

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No.: 50-455/85013

Docket No.: 50-455

License No.: CPPR-131

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

Facility Name: Byron Station, Unit 2

Inspection at: Byron Station, Byron, IL

Inspection Conducted: April 16 - May 15, 1985

Inspectors: J. M. Hinds, Jr.

K. A. Connaughton

Approved By: *W. L. Forney*
W. L. Forney, Chief
Reactor Projects Section 1A

5/23/85
Date

Inspection Summary

Inspection on April 16 through May 15, 1985 (Report No. 50-455/85013(DRP))

Areas Inspected: Routine, unannounced safety inspection by the resident inspectors of licensee action on previous inspection findings; Part 21 reports; 50.55(e) reports; preoperational test procedures; housekeeping/care and preservation of safety-related components; and items for which followup was requested by Region III. The inspection consisted of 101 inspector-hours onsite by 2 NRC inspectors including 12 inspector-hours during off-shifts.

Results: No items of noncompliance or deviations were identified.

DETAILS

1. Persons Contacted

Commonwealth Edison Company

V. I. Schlosser, Project Manager
*G. Sorensen, Project Construction Superintendent
*M. Loehman, Project Construction Assistant Superintendent
R. Querio, Station Superintendent
*R. Klingler, Project Construction Quality Control Supervisor
J. Binder, Project Construction
F. Hornbeak, Unit 2 Technical Staff Supervisor
R. Poche, Compliance Group
D. Pyatt, Project Construction
L. Sues, Assistant Superintendent, Maintenance
*J. C. Woldridge, Quality Assurance Supervisor
*Elsie Briette, Quality Assurance Engineer
*John E. Steinmetz, Project Construction Department Electrical Engineer
*R. J. Moravec, Project Mechanical Supervisor

Hunter Corporation

M. Somsag, Quality Assurance Supervisor

The inspectors also contacted and interviewed other licensee and contractor personnel during the course of this inspection.

*Denotes those present during the exit interview.

2. Action on Previous Inspection Findings (92701)

- a. (Closed) Unresolved Item (455/82007-03(DRP)): Damage to shock arrestors. This item originally dealt with inspector observations of damage to a shock arrestor (snubber) bushing (spherical bearing) during transport of the snubber from a storage area into the Unit 1 containment for installation. Following review of information provided by a licensee letter containing the results, corrective action and commitments established as a result of a Quality Assurance audit, this item was closed for Unit 1 in Inspection Report Number 454/82015(DRP).

The licensee provided a response describing the policies and practices implemented to preclude repetition of damaged snubber installation for Unit 2 which included Hunter Corporation (Hunter), Site Work Instruction (SWI) 2, Revision 7, dated July 18, 1984, "Installation of Hanger Specialty Items." Review of SWI 2 indicated that provisions have been incorporated in the procedure to (1) install a "surrogate" assembly until such time as Hunter obtains a release for installation from the licensee; (2) inspect the spherical bearing, prior to installation, to determine if loose, missing, or damaged; and (3) replace and/or tighten the spherical

bearings in eyerods (paddles) of snubbers and struts and restoring the spherical bearing movement.

- b. (Closed) Open Item (455/85006-03(DRP)): Disposition of cut rebar reported under Hunter Nonconformance Report (NCR) No. 1050. The inspector reviewed Facility Change Request (FCR) No. F-35515 dated April 25, 1985. The subject FCR provided as-built information necessary for engineering evaluation of cut rebar associated with the following mechanical support installations:

2RY06076S
2RY062680A
2MS01013R
2MS01011S
2MS01018S
2RM02002S

All installations were evaluated and approved "as-is" by Sargent and Lundy (the architect engineer).

3. 10 CFR Part 21 Reports (90712)

(Open) 10 CFR Part 21 Report (455/85002-PP): Air line check valves manufactured by Parker-Hannafin and supplied by Anchor-Darling Valve Company failed to reseal on slow bleedoff of supply side air pressure. On March 19, 1985, the licensee provided initial notification of air line check valve failures experienced following the Byron Unit 1 "Loss of Offsite Power" startup test on March 15, 1985. As a result the 1A and 1D Main Steam Isolation Valves (MSIVs) failed to close upon receipt of a main steam isolation signal. Air-operated pilot valves could not be repositioned to admit and vent hydraulic fluid to and from the MSIV actuator to accomplish MSIV closure. Byron Unit 2 was supplied with the same MSIV actuator packages utilizing the defective check valves.

