# U. S. NUCLEAR REGULATORY COMMISSION

# REGION III

Reports No. 50-373/87024(DRS); 50-374/87024(DRS)

Docket Nos. 50-373; 50-374

Licenses No. NPF-11; No. NPF-18

Licensee: Commonwealth Edison Company P. O. Box 767 Chicago, IL 60690

Facility Name: LaSalle County Station, Units 1 and 2

Inspection At: LaSalle Site, Marseilles, Illinois

Inspection Conducted: August 4-6, 18-19, September 29, 30, and October 1, 1987

Inspectors:

F. Schapker 25

Approved By: D. H. Danielson, Chief Materials and Processes Section

Inspection Summary

Inspection on August 4-6, 18-19, September 29, 30, and October 1, 1987 (Reports No. 50-373/87024(DRS); No. 50-374/87024(DRS)) Areas Inspected: Routine, unannounced safety inspection of licensee actions taken to implement Generic Letter 84-11 (25589); followup on open item (92701) and allegations (99014); and review of training (41400). Results: No violations or deviations were identified.

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### 1. Persons Contacted

#### Commonwealth Edison Company (CECo)

#\*G. Diederich, Station Manager #\*P. Manning, Assistant Superintendent Technical Services #\*R. Bishop, Technical Services Superintendent \*K. Kocinba, Quality Assurance Engineer #\*M. Richter, Technical Staff Engineer T. Hammerich, Technical Staff Supervisor D. Brown, Quality Assurance Superintendent J. Renwick, Production Superintendent R. Smeets, Technical Staff Electrical Engineer D. Zoloty, Technical Staff ISI Coordinator #J. Hill, Technical Staff Mechanical Engineer #D. Enright, Quality Assurance Engineer

# Nuclear Regulatory Commission (NRC)

#M. Jordan, Senior Resident Inspector \*R. Kopriva, Resident Inspector

The inspectors also contacted and interviewed other licensee and contractor personnel.

\*Denotes those in attendance of the exit meeting on August 19, 1987.

#Denotes those in attendance of the final exit meeting on October 1, 1987.

#### 2. Licensee Action on Previous Inspection Findings

(Open) Open Item (374/85-029-01): High Pressure Core Spray (HPCS) return line to condensate storage tank degradation. The licensee's System Materials Analysis Department (SMAD) performed analysis of the damaged piping and determined the failure of the piping was due to microbiological corrosion, primarily of the weld metal. The licensee has consulted with General Electric Company (GE) the system designer and is in the process of developing a system modification or repairing/replacing the affected piping. In the interim the HPCS ability to function in the event of a loss of coolant accident has not been impaired.

The HPCS primary suction source is the condensate storage (CY) tank - normal/standby mode - however, the HPCS takes suction from the suppression pool (NH) in the event that the CY is not available. This item remains open pending further action by the licensee.

# 3. <u>(Closed TI 2515/89) Inspection of Licensee's Action taken to Implement</u> <u>Generic Letter 84-11: Inspection of Boiling Water Reactor Stainless</u> <u>Steel Piping</u>

The purpose of this inspection is to verify that the licensee has performed inspections of stainless steel piping welds susceptible to Intergranular Stress Corrosion Cracking (IGSCC) and in initiated actions in accordance with Generic Letter (GL) 84-11.

#### a. Inspection Program

The NRC inspector reviewed the licensee's ISI records and documentation for LaSalle Units 1 and 2 scheduled outages and confirmed that the reinspection program of piping susceptible to IGSCC including piping equal to or greater over 200°F, which are part of or connected to the reactor coolant pressure boundary out to the second isolation valve were inspected in accordance with Generic Letter 84-11 guidelines.

Unit 1 ISI Ultrasonic examinations (UT) of IGSCC susceptible welds included 33 welds selected as a minimum sample size for welds not previously inspected (four minimum) for each pipe size, in addition 126 welds were UT examined following Induction Heat Stress Improvement (IHSI). As a result of the Post-IHSI UT examinations, two welds exhibited "crack-like" indications. The indications were evaluated by NUTECH as being possible IGSCC. These two welds were evaluated assuming the indications were IGSCC and were found to meet all NRC and ASME Code Criteria for continued operation for an 18 month fuel cycle. Further examination in accordance with GL 84-11 guidelines are planned to evaluate the cracked indications during the next refueling outage.

Unit 2 ISI Ultrasonic examinations of IGSCC susceptible welds included 48 of a total of 129 welds. Included in the sample were 39 welds which were mechanically stress improved to mitigate the susceptibility of the stainless steel piping to IGSCC. The Mechanical Stress Improvement Process (MSIP) has been evaluated by Argonne National Laboratory (ANL) for the NRC as a remedy to mitigate the IGSCC of stainless steel piping in BWR's. Based on ANL's own research work and the data and analysis provided by O'Donnell and Associates, Inc., ANL judged MSIP to be an effective means of improving the residual stress state of piping system weldments and considered its effectiveness in terms of mitigating susceptibility to stress corrosion cracking to be equivalent to IHSI.

