrate SRM Withdrawal Instruments TIP Containment Isolation Logic Design Deficiency Apparent Violation Resulting From 2A RHRSW Pump Impeller Replacement Apparent Violation Resulting From 2A RHRSW Pump Impeller Replacement Apparent Violation Resulting From 2A RHRSW Pump Impeller Replacement Apparent Violation Resulting From 2A RHRSW Pump Impeller Replacement Apparent Violation Resulting From 2A RHRSW Pump Impeller Replacement Apparent Violation Resulting From 2A RHRSW Pump Impeller Replacement Apparent Violation Resulting From 2A RHRSW Pump Impeller Replacement Apparent Violation Resulting From 2A RHRSW Pump Impeller Replacement Inability of Corrective Action Program to Prevent Several 1996 Events Inability of Corrective Action Program to Prevent Several 1996 Events Failure to Maintain the MCR and AEER Ventilation Systems Operable Failure to Maintain the MCR and AEER Ventilation Systems Operable Failure to Maintain the MCR and AEER Ventilation Systems Operable

Failure to Maintain the MCR and AEER Ventilation Systems Operable

Failure to Maintain the MCR and AEER Ventilation Systems Operable

Discussed

50-373/97030-00 50-373/97019-00

LER Containment .RT Error

LER Post LOCA Hydrogen Analyzers Do Not Monitor to 10 Percent

LIST OF ACRONYMS USED

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AEER	Auxiliary Electric Equipment Room
ANSI	American National Standards Institute
ASME	American Society of Mechanical Engineers
CFR	Code of Federal Regulations
cps	counts per second
DCP	Design Change Package
DG	Diesel Generator
DRS	Division of Reactor Safety
EAG	Engineering Assurance Group
EEI	Escalated Enforcement Item
ER	Engineering Request
EWCS	Electronic Work Control System
IFI	Inspection Follow up Item
ILRT	Integrated Leak Rate Test
IST	Inservice Testing
GL	Generic Letter
LAP	LaSalle Administrative Procedure
LER	Licensee Event Report
LES	LaSalle Electrical Surveillance
LIS	LaSalle Instrument Calibration Procedure
LOA	LaSalle Abnormal Operating Procedure
LOCA	Loss of Coolant Accident
LOP	LaSalle Operating Procedure
LTS	LaSalle Technical Surveillance
MCR	Main Control Room
N/A	Not Applicable
NOD	Nuclear Operating Directive
NRR	Office of Nuclear Reactor Regulation
OE	Operability Evaluation
PCIS	Primary Containment Isolation Signal
PCR	Procedure Change Request
PDR	Public Document Room
PIF	Problem Identification Form
RHR	Residual Heat Removal
RHRSW	Residual Heat Removal Service Water
SFPR	System Functional Performance Review
SIRG	Systems Independent Review Group
SRM	Scurce Range Monitor
TIP	Traversing Incore Probe
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item

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