At the time of this inspection the licensee had completed evaluations of the check valves and concluded that design limitations accounted for their failures and that they were unsuitable for use in the MSIV actuator application. To correct the reported problem the licensee has ordered replacement check valves of superior design and will install them in Unit 1 and 2 MSIV actuators. This Part 21 report will remain open pending receipt, installation and suitable preoperational testing of the replacement check valves.

4. 10 CFR 50.55(e) Reports (92716)

- a. (Closed) 50.55(e) Report (455/83010-EE): Shunt trip coil on battery charger feed breaker manufactured by Square D was rated at 120V A.C. instead of 125V D. C. As reported by the licensee on August 29, 1983, the improperly supplied shunt trip coils were identified on Byron Unit 1 and Braidwood Unit 1 only. This item was provided an NRC Region III tracking system number for Byron Unit 2 to assure inspector followup and verification that the reported defect did not

also exist on corresponding Unit 2 breakers. The inspector determined by interviews with licensee personnel that the feed breakers for Unit 2 battery chargers 211 and 212 had been examined and that the supplied shunt trip coils were rated at 125V D. C. as specified by design.

- b. (Open) 50.55(e) Report (455/83011-EE): Anaconda flexible conduit split. During hot functional testing (HFT) of Byron Unit 1, the jacket of the anaconda type NWC flexible conduit used inside containment on several installations was discovered to be split open. The conduit was to have provided a liquid-tight jacket for Class 1E circuits. The problem was determined to have been caused by excessive bending in combination with exposure to high temperatures during HFT. To prevent such occurrences on Unit 2, the licensee requested Sargent and Lundy to revise electrical drawings to eliminate the use of the anaconda type flexible conduit on Class 1E circuits in containment or steam environments. The inspector reviewed Byron electrical drawing 6E-0-3390, Revision AV, dated January 31, 1985. Note 28 of the subject drawing stated that flexible conduit in all areas shall be liquid tight (per Paragraphs 5.1.2 and 5.1.3 of Sargent and Lundy Standard EB-146). Paragraph 5.1.3 of EB-146 in turn referred to Paragraph 5.2.5. Paragraph 5.2.5 specified the use of service air SS63 series, S91, Series 200 or American BOA NB flexible conduit and NBLC series fittings for installations inside containment. This item remains open pending verification that installation procedures have been revised, as necessary, to implement the above requirements.
- c. (Open) 50.55(E) Report (455/83012-EE): Westinghouse A-200 Motor Control Center (MCC) overload blocks not calibrated properly. During testing of Westinghouse MCC's it was discovered that some of the motor starters were tripping outside of acceptance criteria specified in Westinghouse instructions. It was determined that the A-200 MCC ambient compensated thermal overload relay blocks for sizes 0, 1, and 2 starters were deficient. The licensee issued CECO NCR F-900 on April 5, 1984, to require replacement and testing of affected relay blocks. At the time of this inspection NCR F-900 remained open.
- d. (Closed) 50.55(e) Report (455/84002-EE): Inadvertent switching of containment spray pump impellers. The inspector reviewed Hunter Corporation Job Traveler Packages (JTP's) HCS 012 and HCS 022. The process sheets associated with JTP's provided instructions and documentation for containment spray pump assembly. Impeller serial numbers recorded on the process sheets during pump assembly indicated that the correct impeller had been installed for each pump. The inspector reviewed the containment spray pump vendor manual and verified that it had been revised to include acknowledgement of the difference between the "A" train and "B" train pump impellers and cautioned against their substitution. The inspector reviewed Byron Maintenance Procedure BMP-3106-001,

"Disassembly, Inspection, Part Placement and Reassembly of the Containment Spray Pumps," Revision 1, dated April 6, 1985. This procedure included a similar caution against substitution of impellers.

5. Preoperational Test Procedure Verification (70311)

The inspector reviewed preoperational test procedure 2.24.62, "Diesel Fuel Oil-Auxiliary Feedwater Pump Fuel Oil Supply," Revision 1, dated February 4, 1985. This review was conducted against the FSAR, Regulatory Guide 1.68, Technical Specifications and the Byron Startup Manual. The inspector noted that changes made to the corresponding Unit 1 preoperational test had been reviewed and incorporated into the subject test. Deviations from the corresponding Unit 1 preoperational test were identified and reasons for such deviations were documented.

No items of noncompliance or deviations were identified.