The licensee also performs a visual inspection for leakage at design pressure prior to restart at each outage where the containment is deinerted. The NRC inspector reviewed records documenting visual inspection for leakage for the last two outages. The visual examinations were consistent with IWA-5241 and IWA-5242 of the 1980 Edition of Section XI of the ASME Boiler and Pressure Vessel Code.

### b. Competence of UT Examiners

The NRC inspector verified the UT Examiners who performed inspections/evaluations on piping required by GL-84-11 were qualified by formal performance capability demonstration test conducted at the Electric Power Research Institute (EPR1) Nondestructive Examination Center. UT inspectors who are performing as SNT-TC-1A Level I UT examiners work only with or under the direct supervision of Level II or III examiners. Reference NRC Inspection Reports No. 50-373/85035; No. 50-374/85036; and No. 50-374/87002.

# c. Leak Detection and Leakage Limits

LaSalle Technical Specifications specify the following for reactor coolant system leakage and leakage detection systems:

- 3.4.3.1 The following reactor coolant system leakage detection systems shall be operable:
  - a. The primary containment atmosphere particulate radio activity monitoring system.
  - b. The primary containment sump flow monitoring system, and
  - c. Either the primary containment air coolers condensate flow rate monitoring system or the primary containment atmosphere gaseous radio activity monitoring system.

Applicability: Operational Conditions 1, 2, 3.

Action: With only two of the above required leakage detection system operable, operation may continue for up to 30 days provided grab samples of the containment atmosphere are obtained and analyzed at least once per 24 hours when the required gaseous and/or particulate radio active monitoring system is inoperable; otherwise, be in a least HOI SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

- 3.4.3.2 Reactor coolant system leakage shall be limited to:
  - a. No pressure boundary leakage.
  - b. 5 gpm unidentified leakage.
  - c. 25 gpm total leakage averaged over any 24 hour period.

d. 1 gpm leakage at a reactor coolant system pressure at 1000 ±50 psig from any reactor coolant system pressure isolation valve specified in Table 3.4.3.2-1.

GL 84-11 Attachment 1 - Leak Detection and Leakage Limits - Paragraph B states: "Plant shutdown shall be initiated for inspection and corrective action when any leakage detection system indicates, within any period of 24 hours, an increase in rate of unidentified leakage in excess of 2 gpm or its equivalent, whichever occurs first. For sump level monitoring systems with a fixed-measurement internal method, the level shall be monitored at 4-hour intervals or less.

At least one of the leakage measurement instruments associated with each sump shall be operable, and the outage time for inoperable instruments shall be limited to 24 hours or immediately initiate an orderly shutdown."

The licensee took exception to this portion of GL 84-11 in the response to the Generic Letter, based on "An extensive containment leakage system has been installed at LaSalle. It consisted of particulate and noble gas monitors, humidity, hydrogen, and oxygen analyzers, drywell floor drain and equipment sumps with fill-up and pump down rate and level indication. Based on the age of the plant and the IGSCC mitigation efforts, it is felt that present Technical Specification limits adequately monitor leakage and need no revisions."

The NRC inspector informed the licensee that the LaSalle Technical Specifications do not comply with GL 84-11 guidelines, however, the licensee had submitted the above position to GL 84-11 to the NRC in response to the GL. The NRC inspector informed the licensee that this is an unresolved item (373/87024-01; 374/87024-01)) pending further evaluation by the NRC.

4. Allegation Followup

(Closed) Allegation RIII-87-A-0020: This report documents the receipt and followup of allegations made by a former worker at LaSalle. These are summarized as follows:

- a. Undersize Fillet Welds
  - (1) Allegation

Undersize fillet welds were accepted for the Fine Motion Control System. Fillet welds which were required to be 1/4" were only 3/16" but were accepted anyway.

# (2) NRC Review

The NRC inspector reviewed the pertinent drawings (MS-271 and MS-272) and found that there were only six 1" structural fillet welds. The NRC inspector visually examined those welds and found each to be ample in size. Inquiries to MCCo and CECo supervisors and engineers who were responsible for the job disclosed that there had never been a question of meeting size requirements on these welds. However, they recalled questions concerning the 1" fillets on 18 of the 32 socket welds on the 1" and 11" pipes in the Fine Motion Control Rod System. These welds were made in accordance with ANSI B31.1 requirements. Although a small amount of work on the Fine Motion Control System was safety-related, the pipe welding was not. For these reasons, the Nonconformance Report System, which was in place and operating for safety-related work, did not apply to the pipe welding. The interviews revealed that any undersize welds were reinforced as necessary to make their size acceptable and no record of repair was made because the welds were considered to be in-process until turned over to CECo. All 32 socket welds were visually examined by the NRC inspector and found to be of acceptable size. These welds could have been undersize when seen by the alleger and subsequently reinforced to their present size without the need for additional documentation.

