

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report Nos. 50-454/84-28(DRS); 50-455/84-20(DRS)

Docket Nos. 50-454 and 50-455

License Nos. 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 Station, Byron, IL

Inspection Conducted: May 1 - June 1, 1984

Inspectors: J. M. Hinds, Jr.

K. A. Connaughton

Approved By: *DW Hayes*
D. W. Hayes, Chief
Reactor Projects Section 1B

7/3/84
Date

Inspection Summary

Inspection on May 1 - June 1, 1984 (Report Nos. 50-454/84-28(DRS);
50-455/84-20(DRS))

Areas Inspected: Routine, unannounced safety inspection of licensee action on previously identified items; IE Bulletins; IE Circulars; 10 CFR Part 21 reports; 10 CFR 50.55(e) reports; allegations; Regulatory Improvement Program; Commissioner's Inspection Tour; plant tours/housekeeping and other activities. The inspection consisted of 190 inspector-hours on site by two NRC inspectors including 67 inspector-hours during off-shifts.

Results: No items of noncompliance or deviations were identified.

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DETAILS

1. Persons Contacted

Commonwealth Edison Company

V. I. Schlosser, Project Manager
*R. Tuetkin, Startup Coordinator
*R. Querio, Station Superintendent
M. Loehman, Project Construction Assistant Superintendent
R. Klingler, Project Construction Quality Control Supervisor
*R. Ward, Assistant Superintendent, Administrative & Support Services
*L. Sues, Assistant Superintendent, Maintenance
T. Joyce, Operating Shift Oversight Superintendent
F. Hornbeak, Technical Staff Supervisor
W. Dean, Assistant Technical Staff Supervisor, Licensing
E. Grennan, Licensing Staff
*J. Poche, Licensing Staff
*R. Gruber, QA Engineer
S. Devine, Electrical Group Leader, Technical Staff
*L. Johnson, QA Engineer
B. Milner, Primary Group Leader, Technical Staff
*R. Flahive, Assistant Technical Staff Supervisor
*K. Hansing, Quality Assurance Site Superintendent
S. Altmayer, Quality Assurance Auditor
L. Woldridge, Quality Assurance Lead Auditor

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

*Denotes those present during the exit interview on June 1, 1984.

2. Licensee Action on Previously Identified Items

(Closed) Unresolved Item 454/84-15-03; 455/84-11-03: Provision in administrative procedure in conflict with Byron Technical Specifications 6.3.2.6.4. The inspector reviewed Byron Administrative Procedure BAP 300-5, "Temporary Alterations", Revision 7, dated May 25, 1984. This procedure was revised to delete a provision for altering safety related systems without prior review and approval by the Byron Onsite Review organization. The procedure now requires that this review and approval be obtained in accordance with Byron Administrative Procedure BAP 1210-1, "Onsite Review Function". BAP 12100-1 requires that review and approval be obtained for all changes or modifications (i.e., prior to installation) to plant systems or equipment that can affect nuclear safety. These procedural requirements are now consistent with Technical Specification 6.3.2.6.4.

3. Inspection and Enforcement Bulletins (IEBs)

a. (Closed) IEB (454/78-08-BB; 455/78-08-BB): "Radiation Levels From Fuel Element Transfer Tubes". The licensee's response file indicated

that the IEB stated four concerns. Concern 1 dealt with a review of shielding design of plant areas adjacent to the fuel transfer tube to identify potential high radiation areas. The Byron FSAR, Amendment 38, May 1982, Question 331.17(a) addressed this concern with an analysis of the shielding for the fuel transfer tube which yields expected dose rates during fuel transfer less than the dose rates stated in 10 CFR 20.202(b)(2) for a radiation area, and indicated that there will be zero access to the fuel transfer tube area during fuel movement. Concern 2 dealt with positive control of access for entry into potential high radiation areas where a portion of unshielded fuel transfer tube is accessible. Concern 3 dealt with conspicuous posting of accessible unshielded portions of the fuel transfer tube in accordance with 10 CFR 20.203(c). Administrative controls currently in place under Byron Administrative Procedure (BAP) 700-2, Section C, requires a formal review when work is planned in a "High Radiation Area" and Byron Radiation Procedure (BRP) 1000-A1, "Radiation Signs and Labels", requires the 10 CFR 20.203(c) posting. Concern 4 dealt with the potential for radiation streaming identified in the shielding design review of Concern 1. Although no potential for streaming was identified in the response to FSAR Question 331.17(a), the licensee has committed to conducting a radiation survey of the areas adjacent to the fuel transfer tube where personnel access exists and will track this item by Action Item Request (AIR) 6-84-50.

