

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-373/85016(DRS); 50-374/85016(DRS)

Docket No. 50-373; 50-374

License Nos. NPF-11; NPF-18

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

Facility Name: LaSalle County Station, Units 1 and 2

Inspection At: LaSalle Site, Marseilles, IL

Inspection Conducted: May 9; May 13-14; May 20-22; May 24, 1985

Inspectors: P. L. Eng

P.L. Eng
P.R. Wohld

P. R. Wohld

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Date

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Approved By: W. G. Guldmond, Chief
Operational Programs Section

W.G. Guldmond

6-6-85
Date

Inspection Summary

Inspection on May 9; May 13-14; May 20-22, May 24, 1985 (Report No. 50-373/85016(DRS); 50-374/85016(DRS))

Areas Inspected: Routine, announced inspection of licensee action on previously identified inspection findings; inservice testing program; inservice testing administrative procedures; Quality Assurance Department involvement in inservice testing; inservice testing of pumps; pump test data evaluation; inservice testing of valves; testing of normally closed check valves; augmented inservice testing; inservice test records and independent inspection efforts. The inspection involved a total of 121 inspector-hours onsite by two NRC inspectors including 10 inspector-hours onsite during offshifts. In addition, the inspection involved 4 inspector-hours in the Regional Office.

Results: Of the eleven areas inspected, no violations or deviations were identified in ten areas; one violation was identified in the remaining area (failure to implement an inservice testing program in accordance with the ASME Code - Paragraph 6).

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DETAILS

1. Persons Contacted

- * G. J. Diederich, Station Manager
- * J. A. Ahlman, Quality Assurance Engineer
- #* D. S. Berkman, Assistant Superintendent for Technical Services
- #* R. D. Bishop, Services Superintendent
- * G. V. Ford, Technical Staff
- * W. R. Huntington, Assistant Superintendent for Operations
- * W. C. Kirchhoff, Assistant Technical Staff Superintendent
- J. Klika, Surveillance/Procedure Group Leader
- #* P. F. Manning, Technical Staff Supervisor
- * C. E. Sargent, Production Superintendent
- * W. E. Sheldon, Assistant Superintendent for Maintenance
- * D. A. Zoloty, Inservice Inspection Coordinator

* Denotes those attending the exit interview on May 22, 1985.

Denotes those participating in telecon on May 24, 1985.

Additional plant technical and administrative personnel were contacted by the inspector during the course of the inspection.

2. Actions on Previous Inspection Findings

(Closed) Open item (374/83-57-04): Implementation of evaluation program for permanently installed measuring and test equipment (M&TE). The inspector reviewed licensee procedure LAP-1500-3, Revision 11, dated September 19, 1984. The procedure requires that should an instrument which is used in surveillance testing be found out of calibration, all surveillance test data obtained via said instrument be evaluated for validity. The licensee has also generated a matrix which cross references surveillance procedures and instrument numbers.

3. Pump and Valve Inservice Testing Program Implementation

The licensee's pump and valve inservice test program implementation was reviewed to verify compliance with Appendix B of 10 CFR 50; 10 CFR 50.55a(g); and Subsections IWP and IWV of Section XI of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (1980 Edition with addenda through Winter 1980) and included review of administrative and surveillance procedures for inservice testing, review of test results and documentation, and observation of pump performance testing.

The licensee has received interim approval from the Nuclear Regulatory Commission for Code testing exception requests in its first ten year test interval program submittal (per 10 CFR 50.55a(g)) and is implementing this program. The inspectors found that the licensee was conducting pump and valve inservice tests in accordance with the program, using appropriate schedules and approved test procedures. While conducting the inspection, it became apparent that test program instructions and

procedures needed clarification or additional information. This is discussed further in Paragraph 4.

Three additional items requiring clarification are noted below:

- a. While reviewing the relief requests submitted by the licensee, the inspector noted that relief request RV-18 requested relief from Subsection LWV-1300 which does not exist in the 1980 Edition of the Code. The licensee agreed to revise their program to clearly indicate which requirement of the 1980 Code the relief request addresses.
- b. The licensee identified high/low pressure interface valves as containment isolation valves. Discussions with members of the licensee's staff indicated that this categorization was in error and that the leak testing relief request, RV-19, which had been submitted to NRR was not appropriate for the subject valves. The licensee agreed to revise their program to accurately reflect the categorization of these valves and to delete relief request RV-19 for these valves.
- c. The inspectors noted that the licensee had changed maximum stroke times for several valves by marking up the inservice testing program. These changes did not appear to have been transmitted to NRR for review.

