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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-456/85024(DRP); 50-457/85025(DRP)

Docket Nos. 50-456; 50-457 Licenses No. CPPR-132; CPPR-133

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

Facility Name: Braidwood Station, Units 1 and 2

Inspection At: Braidwood Site, Braidwood, Illinois

Inspection Conducted: May 6 through June 21, 1985

Inspector: L. G. McGregor

Approved By: W. S. Little, Director
Braidwood Project

7/10/85
Date

Inspection Summary

Inspection on May 6 through June 21, 1985 (Report No. 50-456/85024(DRP); 50-457/85025(DRP))
Areas Inspected: Routine, unannounced safety inspection of licensee actions on previous inspection findings, preoperational test procedure reviews, preoperational test performance, preoperational test results evaluation and inspection of equipment to support the handling of nuclear fuel. The inspection consisted of 317 inspector-hours onsite by one NRC inspector, including 36 inspector-hours onsite during offshifts.
Results: Of the five areas inspected, no items of noncompliance or deviations were identified.

IE01

DETAILS

1. Persons Contacted

   Commonwealth Edison Company (CECo)

   *M. Wallace, Project Manager
   *L. M. Kline, Project Licensing and Compliance Superintendent
   *C. W. Schroeder, Project Licensing and Compliance Superintendent
   *D. L. Cecchett, Project Licensing and Compliance Engineer
   *G. F. Marcus, Assistant to Manager of Projects
   F. Lotarski, Field Engineer
   *C. Tomashek, Project Startup Superintendent
   R. Letko, Startup Group Leader
   *R. Kyroual, Operations Quality Assurance Supervisor
   *T. E. Quaka, Site Quality Assurance Superintendent
   *D. A. Boone, Construction Engineer
   *W. E. Vahle, Project Field Engineering Manager

   Nuclear Regulatory Commission

   *L. G. McGregor, Operations Senior Resident Inspector
   *W. S. Little, Chief Reactor Projects Branch
   *P. R. Pelke, Project Inspector
   *R. D. Schulz, Construction Senior Resident Inspector

   *Denotes those attending exit meetings.

   Additional licensee and contractor personnel were contacted during the course of the inspection.

2. Licensee Actions on Previously Identified Items

   a. (Closed) Part 21 Report 82-01 and 10 CFR 50.55(e) 82-02. Cooper Energy Services notified the NRC by letter on February 1, 1982, that the emergency diesel generators at Byron and Braidwood each contain a defective strainer basket located in the lube oil strainers. Performance testing indicated that the strainer mesh disintegrates after it tears and could then pass through the engine bearings. If this were to occur, one or more engine bearings would probably fail and the unit would be incapable of performing its intended function. On April 23, 1982, Commonwealth Edison reported, to the NRC Region III Office, this defect in the Byron and Braidwood diesel generators lube oil strainers pursuant to 10 CFR 50.55(e) and assigned control number 82-02 for Braidwood. The licensee submitted a final written report on May 11, 1982. Cooper Energy Service has designed and tested a new strainer basket. The licensee committed to install the new strainers in all four Braidwood diesels prior to fuel load. Field Change Orders

1DG-534 and 1DG-535 were written for the Unit 1 diesels and the new strainer baskets were installed (See NRC report 84-21). Field Change Orders 2DG-9472 and 2DG-9473 were initiated for Unit 2 and the work was completed on November 9, 1984. Based on the completion of the strainer basket replacement for all four diesel generators at Braidwood and the review of the installation process the inspector considers this item to be closed.

b. (Closed) Part 21 Report 83-01. General Atomic Technologies, Inc. notified Commonwealth Edison Company by letter on January 25, 1983, that one of their radiation monitoring systems indicated an intermittent lock-up of the RM-23 display. The lock-up apparently causes the "Channel Activity" display to freeze at the most recent activity value for each channel. CECo Engineering has reviewed these systems and has determined that the model RM-23 displays are in use on safety-related systems at the Byron and Braidwood Stations. GA Technologies has reworked and tested eighteen Braidwood RM-23 modules to correct the intermittent lock-up, initially identified as a reportable defect per 10 CFR 21, and returned these modules to Byron for installation on August 31, 1983. The previously installed RM-23 modules at Byron were shipped to GA Technologies for modification and were returned to Braidwood on July 18, 1984, for installation. To date, all but two RM-23 modules have been installed. This item is considered to be closed.