- b. (Open) IEB (454/80-06-BB; 455/80-06-BB): "Engineered Safety Features (ESF) Reset Controls". This bulletin was reviewed in Inspection Report Nos. 50-454/82-22; 50-455/82-15 which found that testing and verification of diagrams would be accomplished by station personnel. Sargent and Lundy is performing a design review and will provide necessary modifications prior to system turnover for testing. The bulletin remained open pending review of the indicated actions. The licensee's response file now includes a memorandum which indicates that Pre-Operation Test 2.026.10, retests 141, 140, 134, 131, 130, 129, 212, 223, 226, 228 and component demonstrations 36, 57, 64 tested the ESF components in an attached list and found them to be in compliance with the requirements of IE Bulletin 80-06. The response also indicated, however, that the Auxiliary Building Ventilation (VA) equipment will be done later in the VA test and the Main Steam Isolation Valves' bypass valves, 1MS101A, B, C and D, do not appear to meet the requirements of the IEB. They will be retested as soon as the pending design change is completed. This bulletin is considered open pending review of file information indicating that the additional identified actions are complete.
- c. (Closed) IEB (454/82-01-BB; 455/82-01-BB): "Alteration of Radiographs of Welds in Piping Subassemblies". The licensee's response file indicated that the concerns of this IEB were centered around alterations of the radiographs of 21 shop welds in piping subassemblies supplied to WPPSSS- by Associated Piping and Engineering Corporation (AP&E) of Compton, California. Alterations to radiographs were accomplished by artificially enhancing the ASME Code penetrometer

4T-Hole image by touchup with a soft lead pencil, scribing or scratching with a sharp object, or indentation with a sharp object. An investigation by Region IV indicated the problem was potentially generic. In the original issue of the IEB on March 31, 1982, action items were addressed to specific licensees listed on Table 1. Byron Station was not listed on Table 1. Revision 1 to the IEB was issued on May 7, 1982, and provided additional information on the concerns and added specific sites to Table 1. Byron Station was not added to Table 1. Revision 1, Supplement 1 to the IEB was issued on August 18, 1982, which reviewed the history of the AP&E subassembly radiograph concerns and added ITT Grinnell Industrial Piping, Inc. of Kennerstville, North Carolina, as suppliers of Consumer Down Company, Midland Unit 1, to the concerns. Licensees with the potential to have received ITT subassemblies were added to Table 1. The licensee's response file indicated that the concerns identified in the IEB, Revision 1, Supplement 1 had been addressed and a review of Supplement 1 by Project Construction Department indicated that no ITT Grinnell subassemblies were shipped to the Byron Site; therefore, no further action is required.

- d. (Closed) IEB (454/84-02-BB; 455/84-02-BB): "Failures of General Electric Type HFA Relays In Use In Class 1E Safety Systems". The licensee's response indicated that the concerns of this IEB dealt with the failure of certain relays identified as GE type HFA 51 Series AC, using Lexan as the coil spool material at three nuclear stations. The problem was characterized as wire insulation failure resulting in shorted turns, causing increased coil temperature and eventual coil failure. Plants under construction, including Byron, were directed to report on the use of the Lexantype relays. The response also stated that Byron Station does not utilize HFA Relays in 1E applications. However, HFA relays are used in non-1E applications. Coil spools have been converted on these relays to avoid failures of the type referenced in GE vendor advisories and this IEB. Should the decision ever be made to use HFA Relays in 1E applications, Byron has controls to adequately prevent non-1E parts from being installed in 1E relays.

4. Inspection and Enforcement Circulars (IECs)

(Closed) IEC (454/77-13-CC; 455/77-13-CC): "Reactor Safety Signals Negated During Testing". The licensee's response file indicated that this IEC dealt with concerns centered around an occurrence described as follows:

On July 12, 1977, the Commonwealth Edison Company reported that while conducting a surveillance test at Zion Unit 2, test signals were simultaneously injected into several sensors which affected both protection and control systems. Injection of these test signals resulted in: (1) the loss of instrument indications for the affected protection and control systems, (2) the loss of automatic control capability for the affected control systems, and (3) the loss of automatic protection capability for the affected protection systems.

This IEC was reviewed in I&E Inspection Report Nos. 50-454/83-07; 50-455/83-03 at which time a response had been prepared and was being routed for signature. The licensee's response file now indicates that Byron is a newer design and does not insert test signals while the system is operating, or at any other time. Instead, an entire instrument loop is placed in test when a surveillance is performed. The remaining loops are verified operable prior to surveillance testing. In the event of a failure of any one operating loop, the test is halted and the loop under test is immediately placed back in service. Byron Station Technical Specification Surveillance Procedures identify the limitations and restrictions which are required during surveillance activities where applicable. Maintenance and operations personnel employed at Byron undergo sufficient training to ensure an in-depth understanding of system functions, system interactions, and Technical Specification requirements. Management controls require adherence to administrative procedures involving reviews, approvals and adequate communication between plant supervision and craft personnel performing test and surveillance activities. Byron Administrative Procedure BAP 1400-7 requires that the person performing a Technical Specification Surveillance obtain written permission from the Shift Supervisor, or his designee, prior to beginning a surveillance.