Revision of the inservice testing program by the licensee to clarify the above items is considered an open item (373/85016-01(DRS); 374/85016-01(DRS)).

No violations or deviations were identified.

4. Inservice Testing Administrative Procedures

The inspectors reviewed the following LaSalle administrative procedures related to inservice testing and test data evaluation:

ASME Section XI In-Service Testing of Pumps and Valves, LTP-600-4, Revision 0, dated May 3, 1985

LaSalle County Station General Surveillance Program, LAP-100-11, Revision 4, dated February 21, 1985

Trend Analysis Program, LAP-100-12, Revision 4, dated May 3, 1985

The inspectors identified several items which did not appear in any of the licensee's administrative procedures. These are:

- a. Clarification of the proper procedure and analysis required for augmenting inservice testing frequencies, i.e. imposing and deleting increased frequency testing requirements. Criteria for removing the increased frequency testing requirements based on valve stroke time test data were not delineated in any of the above procedures.
- b. Guidance for choosing maximum valve stroke times was not defined.

- c. The method to be used for stroke timing valves was not defined; however, the licensee stated that the method was described in individual test procedures.
- d. The philosophy and acceptance criteria for verifying the forward flow and reverse seating of check valves was not defined.
- e. The method to be used for remote position indicator verification was not defined nor was it delineated in individual test procedures.
- f. The licensee stated that it was their intent to insure that all test data was forwarded to the trending group; however, there exists no procedural provision or requirement to do so.
- g. The licensee has not established a correlation between testing delineated in the inservice testing program and the surveillance procedures. The licensee agreed that a cross reference between equipment required to be tested per the inservice testing program and the LaSalle operating surveillance procedures should be established.
- h. The method to be used when resetting equipment reference values to be used for identifying equipment degradation was not described.
- i. No guidance to be used when performing engineering evaluations to demonstrate equipment acceptability despite degraded performance identified as a result of inservice testing could be found.
- j. The method and inservice testing requirements associated with fail safe testing under the auspices of the inservice testing program were not delineated.

The licensee agreed to incorporate the above recommendations into appropriate procedures. The inspector noted that item c. is addressed in individual surveillance procedures and that revisions to the above listed procedures were planned. Incorporation and implementation of the above recommendations is considered to be an open item pending inspection of the licensee's revised administrative procedures (373/85016-02(DRS); 374/85016-02(DRS)).

The licensee requested copies of internal NRC memoranda which address inspection technique or philosophy regarding the inservice testing program. The inspectors agreed to furnish such material. The subject memoranda are attached to this report.

No violations or deviations were identified.

5. Quality Assurance Department Involvement in Inservice Testing

The inspectors noted that Quality Assurance (QA) audits of the inservice testing program and associated testing had not been performed. Members of the licensee's staff stated that the Quality Assurance Department had performed audits of surveillance testing in general but had not audited the inservice testing program per se. The licensee stated that the

Quality Assurance Department would consider adding points of inspection associated with inservice testing to their audit guidelines.

No violation or deviations were identified.

6. Inservice Testing of Pumps

The inspectors reviewed a sample of surveillance procedures, trending records and test results associated with the inservice testing of pumps. During the review the inspectors noted that the licensee was not performing vibration testing per the method delineated in the Code in that the point which exhibited the maximum vibration amplitude was not compared to a reference value as required by Subsections IWP-4510, IWP-4520 and Table IWP-3100-2. The licensee had submitted a relief request addressing the measurement of vibration which identified an alternate testing technique based on computer trending and past vibration values to determine an Alert and a Required Action Range. The relief request indicated that the IRD General Machinery Severity Chart would be used as an aid. In actuality, the licensee was measuring vibration at several points on each pump and using the highest velocity reading, regardless of from which bearing the data was obtained for trending purposes. Industry practice is to monitor changes in vibration levels at a fixed point over a period of time as opposed to recording the maximum level which may not remain at the same location on the given component. It was not clear to the inspectors nor to members of the licensee's staff that the use of the highest reading, regardless of location, provides a valid means of identifying component degradation.