c. (Closed) Part 21 Report 83-03. In their June 17, 1983 letter to NRC Region III, Elcen Metal Products Company reported a potential 10 CFR Part 21 deficiency in that certain spring hangers were supplied by Elcen with welded high carbon steel nuts having carbon content in excess of the applicable ASME Section III Code. These hangers have a high carbon steel nut welded to a low carbon steel turnbuckle. Excessive carbon content could result in embrittlement and premature failure of the nut weld. Failure of this weld would unload the hanger and would result in increased primary stresses on safety-related piping. The specific safety implications of such increased stress levels could only be determined with case-by-case piping analysis.

It has been determined that fourteen hangers at Braidwood have this deficiency. These hangers were placed in a "hold area" and were not to be installed pending the results of the evaluation. The completion of Elcen's analysis resulted in a replacement shipment of spring hangers for the fourteen hangers which did not meet the ASME Code Section III, Subsection NF. An evaluation and analysis of the remaining variable spring hangers was performed. This analysis concluded that the variable spring hangers would meet the load capacity data sheet specification and therefore were acceptable for use. All Elcen spring hangers which contain welded nuts with a carbon content in excess of 0.35% have been replaced. Those spring hangers with welded nuts with a carbon content less than 0.35% have been accepted based on more recent editions of the ASME BPV Code and applicable code cases. The inspector considers this item to be closed.

d. (Closed) Part 21 Report 83-05. Southwest Fabricating and Welding Company notified the NRC by letter on June 24, 1983, of an apparent failure to comply with the requirements of ASME Code Section III prior to radiography. The piping subassemblies were branch connections at 45 degree laterals with reinforcing pads and radiography was performed prior to installing these reinforcing pads. Weld quality was indeterminate due to surface irregularities that may mask defects for the Braidwood Station. Twenty four pipe isometric drawings were identified with piping subassemblies that incorporate reinforced welded branch connections requiring radiography and NPT Class 2 code stamping which are subject to review and evaluation of the radiographic records.

   Commonwealth Edison has reviewed the affected radiographs and has determined the problem does not exist at the Braidwood Station. Based on Commonwealth Edison's conclusions that the radiographs were within code limits and there were no indications which could mask defects the inspector considers this item to be closed.

e. (Closed) 50.55(e) 80-02. Westinghouse Electric Corporation notified the licensee, by letter dated November 5, 1980, regarding problems that were encountered when testing the Westinghouse Electro-Mechanical Division manufactured three inch gate valves, model 3GM88, 1500 lb. class. The valves tested failed to completely close under preoperational test conditions which are less severe than the equipment specification design conditions.

   These valves are furnished to customers in Code Class 1, 2 and 3 applications. In addition to the Model 3GM88, the later redesign version, model 3GM99, may be subject to the same problem.

   On November 6, 1980, the subject deficiency was reported verbally to the NRC Region III office and by letter (50.55(e) report 80-02) on December 2, 1980. Westinghouse advised the licensee that valves similar to those that failed the test have been supplied for use at the Byron and Braidwood Stations. Two such valves in each of the four units are installed in "active" applications. The valves are containment isolation valves on the charging line, CV8105 and CV8106.

   On April 9, 1981, the Nuclear Regulatory Commission issued IE Bulletin No. 81-02 "Failure of Gate Type Valves To Close Against Differential Pressure" and requested certain actions to be taken by Construction Permit Holders. The licensee responded to this Bulletin in depth for each operating nuclear station and nuclear station under construction. The report identified the affected valves, their planned service, the maximum differential pressure at which these valves would be required to close, the safety consequences of the valves failure to close and the planned corrective action required.

