

U.S. NUCLEAR REGULATORY COMMISSION  
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report No. 50-373/80-25

Docket No. 50-373

License No. CPPR-99

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

Facility Name: LaSalle County Station, Unit 1

Inspection At: LaSalle Site, Marseilles, IL, and Commonwealth Edison  
Company Headquarters, Chicago, IL (June 4)

Inspection Conducted: May 20-23, 27-30, June 3-6 and 10-13, 1980

Inspectors: *J. Streeter for*  
F. Maura (May 20-23, 29-30, June 4, 10-13)

7/23/80

*J. Streeter for*  
L. McGregor

7/23/80

*F. Reimann*  
F. Reimann (May 21-22, June 4)

7/23/80

Approved By: *J. Streeter*  
J. Streeter, Chief  
Nuclear Support Section 1

7/23/80

Inspection Summary

Inspection on May 20-23, 27-30, June 3-6, and 10-13, 1980  
(Report No. 50-373/80-25)

Areas Inspected: Routine, unannounced inspection to review preoperational test program administration; preoperational document control; preoperational test procedures; and previous open items. The inspection involved 236 inspector-hours onsite by three NRC inspectors.

Results: Three items of noncompliance (Infraction-failure to comply with 10 CFR 50 Appendix B, Criterion V - Paragraphs 2, 3.a, 3.b; Infraction -failure to comply with 10 CFR 50, Appendix B, Criterion VI - Paragraphs 3.a, 7.a; Infraction - failure to comply with 10 CFR 50, Appendix B, Criterion XI -Paragraphs 3.a, 5) were identified in the areas inspected.

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## DETAILS

### 1. Persons Contacted

- \*G. Diederich, Operating Assistant Superintendent
- \*E. Spitzner, Assistant Superintendent
- \*R. Bishop, Technical Staff Supervisor
  - D. Decker, OAD Engineer
  - J. Gieseke, Station Construction Coordinator
- \*G. Groth, Station Construction Coordinator
- \*T. Watts, SNED Project Engineer
  - H. Massin, SNED Engineer
  - R. Spencer, G. E. Site Manager

The inspectors also interviewed other licensee employees including members of the technical, operations, construction, quality assurance and SNED staffs, and employees of Foley Electric Company.

\*Denotes those attending the exit interview of June 13, 1980.

### 2. Licensee Action on Previous Inspection findings

(Open) Open Items (373/78-33-01): Comments regarding PT-PC-101 "Integrated Leak Rate Test," Rev. 1. The inspector reviewed Revision 4 to PT-PC-101 and determined that:

- (Closed) The drywell high pressure switches have been included as part of the containment boundary.
- (Closed) The drywell vacuum breaker flanges and shaft seals are being local leak rate tested.
- (Closed) A method has been developed to verify that the inboard MSIV volume has been drained of water prior to local leak rate testing. The licensee indicated all volumes are visually verified to be drained prior to local testing.
- (Closed) A stabilization period of at least 15 minutes has been added to the instructions on the use of the Fisher-Porter flowmeter rig used for local leak rate testing.
- (Closed) Sketches and tables have been added showing containment subvolumes, weighing factors and location of instruments.
- (Closed) Criteria for adjusting weighing factors, in case the instrumentation monitoring a subvolume is lost, has been developed.

- (Closed) The procedure has been changed to include the combustible gas control system as part of the containment boundary during the ILRT.
  - (Closed) The procedure requires that all air tanks inside containment be vented prior to performance of the ILRT.
  - (Closed) Page 6.2-58 of the FSAR was revised so that it is consistent with other sections of the FSAR.
  - (Open) The licensee has not completed the procedure changes required to ensure that the drywell pneumatic air on N<sub>2</sub> bottles manifold are vented during the ILRT.
- (Open) Open Items (373/78-33-02): Additional comments regarding PT-PC-101, "Integrated Leak Rate Test", Rev. 1, which have been referred to IE Headquarters for resolution. The inspector reviewed Revision 4 to PT-PC-101 and determined that:
- (Open) Inboard feedwater isolation valve is not local leak rate tested.
  - (Open) The TIP isolation ball valves are not local leak rate tested.
  - (Open) A discrepancy still exists between the number of penetrations requiring local leak rate testing at the Wm. H. Zimmer Station vs the LaSalle Station.
  - (Closed) The procedure has been changed to exclude the MSIV's from the ILRT by flooding the main steam lines. The FSAR has been revised to exclude the MSIVs from the test.
  - (Closed) The licensee was informed that the ILRT could be performed in less than 24 hours (A minimum of 8 hrs and 20 data points) as long as it conforms with the Bechtel Corporation report BN-TOP-1 and the data shows the leakage rate is not increasing at the end of the selected period.
  - (Closed) The recorded leak rate for the MSIVs include packing leakage.
  - (Open) The licensee now plans to conduct ILRT with weld channel plugs in place. This item remains open pending a decision by NRR on the subject.