In addition, the inspectors noted that alternate testing/trending by computer was requested for both Units 1 and 2; however, the licensee had plans to activate the computer vibration measuring system for one unit only.

The inspectors witnessed the performance of LOS-RH-Q1, "RHR and RHR SW Pump Inservice Test for Operational Conditions 1, 2, 3, 4 and 5," during which several deficiencies were identified with vibration measurement techniques and procedures:

- a. Subsection IWP-4160 requires that provision be made to duplicate the position for data measurement for those instruments which are position sensitive. Points to be used for vibration measurements were not consistently marked on the pumps and component diagrams contained in the surveillance procedures. In many cases they were unreadable. This resulted in test personnel choosing points which appeared to be arbitrary. In some cases, vibration was measured in the direction which would be less indicative of vibration level changes, i.e., for vertically supported pumps, measurements were obtained in the vertical direction only.
- b. The method to be used in obtaining vibration data was not clearly described, resulting in different measurement techniques being used by various individuals. The instrument used for obtaining data displayed the vibration levels which fluctuated on a logarithmic scale. During the course of the test, the inspectors noted that one

individual recorded a reading based on average meter deflection while another individual recorded the maximum observed reading.

- c. The instrument used to obtain vibration data was capable of reading either peak or root mean square (RMS) values. The procedure did not address which type of reading was to be taken. The alert and action levels established by the licensee were taken from the IRD General Machinery Severity Chart, as opposed to derived from previous data and were specified in peak values. This places the validity of previous vibration data in question.
- d. Vibration data, although measured and recorded generally within test schedule requirements, were not typically analyzed by licensee staff for equipment degradation indications. The licensee stated that several pumps had been declared inoperable due to high vibration; however, there was no evidence of high vibration in the inservice testing vibration records. Members of the licensee's staff agreed that the use of the highest reading as a trend mechanism is questionable as changes to other bearings may not be identified.
- e. Although vibration readings are part of the surveillance program, the licensee stated that QA had not audited the vibration records.

The inspectors concluded that the licensee had implemented a vibration measurement program which was not in accordance with either the ASME Code nor their alternate testing as submitted to the Commission in relief requests RP-04 for both Units 1 and 2. In addition, the vibration measurement method, test procedures and data analysis techniques would not be an aid in assessing the operational readiness of given components, as required by the ASME Code. Failure to implement a vibration measurement and analysis program in accordance with the Code as required by 10 CFR 50.55a(g), is considered to be violation (373/85016-03(DRS); 374/85016-03(DRS)).

No other violations or deviations were identified.

7. Pump Test Data Evaluation

During the review of pump test procedures, the inspectors noted that the licensee inserted the following note:

"In accordance with ASME Boiler and Pressure Vessel Code, Section XI, 96 hours are allowed to analyze out of acceptable range pump data and take corrective action before declaring the system inoperable."

The inspector informed the licensee of an internal NRC memorandum, attached, which clarifies the relationship between the 96 hour time limit described in the Code and the Limiting Conditions for Operation (LCO's) defined in the Technical Specifications. The memorandum states that Technical Specification action statements apply after equipment is determined to be inoperable as defined in Section XI of the ASME Code. The memorandum also states that as soon as the data is recognized to be within the Required Action Range, the equipment must be declared inoperable.

The licensee acknowledged the inspectors' comment and stated that they had not taken advantage of the apparent provisions of the above note to delay declaring equipment inoperable. They also stated that they would evaluate the NRC's position and clarify their practices regarding interpretation of the 96 hour time limit for inservice test data evaluation and equipment operability determination. This is considered to be an open item pending completion of the licensee's evaluation (373/85016-04(DRS); 374/85016-04(DRS)).

No violations or deviations were identified.

8. Inservice Testing of Valves

The inspectors noted that the licensee did not have a procedure in place to perform safety and relief valve testing as required by Subsection IWV-3510 through IWV-3514, and per the schedule delineated in Table IWV-3510-1 of Section XI. The licensee stated that the first inservice testing of these valves will occur at the first refueling outage for each unit, and that the appropriate procedures will be in place at that time. Approval and implementation of a procedure for the inservice testing of safety and relief valves per the requirements of Section XI is considered to be an open item (373/85016-05(DRS); 374/85016-05(DRS)).