5. Part 21 Report Followup

- a. (Open) (454/84-01-PP; 455/84-01-PP): Hydrogen recombiner viton seals. By letter dated December 19, 1983, Rockwell International reported to the NRC Region IV Office a concern regarding the use of Viton elastomer seals on certain post-LOCA hydrogen recombiner system flanged connections. In the course of developing a methodology for mechanical qualification of pressure retaining components to the requirements of IEEE 627 it was determined that Viton will exhibit deterioration in seal effectiveness when exposed to steam, temperature, and/or radiation doses similar to the design basis conditions for recombiners. Licensees utilizing Rockwell International's hydrogen recombiner systems were to be informed of the concern and provided with a recommended replacement seal material.

The inspector informed the licensee of the report made by Rockwell to the NRC and asked if the licensee had also received such a report or any recommendations regarding seal replacement. Licensee personnel interviewed stated that they were unaware of the report but that they would determine whether or not they had received the report and develop a course of action with regard to the recommended seal replacement.

6. 10 CFR 50.55(e) Report Followup

(Closed) (454/83-02-EE; 455/83-02-EE): "Westinghouse Gate Valve Motor Operators". The licensee's response indicated that this report dealt with the potential for certain Westinghouse manufactured gate valves to indicate they are closed prior to the valve disc fully isolating flow. Should the valve stall or bind following the premature indication, the

operator would have an inaccurate indication of true valve position. A geared limit switch rotor is set to provide an electrical bypass of the open torque switch at the beginning of the opening stroke. On a closing stroke, this switch changes state before the flow path is completely blocked. As a result, it is likely that monitor and/or indicator lights also operated by that rotor will indicate valve closure slightly before the flow path is completely shut off.

The licensee's response file includes a Sargent and Lundy Engineers (S&L) analysis of the potential problem and conclusions. The S&L analysis indicated that the S&L standard valve control circuit utilizes a close end limit switch contact on Rotor No. 4 to bypass the open torque switch and limit switch contacts on Rotor No. 2 with the position indicating light. The limit switch contact providing bypass of the open torque switch is, therefore, independent of the limit switch contacts providing valve position indication.

7. Allegation Concerning Hatfield Electric Company

a. Allegation

A Nonconformance Report (no date given) was written, not issued, and voided by correspondence.

b. Findings

This allegation was received by Region III during an interview of the allexer. The allexer was asked if he could provide any more specific information detailing the circumstances under which this perceived impropriety occurred. The allexer stated that he could not. The information contained in the allegation was insufficient to make an assessment of significance or to formulate a further line of inquiry. The allegation was therefore not investigated. This allegation is considered closed.

8. Regulatory Improvement Program

a. Background

In preparation for a management meeting between Region III and the licensee to discuss the licensee's Regulatory Improvement Program, an inspection was conducted at Byron to review CECO's implementation of the program at Byron and to assess the attitude of station management and employees toward improved regulatory performance.

b. Documents Reviewed

CECO Memorandum Thomas to Keppler, dated February 24, 1984
CECO Corporate Regulatory Performance Improvement Plan dated February 1984, Revision 0
Report entitled "PWR Operations Manager", dated March 2, 1984
Report entitled "PWR Operations Manager", dated April 6, 1984.

Policy Plan: Administrative Guidance Personnel Errors Revised
February 3, 1984.

Nuclear Station Division Directive, NSSD-A07, "Potentially
Significant Events", Revision 0, October 14, 1983

Nuclear Station Division Directive, NSSD-A08, "Plant Startup After
Trip", Revision 0, October 5, 1983

Nuclear Station Division Directive, NSSD-A09, "Conduct of Operations",
Revision 0, October 13, 1983

c. Background

Following the Quad-Cities rod insertion error on March 10, 1983, CECo developed and implemented a plan to improve regulatory performance. The plan as described in the CECo letter from Thomas to Keppler dated February 24, 1984, includes: (1) procedural changes designed to elevate issues to higher levels of management within station and from stations to the corporate office; (2) procedural changes to deal more proficiently with regulatory compliance items; (3) efforts designed to heighten employee awareness regarding the need for improvement; and (4) organizational changes designed to strengthen CECo's ability to improve regulatory performance.

e. Conduct of the Inspection

From May 9 through May 11, 1984, the inspector conducted interviews with station personnel from the Station Superintendent down through the station organizational structure to the individuals at the lowest levels. Interviews were held at both the work site (when feasible) and in the Resident Inspectors' Office. The selection of individuals for interviews was based on a sampling of both management and non management personnel to ensure that all levels of station personnel and their individual and collective attitudes were included in this survey.

f. Conclusions and Findings

The program discusses meetings held at each station to communicate with essentially all station personnel on the implementation of the program.