(Closed) Open Item (373/80-15-01): Exempting vendor owned equipment from requirements of LSU 400-1. The licensee stated that LSU 400-1 will not be revised to exempt vendors with an approved QA program from the requirements of Section 8 of the procedure. The Startup Manual will continue to require that all test instrumentation be listed in preoperational test procedure data sheets. Therefore, the lack of such data during the performance of PT-PV-101 as noted in IE Report No. 373/80-15 was not in accordance with LSU 400-1, the QA Manual and 10 CFR 50 Appendix B, Criterion V and is considered to be an example of an item of noncompliance of the infraction level (373/80-25-01).

(Closed) Open item (373/80-15-10): Reactor Vessel Turnover Package. The inspector verified that the reactor vessel and internals were turned over for preoperational testing in Supplement No. 2 to turnover package PT-NB-101.

### 3. Review of Turnover Packages

The inspectors reviewed five turnover packages covering the emergency diesel generators, the standby liquid control system, the MSIV - leakage control system, and the feedwater system. The turnover packages were difficult to review because the licensee does not follow the recommended format of LSU 100-3. The amount of information as well as its arrangement varied between packages. It also appears that neither the Test Engineer nor the Test Coordinators are monitoring and correcting the conditions in which some of the packages are received. The following problems were found:

#### a. PT-DG-101A and 101B

- (1) The packages lacked flushing and hydro documentation. A Deficiency Report (PT-DG-101B-202) was generated to cover the items. On February 20, 1980, the DR was closed with a statement that no flushing documentation would be prepared. The licensee stated during the inspection that the systems were air blown and that he will document the air blow. Failure to document the air blow and results achieved is contrary to 10 CFR 50, Appendix B, Criterion XI, QA Manual Q. P. No. 11-1 Section 4.3 and is considered to be an example of an item of noncompliance (373/80-25-02) of the infraction level.

No specific acceptance criteria for cleanliness were used. On May 30, 1980, one set of air start motors failed to work due to dirt in an air valve. The inspector's review of applicable ANSI standards and Regulatory Guides failed to show acceptance criteria for the cleanliness of diesel generators air start systems.

- (2) The following components turned over for preoperational testing were found lacking blue tags (Jurisdictional controls indicating release for preoperational testing) or orange tags (Jurisdictional controls indicating turnover for operation) to designate their new status following a temporary turnover agreement, as required by LSU 100-5, Rev. 1:
- (a) 0 diesel generator pressure switches S 16 and S 21
  - (b) 0 diesel generator starter panels K5 (fuel prime pump) and K-17 (emergency soak backup pump)
  - (c) 1A diesel generator pressure switches S 6, S 16 and S 17
  - (d) 1A diesel generator emergency stop switch (was orange instead of blue tagged)
  - (e) 1B diesel generator engine tachometer
  - (f) 1B diesel generator pressure switch S 10
  - (g) Both the 0 and 1B diesel generators lacked blue tagging prior to their last temporary turnover to construction. A review of both temporary turnovers indicated no blue tags were removed. No tags (blue or orange) could be found on the units to designate their new status.
  - (h) 1B diesel generator pressure switches IE 22 N 504 and N 505 which were temporarily turned over to construction (87-80) had not been orange tagged to indicate their new status.

Lack of jurisdictional control tagging is contrary to LSU 100-5, the QA Manual and 10 CFR 50, Appendix B, Criterion V and is considered to be an example of an item of noncompliance of the infraction level (373/80-25-03).

During the inspection the licensee replaced all missing blue tags, therefore, the inspector stated no response to this portion of the citation is required. However, a description of how the licensee plans to maintain equipment released for preoperational testing blue tagged, and a response for the items covered by a temporary turnover agreement is required.