6. Housekeeping/Care and Preservation of Safety-Related Components (92706)

The inspectors conducted plant tours of Unit 2 between April 16 and May 15, 1985. Areas of the Unit 2 plant observed during the tours included the containment, fuel handling and storage areas, auxiliary building areas including the Unit 2 portion of the control room, and the turbine building. Areas were inspected for work in progress, state of cleanliness, overall housekeeping, state of fire protection equipment and methods being employed, and the care and preservation of safety-related components and equipment. The inspectors identified specific areas including the Unit 2 containment sump and the Unit 2 main control console rear sections where additional housekeeping efforts should be concentrated to bring the overall cleanliness state of these areas up to par with the current stage of construction. Inspector concerns in these specific areas were related to the licensee. In a subsequent inspection of the identified areas, it was determined that the licensee had taken adequate and timely corrective measures to resolve these concerns.

No items of noncompliance or deviations were identified.

7. Inspection in Response to Regional Office Request (92705)

a. Station Battery Operation and Maintenance

Recent NRC inspections of operating facilities indicated that several widespread deficiencies may have existed in the operation and maintenance of safety related station batteries. A summary of deficiencies disclosed by these inspections was provided to the inspectors for use in evaluating the adequacy of licensee procedures and practices pertaining to the station batteries.

The inspector reviewed Byron Technical Specification 3/4.8.2, "Electrical Power Systems D. C. Sources" and the following Byron station procedures:

<u>Procedure Number</u>	<u>Title/Revision</u>
1 BOS 8.2.1.1-1	"DC Bus Train Operability Weekly Surveillance," Revision 1
1 BOS 8.2.1.2a-1	"Battery Bank and Charger Operability Weekly Surveillance," Revision 2
1 BHS 8.2.1.2b-1	"125 Volt Battery Bank - Quarterly," Revision 2
1 BHS 8.2.1.2c-1	"125 Volt Battery Bank 18 Month Surveillance," Revision 1
1 BVS 8.2.1.2d-1	"125 Volt Battery Bank and Charger Operability - Battery Capacity," Revision 1
1 BVS 8.2.1.2e-1	"125 Volt Battery Bank and Charger Operability - 5 Year Battery Capacity"
BOP DC-1	"125V DC Battery Charger Startup," Revision 5
BOP DC-2	"125V DC Battery Charger Shutdown," Revision 3
BOP DC-3	"Placing Battery-11 or -12 on Equalizing Charge," Revision 4
BOP DC-4	"125V DC Control Power Transfer," Revision 3
BOP DC-T1	"Battery Charge Equalizer Log Sheet," Revision 2

The inspector determined that the procedures included corrections for electrolyte level and temperature when measuring specific gravity. The rated load discharge test correctly specified the minimum discharge rate for an 8 hour test. The procedures for battery charger operation and battery equalization appeared technically adequate and included maintenance of battery charging logs.

The inspector determined that Procedure 1 BOS 8.2.1.2a-1 which was used to satisfy technical specification requirements for weekly measurement of electrolyte specific gravity, pilot cell float voltage and battery terminal voltage did not specify that the

battery be on float charge as a prerequisite. The procedure did, however, require recording battery charger status. If the battery was on an equalizer charge neither specific gravity nor pilot cell float voltage were required to be measured. The inspector expressed concern that if the procedure was executed as written with the battery on an equalizer charge these parameters may not be measured within the required surveillance interval. Licensee personnel acknowledged the inspectors concern and on April 27, 1985, the procedure was changed to require placing the battery on a float charge and measuring required parameters whenever the procedure was executed.

No items of noncompliance or deviations were identified.

b. Implementation of 10 CFR 50.54(k) and (m) Requirements

The inspector conducted a review of the licensee's program for implementing the requirements of 10 CFR 50.54(k) and (m). The inspector reviewed procedure BAP 300-22, R-8, "Conduct of Operations" to verify that it defined requirements for licensed operators to be "at-the-controls," defined the "at-the-controls" areas by use of a drawing and defined criteria where in an emergency the operator may leave the controls for a short time period. The inspector interviewed several licensed operators and senior licensed operators to verify their understanding of these requirements and determined that the licensed operators' understanding of "at-the-controls" was adequate and that the implementation of BAP 300-22 was satisfactory.

No items of noncompliance or deviations were identified.

8. Exit Interview (30703)

The inspector met with licensee representatives denoted in Paragraph 1 at the conclusion of the inspection on May 15, 1985. The inspector summarized the purpose and scope of the inspection and the findings. 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.