On June 18, 1981, NRC Region III was notified by the licensee (50.55(e) report 81-03) that possible safety deficiencies on the failure of certain Westinghouse EMD gate valves (3" to 4") to close under design pressures to include size 3" through 18" valves. Westinghouse had extended this evaluation to include all of the remaining W-EMD manufactured valves sizes. The results of this analysis predicts that closure problems could also be anticipated with these valves which include 6, 8, 10, 12, 14, 16, and 18 inch and 3 and 4 inch low pressure valves.

On August 18, 1981, The NRC issued IE Bulletin No. 81-02, Supplement No. 1, requesting additional information. The licensee responded to Supplement No. 1 on November 9, 1981 with: (1) the "consequence of failure" descriptions were modified in accordance with Westinghouse determination and, (2) six valves were added to the list.

The licensee submitted a response to IE Bulletin 81-02 Supplement No. 1 (90 day response) and a Supplemental Response to 50.55(e) 81-03 on November 16, 1981. The schedule for completion of the Braidwood Units 1 and 2 modifications would be determined and submitted by April 1, 1982. On March 25, 1982, the licensee notified NRC Region III of the specific modifications required as a result of Bulletin 81-02, Supplement No. 1 and the final response to 50.55(e) deficiency report 81-03. The enclosure to this letter identified the modifications required for Braidwood Units 1 and 2. The licensee anticipated that modifications would be completed by April 1, 1983; however, this schedule is dependent upon the installations schedule for the affected valves.

NRC inspection reports 50-456/82-04, 50-457/82-04; 50-456/82-08, 50-457/82-08; 50-456/83-16, 50-457/83-15 and 50-456/84-04; 50-457/82-04 address the licensees documentation, review of application of subject valves, and the schedule for implementing the corrective actions. The hardware modifications performed on specific motor operators, (Westinghouse Field Change Notice Nos. 10568 and 10552) and two FCNs 10589 and 10570 for software modifications have been completed at Braidwood and the operational test conducted during fluid flows for all valves was completed on February 2, 1985. Based on the above actions the inspector considers the following items closed: (1) 10 CFR 50.55(e) - 80-02; (2) IE Bulletin 81-02; (3) IE Bulletin 81-02 Supplement No. 1; (4) 10 CFR 50.55(e) 81-03; and (5) NRC Unresolved Item 50-456/83-16-01; 50-457/83-15-01.

f. (Closed) IE Bulletin 81-02. See Paragraph e.

g. (Closed) IE Bulletin 81-02 Supplement No. 1. See Paragraph e.

h. (Closed) 10 CFR 50.55(e) 81-03. See Paragraph e.

i. (Closed) NRC Unresolved Item 50-456/83-16-01; 50-457/83-15-01: Successful testing of Westinghouse valves. See Paragraph e.

j. Allegation

(Closed) RIII-85-A-0082: On April 19, 1985, the inspector received a telephone call from the Region III Duty Officer informing the inspector that the Region had received an allegation from an employee working for the Phillips Getschow Company. The employee felt he had been terminated from his quality control training duties by the Phillips Getschow Site manager. The terminated employee also feels that the production department (Phillips Getschow Site Manager) should not make recommendations or requests to the Quality Control Department regarding the termination of Q. C. employees.

NRC Findings

The inspector interviewed the employee, via telephone, to confirm his statement. The individual did state that on one occasion he was sleeping and that the Phillips Getschow Site Manager had, on at least one occasion, observed him whittling on a pen with his pocket knife.

The inspector interviewed the Senior Site Manager for the Daniel Construction Company. The terminated employee actually worked for Daniel and was on loan to the Phillips Getschow Quality Control Department. Daniel only provides QC personnel to the Braidwood site and does not perform any production activities.