Meetings were held at Byron on October 4, 1983, and February 17, 1984. The inspector determined that 100% of the personnel interviewed either had been present at the awareness meetings or viewed a video taped version of the meeting.

Each individual interviewed was familiar with the Nuclear Station Division Directives (NSDD) A07, A08 and A09. All had read the NSDDs and had an adequate understanding of the purpose and scope of the directives.

A portion of the program involves a corporate office overview of plant activities. The inspector determined that the more removed

from the interaction with this function an individual was by virtue of his job performance, the less aware of the nature, objectives and relation to this function the individual appeared to be. The converse also appeared to be true.

In response to questions related to the Shift Overview Superintendent (SOS), all were aware of the position, the individuals serving in that position, the basic functions, duties and responsibilities of the position, and it was generally felt that this is an important part of the program which could be developed into one of the most beneficial tools of the Regulatory Improvement Program. The individuals participating directly in this function, without exception, were extremely pleased with the benefits derived from participation in terms of cross-departmental exposure and on-shift problem resolution.

Another part of the program involves personnel error corrective action. At Byron the two basic approaches are the Professionalism Program and the standard administrative fact finding approach. The responses to questions related to the Standard Administrative fact finding aspect of the program were inconclusive. Management personnel feel the reactions have been positive and supportive. Non-management personnel tend to view the fact finding approach with apprehension and have adopted a "wait-and-see" attitude. It was generally felt that this may be the most difficult part of the program to effectively implement and that the necessary refinements will be developed by time and use of the program. Suggestions for improvement at Byron station have been relayed to the Station Superintendent.

Overall, the inspector found that CECo has made a forceful effort to implement the program at Byron Station and has to date, complied with the commitment as stated in the CECo letter from Thomas to Keppler dated February 24, 1984.

9. Commissioner's Inspection Tour

On May 15, 1984, NRC Commissioner James K. Asselstine accompanied by James G. Keppler, Administrator of the Region III Office, John Austin, Technical Assistant to the Commissioner, and D. W. Hayes, Chief, Reactor Projects Section 1B, Region III, observed a team of Byron Station Operators conducting a demonstration on the Byron/Braidwood Simulator and the CECo Production Training Center, Braidwood, Illinois. After touring the Production Training Center and Simulator they traveled to the Byron Station where representatives of the local intervenor's groups were introduced and CECo managers gave a presentation on the Byron Station including corporate and station project organizations, project staffing, construction manhours, project construction contractors, manpower allotments, construction status, project costs, schedule milestones, station staffing experience levels, shift manning, operator licensing status, operating shift experience, shift advisor training and licensing issues.

Following the CECO presentation, NRC personnel toured the Byron Station facilities including the technical support center, shift Engineer's office, control room, security control center, chemistry labs, counting rooms, Unit 1 containment including the interior of the pressurizer missile barrier, refueling cavity, refueling bridge, reactor vessel and head, seal table room, the fuel storage area, emergency core cooling pump rooms, remote shutdown panel, primary sample room and diesel generator 1A. Upon completion of the tour, the Commissioner addressed the parties in a question and answer session in the Station Superintendent's office on issues before the Commission and of interest to the parties. Before departing, the Commissioner held a one half hour news conference in the Byron Training Center where he responded to questions from the representatives of the local news media.

10. Plant Tours/Housekeeping

The inspectors conducted plant tours on May 1, 3, 5, 7, 10, 12, 15, 22, 24, and 31, 1984. The areas of the plant observed during the tours included Unit 1 and 2 containments, fuel handling and storage areas, auxiliary building areas including the control room, centrifugal charging pump, positive displacement charging pump, safety injection pump cubicles, and diesel generator B room. Areas were inspected for work in progress, state of cleanliness resulting from lagging work, overall housekeeping, state of fire protection equipment and methods being employed, and the care and preservation of safety-related components and equipment. The inspectors were accompanied by licensee personnel on portions of the tours for the purpose of identifying areas where additional housekeeping efforts should be concentrated to bring the overall cleanliness state of Unit 1 spaces up to par with the current state of construction. Inspector concerns were related to the licensee. No items of noncompliance were identified.

11. Exit Interview

The inspector met with licensee representatives denoted in Paragraph 1 at the conclusion of the inspection on June 1, 1984. The inspector summarized the purpose and the scope of the inspection and the findings.