

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

REGION III

Reports No. 50-454/80-24; 50-455/80-22

Docket Nos. 50-454; 50-455

Licenses No. CPPR-130; CPPR-131

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

Facility Name: Byron Nuclear Generating Station, Units 1 and 2

Inspection At: Byron Construction Site, Byron, Illinois

Inspection Conducted: December 9-12, 1980

C. E. Jones
Inspector: C. E. Jones

1-5-81

E. R. Schwabing for
Approved By: C. C. Williams, Chief
Projects Section No. 2

1-8-81

Inspection Summary

Inspection on December 9-12, 1980 (Reports No. 50-454/80-24; 50-455/80-22)

Areas Inspected: Tour of the construction area; status of construction; status of previous identified unresolved items and documentation concerning tendon post-tensioning and tendon anchor head replacement. This inspection involved a total of 24 inspector-hours on site by one NRC inspector.

Results: Of the four areas inspected, one unresolved item was upgraded to an item of noncompliance (violation - failure of QC to stop equipment installation pending proper alignment of anchor bolts and mounting holes in equipment skids).

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DETAILS

Persons Contacted

Principal Licensee Employees

*G. Sorensen, Construction Superintendent
*J. Mihovilovich, Lead Structural Engineer
*R. Percy, QA Engineer
*R. Gruse, Field Engineer, Station Construction
*R. Aken, QA Engineer
*J. DeRosia, Field Engineer, Station Construction
*R. Choinard, QA Engineer.
J. Porter, QA Engineer

Other Personnel

R. Donica, QA/QC Manager, Blount Brothers
L. Hill, Hunter Corporation, Auxiliary Building Area Superintendent

*Denotes those present at the exit interview.

Licensee Action on Previous Inspection Findings

(Closed) Unresolved Item (50-454/80-17-01; 50-455/80-16-01) Quantities of heavy grease in the Unit 1 tendon gallery and on ladders leading to this area. The inspector entered the Unit 1 tendon gallery using the ladders leading to the tendon gallery. Small quantities of grease remained on the ladder, but was not considered to present a hazard. The licensee stated these ladders would be cleaned again upon completion of the tensioning of the horizontal tendons. This work is scheduled to be completed by December 31, 1980.

The inspector observed the entire circumference of the tendon gallery and failed to find any grease. The licensee stated that the entire area had required steam cleaning to remove the grease.

Since no tendons have been installed in Unit 2, the area is presently free of grease. This item is considered to be closed.

(Closed) Unresolved Item (50-455/80-20-01) Debris in the horizontal sections of the four Unit 2 reactor pressure vessel outlet nozzles and attached hot leg piping. The inspector observed the general area but was unable to see the areas in question due to the installation of a cover (working platform) over the reactor vessel. The licensee stated the piping had been cleaned and presented QA Surveillance Reports indicating they were monitoring the area. Based on this information and discussions with involved personnel, this item is considered to be closed.

(Closed) Unresolved Item (50-454/80-17-02; 50-455/80-16-02) Reflective insulation storage. The inspector noted the storage of reflective insulation during his various walks through the building and failed to note any adverse storage conditions. This item is considered resolved.

(Upgraded) Unresolved Item (50-454/80-12-04; 50-455/80-11-04) River Screen House Essential Service Water (ESW) make-up pump diesel foundation anchor bolts. This item was incorrectly identified in IE Inspection Reports No. 50-454/80-14; 50-455/80-13 as 50-454/80-12-03 and 50-455/80-11-03 rather than -04. Following additional review, this item has been upgraded to an item of noncompliance (50-454/80-24-01; 50-455/80-01). (see paragraph 4 of this report)

(Closed) Unresolved Item (50-454/80-21-01; 50-455/80-20-02) General house-keeping. The inspector noted improvement in general building housekeeping and vast improvement in specific areas. Also, efforts to clear the building of pigeons appears to be controlling this condition.

The Station Construction Department (SCD) has developed a planned approach to building cleanliness. Results of housekeeping audits by the QA department are provided to SCD for cleaning special areas. The licensee stated that some of the housekeeping effort presently done on the 4-12 is being transferred to the 8-4 shift to allow for better control of manpower. With the improved cleanliness and proposed auditing for good housekeeping, this item is considered resolved.

Functional or Program Areas Inspected

1. Site Tour

The inspector observed numerous locations in both Units 1 and 2 during the initial tour and when reviewing unresolved items. Specifically, the Unit 2 reactor cavity was inspected. The annulus between the biological shield and the reactor thermal insulation was observed from several locations. No trash or debris was observed in any of six separate locations checked.

A cleaning crew was nearly through sweeping the entry tunnel and picking up the trash.

2. Boric Acid Tanks

Observed the boric acid storage tanks 1AB03T and 2AB03T. The tanks were built by Chicago Bridge and Iron Company (CB&I) to Sargent & Lundy Specification F/L 2750 dated August 17, 1974, and to ASME Code Section III, Class III, Subsection ND, 1974 Edition including the Summer 1975 Addenda.

The licensee had trash removed from behind the tanks and the room cleaned.

Visual inspection of welds selected at random indicated the nozzle to 1½" flange weld at 270° on tank 1AB03T shown on CB&I drawing 194354 was not acceptable. Weld history and QC records are at CB&I and were not available on site for review. This item is considered unresolved pending a review of records and weld history (50-454/80-24-02).