- (3) The Operational Analysis Department Jumper Log indicated jumpers were installed in panel ODG 025B, terminal board

18, between terminals 54 and 84 and between terminals 50 and 82 as of January 18, 1979. The same jumpers were also logged in the Master Jumper Log on May 22, 1980, as being installed. (A field check by the inspectors on May 23, 1980, revealed that the jumpers were not in place.) Thus, according to the licensee's records, the jumpers were installed on April 17, 1979, at the time of the emergency diesel 0 turnover. Station procedure LAP 240-3, "Electrical Jumper and Relay Blocks", and Startup Manual procedure LSU 100-2, "Construction-Operating Turnovers and Releases", describes the methods to be used to identify, log and transfer all jumpers, lifted wires and relay blocks. Procedure LSU 100-2 further states that "all jumpers which cannot be removed for safety reasons shall be fully identified in the turnover data package by location and purpose." Contrary to these requirements, the turnover package for emergency diesel 0, dated April 17, 1979, did not identify the jumpers installed by construction test personnel. The lack of proper documentation is inconsistent with the requirement of 10 CFR 50 Appendix B, Criterion V, Station Procedure LAP 240-3 and Startup Manual Procedure LSU 100-2 and is considered to be an example of an item of noncompliance (373/80-25-04) of the infraction level.

- (4) The inspectors noted a discrepancy in the wiring of terminal boards when compared with the as-built drawings. The following examples were noted in the emergency diesel generator 1B control panel.
- (a) Terminal board 14, terminal 26 has 4 wires terminating at this point. Drawing IE 14683AG indicates 3 wires connected to terminal number 26.
  - (b) Terminal board 13, terminal 8 has 4 wires terminating at this point. Drawing IE14683AG indicates 3 wires connected to terminal number 8.
  - (c) Terminal board 9, terminal 10 has 2 wires terminating at this point. Drawing IE14683AE indicates 1 wire connected to terminal number 8.

The above examples indicate lack of document control during the construction and preoperational testing phase and is inconsistent with the requirements of 10 CFR 50 Appendix B, Criterion VI, Station Quality Assurance Manual procedure QR No. 6 and is considered to be an example of an item of noncompliance (378/80-25-05) of the infraction level.

- (5) The inspectors noted that the quality assurance records for electrical cable installation, a product of the Foley Electrical Company, were not complete for cable number 158. In the review of cable termination cards, it was noted that cable number 158 had only a "from" termination card with field and quality assurance inspections completed. The inspector verified the cable requirement on drawing IE14580AJ and the field terminations both for the "to" and "from" locations. The contractor has documented the lack of the "to" termination card for this cable and stated that a card would be generated and a quality assurance inspection would be performed on this cable and that a review of cable terminations would be performed before the documentation is turned over to the licensee. This item remains open (373/80-25-06) pending review of the licensee's action.

b. PT-MS-101A

- (1) The package contained a copy of Nonconformance Report (NCR) # 374 dated February 28, 1979, regarding some defective welds. The NCR had not been closed as of the date of turnover, May 2, 1980. A Deficiency Report was not prepared until May 23, 1980. This is contrary to LSU 100-2 steps F.1.e and F.1.i, the QA Manual, and 10 CFR 50, Appendix B Criterion V, and is considered to be an example of an item of noncompliance (373/80-25-07) of the infraction level.
- (2) On pages 2 and 3 of the piping line list of the System and Equipment List, several lines marked for partial turnover No. 1 had not been signed by the Station Construction Engineer for turnover, but had been signed by the Quality Assurance Engineer. The test engineer stated the lines (instrumentation) were erroneously marked for turnover. A review of the redline drawings and turnover records in the Shift Engineer's office showed that several instruments and valves in the lines not signed have been blue tagged. At the exit interview the licensee stated that the missing signatures were an omission which would be corrected. The apparent contradictions regarding the unsigned instrument lines and whether they should be blue tagged or not is an unresolved item (373/80-25-08) pending further review by the inspectors.

4. Diesel Generators Air Start System

During a review of the status of the diesel generator systems the inspectors noted that the two independent air start systems are connected by a copper line (1/2" ID) which goes from downstream of each starting solenoid valve to the governor booster. The purpose

of the line is to operate a piston which injects an extra amount of fuel during the starting of the engine. The inspectors stated that failure of the common line may impair the starting of the diesel and requested that the licensee consider tests which simulated a line break. The licensee has proposed two tests as follows:

- a. Disconnect the line at tee downstream of one solenoid valve and attempt to start engine.
- b. Disconnect one line at tee leading to governor booster and attempt to start engine.

