

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

REGION III

Reports No. 50-454/81-17; 50-455/81-13

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 Station, Units 1 and 2

Inspection At: Byron Site, Byron, IL

Inspection Conducted: October 21-23, 1981

for I. J. Fin
Inspector: J. F. Norton

11/5/81

for I. J. Fin
Approved By: F. C. Hawkins, Acting Chief
Plant Systems Section

11/5/81

Inspection Summary

Inspection on October 21-23, 1981 (Report No. 50-454/81-17; 50-455/81-13)
Areas Inspected: Observation of containment post-tensioning work activities and review of quality records; observation of coating work activities and review of quality records; and observation of containment cadweld operations. The inspection involved a total of 18 inspector-hours onsite by one NRC inspector.
Results: No items of noncompliance or deviations were identified in the areas inspected.

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the juncture of the wall and dome. The tendon systems for the walls and domes are independent, and installed separately. The vertical wall tendons run from the tendon gallery below the base mat to the top of the ring girder. Dome tendons consist of three families oriented at 120° and anchored at opposite sides of the dome ring girder. Circumferential tendons are at 240° system, with anchorages staggered at the three buttresses to provide equal numbers at each buttress. The design includes provisions for tendon detensioning for surveillance and testing.

The post tensioning work at Byron is nearing completion. Approximately two-thirds of the horizontal tendons for Unit 2 are to be completed. Completion is scheduled for December 1981.

2. Containment Post Tensioning

a. Observation of Work Activities

Tendon buttonheading was observed on the field head end of horizontal tendon FE 20 (Unit 2). Buttonhead gun CEBH-2 was utilized. The individual buttonheads were checked by a qualified QC inspector for verification of acceptable fillet radius and flashing width and to assure that split, slip, and eccentricity tolerances were not exceeded. The Region III inspector reviewed the QC inspection sheets and procedure and verified that equipment calibration was current. The buttonheading operation was being accomplished in accordance with Blount Brothers Corporation (BBC) QA/QC Procedure No. 45 "Installation of Field Anchorheads and Field Buttonheading of Post Tensioning Tendons."

Tendon insertion was observed as tendon 30 DF (Unit 2) was inserted. A QC inspector was verifying that installation was in accordance with BBC Procedure No. 44, "Installation of Post Tensioning Tendons." Check point forms and field records were reviewed by the Region III inspector. Tendon insertion is 90% complete on Unit 2.

The post tensioning construction program was discussed with the BBC Post Tensioning Supervisor during field observation of the tendon installation and buttonheading.

b. Quality Records/Procedures - Containment Post Tensioning

(1) Tendon Folders

Tendon folders for 18 horizontal Unit 2 tendons were reviewed.

Specific documentation contained in each folder included:

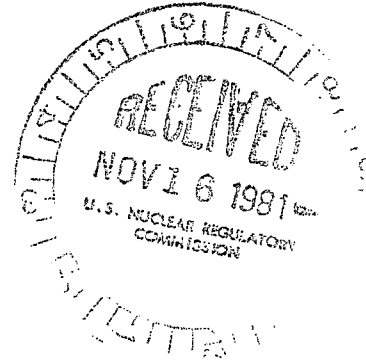
- a. Tendon History (General).
- b. Post Tensioning Tendon Greasing Inspection.
- c. Bearing Plate Preparation and Grease Can Installation.
- d. Post Tension Stressing Inspection.
- e. Post Tension Buttonheading Inspection.
- f. Post Tension Tendon Installation Inspection.

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Docket No. 50-454
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Commonwealth Edison Company
ATTN: Mr. Cordell Reed
Vice President
Post Office Box 767
Chicago, IL 60690



Gentlemen:

This refers to the routine safety inspection conducted by Mr. J. F. Norton of this office on October 21-23, 1981, of activities at Byron Station, Units 1 and 2, authorized by NRC Construction Permits No. CPPR-130 and No. CPPR-131 and to the discussion of our findings with Mr. G. Sorensen and others of your staff at the conclusion of the inspection.

The enclosed copy of our inspection report identifies areas examined during the inspection. Within these areas, the inspection consisted of a selective examination of procedures and representative records, observations, and interviews with personnel.

No items of noncompliance with NRC requirements were identified during the course of this inspection.

In accordance with 10 CFR 2.790 of the Commission's regulations, a copy of this letter and the enclosed inspection report will be placed in the NRC's Public Document Room. If this report contains any information that you or your contractors believe to be exempt from disclosure under 10 CFR 9.5(a)(4), it is necessary that you (a) notify this office by telephone within seven (7) days from the date of this letter of your intention to file a request for withholding; and (b) submit within twenty-five (25) days from the date of this letter a written application to this office to withhold such information. Section 2.790(b)(1) requires that any such application must be accompanied by an affidavit executed by the owner of the information which identifies the document or part sought to be withheld, and which contains a full statement of the reasons which are the bases for the claim that the information should be withheld from public disclosure. This section further

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requires the statement to address with specificity the considerations listed in 10 CFR 2.790(b)(4). The information sought to be withheld shall be incorporated as far as possible into a separate part of the affidavit. If we do not hear from you in this regard within the specified periods noted above, a copy of this letter and the enclosed inspection report will be placed in the Public Document Room.