3. Post-Tensioning Status

Received a status report and history of the anchor head failure, summary of the testing performed, schedule to complete tensioning of Unit 1 and details of the replacement anchor heads. Also reviewed selected procedures developed and approved for resolution of the problem.

The licensee assured the inspector that all procedures prepared by Blount Brothers Corporation were reviewed and approved by S&L and Commonwealth Edison Company.

The licensee also stated these reviews and approvals were completed for test procedures, test data and heat treatment records. The inspector stated that his review was preliminary and would not close the 50.55(e) report that is outstanding.

The scheduled completion date for all tensioning activities remains December 31, 1980. No items of noncompliance were identified.

4. Units 1 and 2 Essential Service Water Pump Foundations

As previously reported in NRC Inspection Report No. 50-455/80-11 and No. 50-455/80-13 an unresolved matter involving the Essential Service Water make up pump and diesel drive foundation anchor bolts were identified by NRC inspectors. Subsequent examination and evaluation of this matter by the NRC and the licensee has resulted in (1) the issuance by a nonconformance report by the licensee (NRC No. 514) and (2) upgrading of this previously identified unresolved matter to an item of noncompliance by the NRC.

Background

As reported in Inspection Report No. 50-455/80-11 an NRC inspector examined the nearly completed installation of the Unit 2 ESW make up pump and diesel drive foundation. It was observed that the foundation anchor bolts had been bent with several sharp 90 degree radius turns to align them with the holes in the diesel foundation base plate.

The NRC questioned the licensees personnel (the responsible field engineer and QA representatives) regarding the status of this installation. It was reported that (1) the identified condition had not been documented as an item of nonconformance, (2) the next installation activity would have been the grouting of the base plate (which would have precluded the discovery of this condition, (3) the observed condition represented a deviation from installation requirements in that bending of the anchor bolts is not

an acceptable method to correct misalignment. The Craftsmen, Field Engineer and QA/QC personnel had apparently implemented this unacceptable installation without regard for the Quality Assurance Program Requirements.)

Subsequently, during this inspection the inspector observed that the identical Unit I ESW pump and diesel foundation installation was completed. That is, grout had been installed and this precluded observation of the anchor bolts in the area of the observed bending on the Unit II ESW diesel foundation.

However, the observable lateral alignment of the Unit I ESW foundation bolts did not appear normal, in that they were not in a straight line. The licensee representatives indicated that there had been no documented problems with the Unit I installation.

Based on the above and in consideration of the incomplete status of the NRC inspectors activities, the inspector and the licensee's senior site representative agreed that the installation of the Unit II ESW pump foundation would be terminated until this matter has been fully examined and the indicated corrective actions are established. Further, the NRC inspector requested that the licensee provide further assurance that the same condition did not exist on the Unit I ESW diesel foundation. The licensee agreed to develop this assurance. NRC inspectors followed up on the unresolved matter as is reported in Report No. 50-454/80-14 and No. 50-455/80-13 on July 28-29, 1980. During this inspection the licensee reported that they had confirmed that (1) the installation of the partially completed Unit II ESW diesel pump foundation did not meet the requirements in that the anchor bolts were severely bent to accommodate gross misalignment, (2) the completed Unit I foundation was disclosed to have the same nonconforming items, (3) prior to NRC identification of this matter, it had not been formally documented as a nonconforming condition and had not been controlled in accordance with the QA program.

Consequently, the licensee issued nonconformance Report (NCR) No. 514. This document outlined the corrective actions to be taken. The corrective actions were translated to Engineering Change Notice ECN No. 1683 as per reference Drawing No. M-1227-2.

During this and the referenced inspections, NRC inspectors verified by observation of the work and review of records that "Hardware" corrective actions had been implemented in accordance with the specified requirements.

As a result of the inspections conducted on June 17-19, July 28-29, and December 9-12, 1980, and in accordance with the Interim Enforcement Policy, 45 FR 66754 (October 7, 1980), the following violation was identified:

10 CFR 50, Appendix B, Criterion II states in part, "Activities affecting quality shall be accomplished under suitably controlled conditions. Controlled conditions include the use of . . . ; and assurance that all prerequisites for the given activity have been satisfied."

Commonwealth Edison Company Topical Report CE-1-A, "Quality Assurance Program for Nuclear Generating Stations," Revision 9, dated July 16, 1979, states in Paragraph 1.A that "Commonwealth Edison Company is ultimately responsible for the assurance of quality in all phases of the design, procurement, construction, modification, testing and operation of the Station . . . Edison has prime responsibility for controlling the quality of on-site work by field contractors."

Contrary to the above, a number of the anchor bolts for the Unit 2 Essential Service Water (ESW) pump and diesel engine foundation anchor plates were observed to have sharp radius bends which were improperly made to correct gross misalignment with holes in the pump-diesel mounting plates. The Unit 1 pump and diesel had been set previously. Additional investigation indicated the Unit 1 equipment had been mounted and the base grouted covering similarly bent anchor bolts.

Unresolved Items

Unresolved items are matters about which more information is required in order to determine whether they are acceptable items, items of noncompliance, or deviations. An unresolved item disclosed during this inspection is discussed in Paragraph 2 above.

Exit Interview

The inspector met with licensee representatives (denoted under Persons Contacted) at the conclusion of the inspection on December 12, 1980. The inspector summarized the purpose and findings of the inspection. The licensee acknowledged the findings reported herein.