The inspector stated that this item remains open (373/80-25-09) pending a review of the results of these tests.

A review of Section 9.5.6 of the FSAR revealed that certain statements regarding the minimum number of starts (six) available in the air storage system, the minimum receiver air pressure at which a satisfactory start with two air motors can be accomplished, and the testing of each starting air system each time the diesel generator is started, should be clarified because in their present form they are incorrect or can be misinterpreted. The licensee agreed to review the statements and make the necessary FSAR corrections. This item remains open (373/80-25-10) pending further review of the licensee's action by the inspector.

#### 5. Review of Preoperation Test Results

During a preoperational test on May 8, 1979, of emergency diesel generator 1A, a "minor change request" to the approved test procedure PTDG101A, was authorized in accordance with administrative procedure LSU 500-2 of the Startup Manual. The request changed the requirement for a clamp-on ammeter in step B-2-C.3.a (page 198); "Verify heater element operation by measuring heater current with a clamp-on ammeter", to a voltmeter. The measurement of the electrical current in each of the three phases of the heater is used as a positive indication that the electrical circuit is completely operational and more importantly, that a balanced current load is being drawn by the immersion heater to demonstrate that the system and components will perform satisfactorily in service. The substitution of a voltmeter for a current meter changes the intent of the preoperational test procedure. LSU 500-2 describes the method to be used for processing test changes which change the intent of the procedure. It requires, in part, the review and approval of the Station Nuclear Engineering Department project engineer.

The licensee stated that the clamp-on ammeter had been used during a previous step which required verification that the starter M at the MCC was energized, but was not documented. From the available records (preoperational test results, minor procedure change form)

the inspectors could not verify whether the ammeter had been used or not. It appears the SROs approving the minor change failed to notice that the change form did not note that the change as written changed the intent of the procedure. Failure to document a step taken earlier in the test procedure and in the procedure change form to justify its classification as a minor change is contrary to 10 CFR 50, Appendix B, Criterion XI and QA Manual Q.P. No. 11-2 Section 5.5, and is considered to be an example of an item of noncompliance (373/80-25-11) of the infraction level.

6. Review of Preoperational Test Procedure PT-PC-101

During the review of PT-PC-101, "Integrated Leak Rate Test", Rev. 4., the following additional comments were generated:

- a. The answer to question A21.53 page 4 dated February 1979 in the FSAR indicates a high pressure bypass preoperational test will be performed at approximately the peak drywell to wetwell  $\Delta P$  as described in Chapter 14. A review of Chapter 14 is silent on the subject. No plans exist to perform such preoperational test; however, the licensee stated a high pressure bypass test is planned by construction. In that the administrative controls on preoperational tests are more strict than for construction tests, the inspector requested the licensee to either transfer the test to the preop program or amend the FSAR statement and include the  $\Delta P$  to be used for the test. This item remains open (373/80-25-12) pending inspector review of the licensee's corrective action.
- b. Attachment R should be corrected to agree with the computer code that uses sensors in subvolume 7 to substitute for subvolume 8 should the sensors in the latter become equal to zero.
- c. Statements in the procedure should be corrected to require the containment pressure to be less than 85% Pa for 24 hrs before ILRT only if the pressure exceeds Pa prior to the ILRT, such as for the SIT.
- d. A determination should be made as to how much air volume in wetwell has been lost due to modifications in progress.

Items b, c, and d remain open (373/80-25-13) pending inspector review of the licensee's corrective action.

7. Review of Standby Gas Treatment System (SGTS) Preoperational Test PT-VG-101

Preoperational Test Procedure PT-VG-101 was reviewed to determine compliance with applicable testing commitments and requirements contained in the FSAR, LCS Startup Manual, and CECO QA program.

Procedure PT-VG-01 appears to conform to the requirements identified above with the following exceptions:

- a. Table 14.2-20 of the FSAR states, in part, that preoperational testing of the SGTS will include testing to demonstrate that system filter and adsorber units meet the requirements of NRC Regulatory Guide 1.51, that one SGT subsystem will draw down the secondary containment to  $\leq \frac{1}{2}$  inch of vacuum water gauge in  $\leq 5$  minutes, that the SGTS can maintain  $\frac{1}{2}$  inch negative pressure in the reactor building with respect to in leakage, and that the capacities of all SGTS fans and equipment components are within acceptable limits. Table 14.2-20 also requires that measurements be performed to demonstrate adequate airflow distribution and filter and adsorber efficiencies, and that testing be performed to ensure that system operating parameters are within specifications for all system modes.