The Daniel Site Manager stated he had received a formal request from the Phillips Getschow Supervisor of Quality Control that the subject employee be terminated from his Q. C. training status. The request stated that this employee (1) did not show enthusiasm toward his training, (2) was wasting a lot of time, (3) was found sleeping at 8:15 a.m. when he should have been reading and studying procedures, and (4) was found whittling on a pen with a pocket knife while his supervisor was absent from the study area. The Daniel Site Manager had previously received a complaint from the Phillips Getschow Quality Control Department that the subject employee was not "measuring up" to the quality work standards of Phillips Getschow. At that time, the Daniel Site Manager talked with the subject employee and emphasized to him the need for him to come up to par on his training activities and show an interest in his training to maintain his job. The subject employee stated to the Daniel Site Manager that he would try to do a better job.

The individual was not certified at the Braidwood site and performed no inspections on safety-related equipment. This allegation is considered to be closed.

3. Preoperational Test Review

The inspector reviewed portions of the following preoperational test procedures against the FSAR, SER and Regulatory Guide 1.68:

BwPT-PR-11, Revision 0, "Process Radiation Monitoring - Loop 1"

BwPT-PR-11 is written to demonstrate that the RM-80's, RM-23's and the RM-11 radiation monitors properly indicate and alarm the monitored channels status and channel status changes for normal and abnormal conditions. Actuation of the check source, verification of proper operation under varying electrical power conditions and pump control by remote, automatic and manual operation will be demonstrated. This test procedure is comprised of ten volumes and the review has not been completed at this time. The completion of this review will be documented in a subsequent inspection report.

BwPT-PR-12, "Revision 0, "Process Radiation Monitoring - Loop 2"

This preoperational test procedure is composed of three volumes and was written to demonstrate the proper operation of the RM-80's and RM-11 to indicate and alarm the monitored channels status and all channel status changes. The test will also demonstrate actuation of the check source and verify proper operation of the RM-80 battery packs during a power failure event. The review process will continue during the next reporting period and will be subsequently documented in an inspection report.

No violations or deviations were identified.

4. Preoperational Test Performance

The inspector witnessed the performance of portions of the following preoperational test in order to verify that testing is conducted in accordance with approved procedures, independently verify the acceptability of test results and evaluate the performance of licensee personnel conducting the test.

BwPT-WO-10, Revision 0, "Control Room Chilled Water System"

During testing of the controls associated with the system, a concern was identified during remote operation from the control room. The control relays would not energize in the hold in position and were chattering. The cause was identified as a voltage drop in the control circuit from 125V DC to 70V DC. The licensee's temporary modification to continue with the test was to jumper in extra wires where possible. This increased the current carrying capacity and allowed the unit to be started from the remote control station.

The resident inspector notified the licensee that their actions were unsatisfactory and that further engineering review and analysis of the remote control circuits were necessary to satisfactorily conclude WO-10 testing. This is considered an unresolved item and has been reviewed by a regional inspector in Report Nos. 456/85028; 457/85028.

No violations or deviations were identified.

5. Inspection of Equipment

The inspector examined the installation of the polar cranes in Unit 1 and Unit 2 to verify proper installation to support the handling of equipment necessary to accept nuclear fuel. The polar crane is supported by brackets and tiebacks at each ten degree increment around the containment building. During the inspection, loose bolts (types A410, A490, A325, and A307) were noted at numerous brackets and tiebacks. Also indications of loose crane rail hold down bolts were found and shim plates or spaces extended four to five inches beyond the bolted connections. Inspection forms were reviewed which indicated that all bolting was installed correctly and properly torqued. The licensee's Quality Assurance department is re-evaluating the previous inspections and immediate corrective action has been instituted by the licensee.

No violations or deviations were identified.

6. Exit Interview

The inspector met with licensee and contractor representatives denoted in Paragraph 1 during and at the conclusion of the inspection on June 21, 1985. The inspector summarized the scope and results of the inspection and discussed the likely content of this inspection report. The licensee acknowledged the information and did not indicate that any of the information disclosed during the inspection could be considered proprietary in nature.