# (3) Conclusion

This allegation could not be substantiated. All 1/4" fillet welds in the Fine Motion Control System are now of acceptable size.

# b. Hydro Test Witnessing

## (1) Allegation

A hydrostatic test for an instrument stand on the 761' elevation of the Unit 2 reactor building in the vicinity of column lines B and 17 required the presence of both Morrison (MCCo) quality control and CECo QA/QC, but was run without Morrison QC.

#### (2) NRC Review

The station traveller which included the hydro test in question was examined by the NRC inspector. Presence of a MCCo QC representative at the hydro test is identified as a Hold Point on the traveller. The hydro test operation was identified as Operation 12 of Work Request No. 33572. It was found signed as complete by James L. Shaw, the MCCo QC inspector and by M. Oclon, the CECo representative. The records show no irregularities and the presence of the CECo representative supports this position. One of the principal functions of the CECo representative is to confirm the effectiveness of the MCCo QC representative in monitoring the identified activity.

# (3) Conclusion

This allegation could not be substantiated. The records indicate that a representative of MCCo QC was in attendance at the time of the hydro test.

#### c. Hydro Test Venting

(1) Allegation

The hydro test of b. above, required a vented system, but the test was run without venting.

## (2) NRC Review

The NRC inspector reviewed the test records and procedures pertaining to the hydro test of the instrument stand, and interviewed CECo Q.C. personnel who were present during the test. The hydro test in question was performed on one of four essentially identical systems. Each of the systems has the same type venting and each had the hydro test signed off by both CECo and MCCo QC. The venting operation is specifically addressed in the hydro test procedure and was properly signed off as complete. The appropriate facilities were available, ard all documentation indicates that the system was properly vented.

# (3) Conclusion

This allegation could not be substantiated. All pertinent records and CECo Q.C. personnel indicate that the test was properly vented.

#### d. Installation of Valve with Hold Tag

## (1) Allegation

A relief valve in the Fine Motion Control System may have been installed before a hold tag on the valve was cleared.

## (2) NRC Review

The NRC inspector reviewed the documentation pertaining to the installation of the relief valve in question. Though there are approved procedures in place for installing a valve prior to removing a hold tag, the existing records indicate that the use of these methods was not necessary in the case of the relief valve identified in the allegation. This is a Lonergan Model #LCJ-14, 1/2" x 1" carbon steel relief valve with a set pressure of 1775# and was identified as 2C11-FM-142. It was received by MCCo on February 17, 1987 (Report No. LM 793). The original Certificate of Conformance (COC) from Lonergan was

dated December 10, 1986. It was corrected on February 25, 1987, to show the proper tag number. The final acceptance of MCCO's Receiving Inspection was dated February 26, 1987. That was the day after the COC was corrected. The Material Request on which the valve was ordered out of storage was dated February 27, 1987, or the day after the valve was finally cleared by QC. It appears that the valve was not withdrawn from stock until the paperwork was cleared.

#### (3) Conclusion

This allegation could not be substantiated. The pertinent records indicate that the hold tag was cleared before the valve was removed from stock.

# e. Substitution of Station Construction Standards for AWS D1.1

## (1) Allegation

The station attempted to substitute Station Construction Standards for contractually accepted structural welding acceptance standards (AWS D1.1).

# (2) NRC Review

The NRC inspector reviewed the structural welding acceptance requirements and associated documentation. The standards which the station proposed to be used in place of the AWS D1.1 weld acceptance criteria are alternately known as the Visual Weld Acceptance Criteria or "VWAC." The use of these standards for structural weldments in nuclear power plants was concluded to be acceptable to the NRC as indicated in an August 26, 1985, letter from J. F. Knight, Acting Director, Division of Engineering, NRR, to D. E. Dutton, Chairman of the Nuclear Construction Issues Group (NCIG). That letter also stated that use of the document was valid only if the licensee's commit to the use of VWAC in their SAR. LaSalle's UFSAR, E.4.3.2 states. "Visual Weld Inspection is in accordance with . . . NCIG-01, Revision 2, entitled "Visual Weld Acceptance Criteria for Structural Welding in Nuclear Power Plants." That document is the CECo version of VWAC. CECo instructed, in Field Change Request (FCR) No. L86-713 dated November 25, 1986, that drywell structural steel welds should be examined in accordance with NCIG-01, Revision 2.