Procedure PT-VG-101 appears to be inadequate in that the test steps contained in it do not address the testing commitments described above, contains no provisions for recording data to demonstrate satisfactory system performance in regard to the tests identified above, and lacks criteria for determining acceptable performance of the system.

The licensee stated that references made in PT-VG-101 to Station Procedures LTS-400-1, LTS-400-2, LTS-400-3, LTS-300-3, LOP-VG-01, LOP-VG-02, LOP-VG-03, LOS-VG-Q1, and LOP-VG-R1 adequately address these testing requirements.

On June 4, 1980, the inspectors met with members of SNED LaSalle Station Project Staff to determine if the FSAR, the Quality Assurance Manual and Startup Manual requirements for preoperational test procedure review and approval and test results evaluation and approval were met when station procedures are referenced in preoperational test procedures in lieu of listing detailed testing requirements and requiring results documentation in the preoperational procedure. It was determined that the station procedures referenced by PT-VG-101 were not reviewed by SNED in accordance with QA Manual during the initial procedure review or during subsequent reviews of revisions up to and including final approval of the procedure for implementation. There is no existing program to accomplish such a review or to review documentation of results for station procedures used in lieu of preoperational tests to perform preoperational testing. Members of SNED staff responsible for the LaSalle County Station preoperational test program review and results evaluation concurred with the inspectors in their evaluation that the use of procedures other than preoperational test procedures to accomplish preoperational testing commitments appeared to compromise the applicable quality assurance program requirements,

and that the practice is not in conformance with the intent of the CECO Quality Assurance Program. This departure from the Quality Assurance Manual requirements is contrary to 10 CFR Part 50 Appendix B, Criterion VI and QA Manual O.P. No. 11-2 and considered to be an example of an item of noncompliance (373/80-25-14) of the infraction level.

- b. The inspectors left a list of 41 specific technical questions regarding PT-VG-101 for the licensee to address. The questions related to adequacy of calibrations and tests of instrument and control functions, items of information (such as acceptance criteria) which were not included in the copy of PT-VG-101 forwarded to the NRC for review, adequacy of valve lineups, provisions for assuring that construction and/or testing activities after testing but prior to fuel load will not invalidate test results for filters, adsorbers, and other SBT equipment. The list of technical questions is open item (373/80-25-15).
- c. As a result of reviewing PT-VG-101, it was determined that there is no requirement for preoperational or periodic inservice leak rate testing of the SGTS filter train housings, filter access doors, or other treatment equipment associated with the SGTS. Because the SGTS filter trains are located in the reactor building and operate at pressures above reactor building ambient pressure, it appears that a potential for bypassing gases from the primary containment to the reactor building exists during periods of SGTS operation to process the primary containment atmosphere. The licensee has stated that he would perform leakage testing as described above only if required by an applicable regulation. The licensee was informed by the inspectors that the question of the need for preoperational and/or periodic inservice leak rate testing of SGTS equipment is being forwarded to IE:HQ for resolution. This is an open item (373/80-25-16).

#### 8. Unresolved Items

Unresolved Items are matters about which more information is required in order to ascertain whether they are acceptable items, Items of Noncompliance, or Deviations. An Unresolved Item disclosed during the inspection is discussed in Paragraph 3.b.(2).

#### 9. Exit Interview

The inspectors met with licensee representatives (denoted in Paragraph 1) on June 13, 1980. The inspectors summarized the scope and findings of the inspection. In addition, telephone conversations regarding the inspection findings were conducted on June 20 and July 17, 1980.

In response to certain items discussed by the inspectors the licensee representatives:

Acknowledged the statement by the inspectors with respect to the items of noncompliance (Paragraphs 2, 3.a, 3.b, 5, and 7.a).

Stated that no field checks are made of pre-wired equipment vs prints, but that proper wiring is demonstrated during construction functional tests. (Paragraph 3.a.(4)).

Agreed to conduct special tests to determine if a common made failure problem exists in the diesel generators air start system. (Paragraph 4).