No violations or deviations were identified.

9. Closure Testing of Normally Closed Check Valves

During the course of the inspection, the inspectors inquired as to the methodology used for closure testing of normally closed check valves, and provided a copy of an internal NRC memorandum, attached, on this subject. The licensee stated that closure testing was intended if the valve in question had a safety related function in the closed direction. Since the licensee's inservice testing program does not specifically identify closure test requirements, the licensee agreed to review their program and identify those check valves which have a safety related closure function. The licensee stated that they would generate a cross reference between valves requiring closure testing and the surveillance procedures or other plant requirements which assure valve closure capability. Completion of this review, generation of the cross reference document and subsequent inspection is considered to be an open item (373/85016-06(DRS); 374/85016-06(DRS)).

No violations or deviations were identified.

10. Augmented Inservice Testing

During the inspection, the inspectors inquired as to how the licensee treated those increased frequency testing and/or corrective action requirements resulting from tests which could only be performed at either refueling or cold shutdown. The licensee stated that in most cases, the test is performed such that corrective action can be taken prior to startup; however, if there is not sufficient time, they assumed that the relief granted for regular inservice testing also applied to increased frequency testing. The licensee agreed to review both their test schedules

and their relief requests associated with refueling or cold shutdown testing and clarify their practices regarding such situations. Clarification of the licensee's practice for increased frequency testing of components that can only be tested at refueling or cold shutdown is considered to be an unresolved item (373/85016-07(DRS); 374/85016-07(DRS)).

No violations or deviations were identified.

11. Inservice Test Records

During a review of the inservice testing records, the inspectors noted that several records lacked appropriate signatures, equipment identification numbers and the test dates. In addition, data sheets which were stored in the vault, in many cases, were extremely difficult to read and in one case, impossible to read. The inspector noted that 10 CFR 50.71 (d)(1), delineates reproducibility criteria for records kept in microform. These concerns were discussed with members of the licensee's staff by telecon on May 24, 1985. The licensee stated that the requirements to log in the above mentioned data were implemented during 1984 and did not apply to the records reviewed by the inspector. They also stated that they would evaluate their microform procedures and determine the adequacy of the microform records. The inspector stated that further investigation of the completeness and accuracy of the inservice testing records including the reproducibility of microform records would be reviewed in the near future. Review of the inservice testing records and verification of the licensee's compliance with 10 CFR 50.71 by the inspector is considered to be an open item (373/85016-08(DRS); 374/85016-08(DRS)).

No violations or deviations were identified.

12. Independent Inspection Effort

While discussing surveillance test philosophy in the control room, the inspector observed an individual improperly exiting the control room. The inspector immediately informed the Shift Control Room Engineer who then notified Security. The station security officer subsequently informed the inspector that while not a security violation at the LaSalle County Station, exiting the control room in the manner observed by the inspector was a personnel accountability procedural violation. The individual in question was notified in the presence of his foreman and union steward of station procedure requirements. The individual then stated that it was his understanding that his actions had been correct based on training received. Further investigation revealed that this opinion permeated the plant staff. The station security officer stated that revision of the procedure currently in place occurred in 1982 and that he would insure that all staff and visitors would be made aware of the revised procedure. The inspector referred this matter to the resident inspector and notified the Chief, Safeguards Section, of the NRC Region III staff.

13. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, open items, deviations, or violations. An unresolved item disclosed during the inspection is discussed in Paragraph 10.

14. 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, 4, 7, 8, 9, and 11.

15. Exit Interview

The inspectors met with licensee representatives (denoted in Paragraph 1) on May 22, 1985, to discuss the scope and findings of the inspection. The licensee acknowledged the statements made by the inspectors with respect to items discussed in the report. The inspector also discussed the likely informational content of the inspection report with regard to documents or processes reviewed by the inspectors during the inspection. The licensee did not identify any such documents/ processes as proprietary.

The inspector also discussed the item identified in Paragraph 11 via telecon on May 24, 1985.