The use of the VWAC was approved by both NRC and CECo. Its use was authorized to MCCo through the FCR. The use of VWAC (the standard proposed by the station) was not only acceptable at the time of the subject encounter, it was mandatory. The station's request that MCCo use VWAC rather than AWS D1.1 as acceptance criteria for visual acceptance of structural wolds was both justified and appropriate.

# (3) Conclusion

The allegation was substantiated in that a change of acceptance criteria for structural welds was made. However, the standards proposed by the station were the standards which were applicable to the facility.

# f. Weld Performed on Leaking Pipe Joint

# (1) Allegation

A pipe joint was welded after inspection disclosed water to be leaking from the joint during fit-up inspection.

# (2) NRC Review

The NRC inspector reviewed the documentation associated with this weld joint and interviewed the MCCo Q.C. Supervisor and those responsible for performing the weld. The pipe joint with questionable fit-up inspection is weld Number 21 in the Chillwater System, MCCo Job No. 2828, WR No. L52139, Traveler No. 4. (This is not a safety-related system.) The joint is located between a pipe and a gate valve. The valve is mounted with the flow axis in the horizontal position and the stem is also horizontal. Interviews with those responsible for the installation of this valve disclosed that water was present at the time of original inspection. Three independent estimates of the flow rate ranged from two to 10 drops per minute. However, after an extended period a puddle formed in the enlarged diameters at the center of the valve and water began leaking through the tack-welded joint. This was the condition observed by the alleger.

To correct this condition, the tack-welds were removed and the joint was opened. The water was removed from the joint side of the valve and the inside of the valve near the joint was dried by heating the outside of the valve with a gas torch. When dry, the joint was reassembled, tack-welded, inspected and welded. Fit-up inspection was signed as accepted by MCCo Q.C. in the Weld Data Report. The rate of leakage was reported to be so low that a period of several days was required to fill the depression at the center of the valve to a point at which water might reach the joint.

#### (3) Conclusion

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This allegation was not substantiated. The condition was corrected prior to welding.

# g. Waiver of Inspection

## (1) Allegation

A foreman requested that the MCCo QC Supervisor waive a weld joint fit-up inspection after the inspection disclosed the presence of water in the tack-welded joint.

(2) NRC Review

The joint on which fit-up inspection was waived is the same joint which is discussed in f. above. The NRC inspector interviewed the MCCo Q.C. inspector and inspected the doluments dealing with the installation of the system. The results of the investigation indicate that this fit-up inspection was not waived; it was performed and accepted on the Weld Data Report.

(3) Conclusion

This allegation was not substantiated.

- h. Attitude of LaSalle Station Construction Department Toward Quality
  - (1) Allegation

The attitude of LaSalle Station Construction Department favored speed over quality.

(2) NRC Review

The NRC inspector interviewed CECo personnel responsible for planning and following the work. These interviews indicated support for quality on modifications and disclosed the following objective evidence of Station Construction commitment to quality work.

- (a) A high percentage of personnel on the job during the outage were Q.C. personnel. The high ratio was designed to assure good communication and to prevent delays in detection and reporting of deficiencies.
- (b) Quality control personnel were stationed at the work areas. This limited the number of jobs on which they were applied and reduced time lost in transit when they were needed. It achieved this at a cost of increasing the number of Q.C. personnel necessary to cover the job.
- (c) Sargent and Lundy (S&L) performed an independent analysis of the work in the Alternate Rod Insertion (Modification M-1-2-84-061) and the Primary Containment Vent and Purge System (Modification M-1-2-84-048). The purpose of this analysis was to verify that the jobs were done properly.

S&L made the following statements concerning quality inspections on those modifications:

- 1. ". . . Adequate quality inspections have been integrated into the installation travelers . . ."
- 2. ". . Completed installation travelers included completed signoffs on traveler steps and/or supplemental forms to document the inspections that were performed."
- 3. "The appropriate site organizations are given adequate opportunity . . . to incorporate in-progress verification and hold points as deemed necessary."
- (3) Conclusion

This allegation was not substantiated. All of the cited activities of CECo which reduced inspection performance time did so by increasing the presence of QA personnel to avoid reducing the quality of the work.

### 5. 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 3.

# 6. Exit Meeting

The inspectors met with site representatives (denoted in Persons Contacted Paragraph) at the conclusion of the inspection. The inspectors summarized the scope and findings of the inspection noted in this report. The inspectors also discussed the likely informational content of the inspection report with regard to documents or processes reviewed by the inspector during the inspection. The licensee did not identify any such documents/processes as proprietary.