We will gladly discuss any questions you have concerning this inspection.

Sincerely,

C. E. Norelius, Director
Division of Engineering and
Technical Inspection

Enclosure: IE Inspection
Reports No. 50-454/81-17
and No. 50-455/81-13

cc w/encl:
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- g. Tendon Greasing Card.
- h. Tendon Stressing Card.
- i. Tendon Buttonheading Card.
- j. Report of Buttonhead Sample List.
- k. Tendon Pulling Card.
- l. Tendon Tags.
- m. Materials Receiving Record.

Tendon folders reviewed were 25-DF, DE and FE; 31-DF, DE and FE; 37-DF, DE and FE; 43-DF, DE and FE; 49-DF, DE and FE and 59-DF, DE and FE. All records were complete and documented appropriate QA/QC inspection data and independent review signoff.

(2) Measuring and Test Equipment Calibration

The calibration/verification records of the following equipment were reviewed:

- a. Post Tensioning Ram/Jacks: 8753, 8778, 8779, 8780, 8783 and 8800.
- b. Stressing Gauges: Master B1, Master B2, N2, N143, N239, N258, N285, N286, N325, N326, N327, N601, N1113, and N1124.
- c. Pressure Gauges: P-500-1, P-500-3 and PG No. 3.
- d. GO-NO-GO Gauges: BH-67, BH-68 and BH-69.
- e. Post Tensioning Feeler Gauges: 2, 4, 5, 10, and 11.
- f. Grease Thermometers: CAP-11, 2BM4X-1, 2BM4X-2, and 2BM4X-3.
- g. Eccentricity Gauges (By Method QA 9.1.F): ECC-6, ECC-7 and ECC-8.

The review verified each item was properly calibrated at the frequencies specified in BBC Procedure No. 51.

(3) Friction Loss Test

BBC Procedure No. 55 "Friction Loss Test for Post Tensioning Systems" was reviewed. The review verified that the procedural method is within the realm of standard practice and will yield reasonably accurate friction loss estimates.

3. Coatings-Service Level I

a. Observation of Work Activities

Midway Industrial Contractors, Incorporated (MIC), Chicago, are performing the coatings work at Byron. The Region III inspector

visited their site blast shop on October 22, 1981. In process coating of flat plate Nos. 26491 and M20740 was observed. After appropriate surface preparation of substrates was accomplished by sand blasting, zinc dust was measured, mixed with Carbo Zinc 11 base, and applied. An MIC qualified applicator utilized a Binks No. 7 gun and a 2-gallon agitating pot to accomplish the coating. Specifications called for a dry film thickness coating range of 3 to 6 mils. The MIC QC inspector was observed gauging mil thickness with a Mikrotest thickness gauge. Shop equipment and QC recording procedures and equipment were discussed with shop personnel.

b. Coating Materials Storage

All service Level I coating materials are stored in a trailer onsite. The facility is completely insulated and is equipped with heating and ventilating equipment. Continuous monitoring of temperatures is accomplished with a Dickson Recording Thermometer. All materials are appropriately tagged to show date of manufacture, shelf life and batch number. A lockup area is provided to store damaged and/or rejected materials.

c. Quality Records

Review of service Level I coatings quality records was accomplished as follows:

1. Daily Inspection Record (MIC-1002).
2. Product Identity Certification Record.
3. Quality Assurance Certification Record.
4. Production Personnel Qualification Record.
5. QC Personnel Qualification Records.
6. Measuring and Testing Equipment Calibration log.

The records address salient aspects of the coatings QA/QC inspection work. No conflicting or inadequate documentation was detected by the Region III inspector.

d. Coatings Program Discussion

The overall coatings program was discussed with the MIC Production Supervisor and QA Supervisor during the inspection process. Surface preparation, application, and test equipment were addressed, in addition to storage facilities and QA documentation procedures.

4. Cadwelding

In process Cadwelding was observed October 23, 1981. The operation took place in the 30 line wall Columns L to M, which is a construction access opening. Sleeve No. 2CTU42626NF was utilized on a No. 14 bar production splice. Also, Sleeve No. 11101 was used to construct a sister splice for destructive testing. Cadwelding operations were discussed with the BBC QC Manager and a CECO QC engineer while observing the work.

Exit Meeting

The inspector met with licensee representatives (denoted under Persons Contacted) and conducted an exit meeting at the conclusion of the inspection on October 23, 1981. The inspector summarized the inspection accomplishments and findings. The licensee acknowledged the findings as addressed in this report.