



Commonwealth Edison

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September 24, 1987

Mr. A. Bert Davis
Regional Administrator
U.S. Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

Subject: Dresden Station Units 2 and 3
Response to Inspection Report Nos.
50-237/87-006 & 50-249/87-011
NRC Docket Nos. 50-237 and 50-249

Reference (a): J. J. Harrison letter to Cordell Reed,
dated July 27, 1987.

(b): I. M. Johnson (CECo) letter to A. B. Davis
dated August 20, 1987.

Dear Mr. Davis:

The reference (a) letter documents the results of a special safety inspection conducted by Mr. I. T. Yin and Mr. J. A. Gavula of your office on January 14, 1987 through July 17, 1987 of activities at Dresden Nuclear Power Station Units 2 and 3.

During the course of that inspection, certain activities appeared to be in noncompliance with NRC requirements. Attachments A through D to this letter contain our responses to the violations. Reference (b) requested a 30 day extension for this response.

Commonwealth Edison understands the significance of the issues identified in the Notice of Violation and has implemented comprehensive corrective actions to prevent recurrence. These programs have been presented to the Region and NRR at several previous meetings and regular status reports have also been provided.

If there are any further questions regarding this matter, please contact this office.

Very truly yours,

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PDR
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M. S. Turbak
Assistant Licensing Manager

Attachment

cc: M. Grotenhuis - NRR
NRC Resident Inspector - Dresden
3620K/bs

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ATTACHMENT A

COMMONWEALTH EDISON COMPANY
RESPONSE TO NOTICE OF VIOLATION

DISCUSSION

During inspections conducted between January 14 and July 17, 1987 at Dresden Station, at the offices of Sargent and Lundy Engineers, and at Nutech Engineers, Inc., two violations were identified. These violations reflected original design deficiencies as well as a weakness in design control and ability to accomplish activities in accordance with documented drawings or procedures. The non-compliances are documented in detail in your Inspection Report Nos. 50-237/87006 and 50-249/87011, in meetings with NRR in Bethesda, Md. on April 16, 1987 and in Chicago on May 7, 1987, and in letters from I. M. Johnson to T. E. Murley on May 13, 1987 and to A. B. Davis on June 13, 1987. The causes of the violations were original design deficiencies (Items 1a. and 2a.), insufficient control of modifications regarding as built drawings and design analysis (Items 1b, 1c, and 2b), and procedural deficiencies (Items 1d, 1e, and 1f).

In the following sections of this response, each item of violation is first repeated from the Reference (a) Inspection Report, then followed by a discussion of the corrective actions taken and results achieved for the respective violation (Attachments B and C). Finally the corrective actions to avoid recurrence and dates of full compliance are summarized for both violations (Attachment D).

ATTACHMENT B

ITEM OF VIOLATION:

1. 10 CFR 50, Appendix B, Criterion V, as implemented by CECO Topical Report CE-1-A, "Quality Assurance Program for Nuclear Generating Stations," and CECO Corporate Quality Assurance Manual, Nuclear Generating Stations, "Quality Requirements," requires that activities affecting quality shall be prescribed by documented procedures and drawings and shall be accomplished in accordance with these procedures and drawings. Procedures shall include appropriate quantitative acceptance criteria for determining that activities have been satisfactorily accomplished.

Contrary to the above, certain activities were not accomplished in accordance with documented drawings and inadequate drawings and procedures were prescribed for certain activities in that:

- a. Structural steel connections inside the drywell were not accomplished in accordance with the General Electric drawings. Certain beam connections had missing welds, missing bolts or welds that were apparently cut so they were no longer effective. This caused nine connections to exceed the allowable design stress limits. (237/87006-01A; 249/87011-01A)
- b. Unit 2 Drywell Structural Beam R-19 was removed and reinstalled as part of a pipe repair procedure. The reinstallation process mistakenly left a 1 inch by 1 inch notch in the flange of this beam. The reinstallation was not accomplished in accordance with the design drawings. This caused the beam to exceed the allowable design stress limit. (237/87006-01B)
- c. Support M-3208-08 was installed 13 inches outside the tolerance specified for this support. In addition, Support 1403-M-201 was not removed from the piping system as specified on Drawing M-3208-08. (237/87006-01C; 249/87011-01B)
- d. Procedure DTP-2 "In-Service Inspection Plan" Revision 2, March 1985, and DAP 11-8 "Non-Destructive Testing (In-Service Inspection)," Revision 3, August 1985, did not prescribe adequate instructions or acceptance criteria concerning spring can settings. (237/87006-01D; 249/87011-01C)
- e. Drawing ISI-200, Sheet 1 of 3, Revision A, February 15, 1980, did not include new supports, deleted supports or new support numbers that resulted from IE Bulletin 79-14 and Mark I modifications.

Without accurate drawings, the in-service inspections for component supports could not be adequately accomplished. (237/87006-01E; 249/87011-01D)

- f. The visual examination deficiency for Support 1403-M-201 was not promptly communicated to the engineers performing an operability analysis of the same piping system. There were no procedures that prescribed the required corrective actions. (237/87006-01F; 249/87011-01E)

Corrective Actions Taken and Results Achieved for First Violation

1. a. As a result of the discrepancies found during a modification walkdown, every main frame structural steel connection inside the Unit 2 drywell was inspected. All of the discrepancies discovered met the operability criteria. However, nine (9) connections exceeded Final Safety Analysis Report (FSAR) criteria. These 9 connections and an additional 53 connections were upgraded to standard fabrication details even though the latter connections met FSAR criteria. The Engineering Change Notices showing these repairs have been incorporated into the structural drawings. The revised drawings were issued on September 9, 1987.

A limited walkdown was conducted on Unit 3 during a short maintenance outage in February, 1987. The connections which were inspected met operability criteria. However, six connections on four tangential beams exceeded FSAR stress limits. Due to the limited nature of the outage, no repairs were performed. All structural steel connections in the Unit 3 drywell will be inspected during the upcoming refueling outage scheduled for January, 1988. The six connections previously identified as exceeding FSAR limits will be repaired during this outage as well as any other connections requiring repairs based on the comprehensive walkdown.

- b. The deficiency in the radial beam was corrected by welding a stiffening plate to the channel (WR #D62600). This repair returned the beam to within FSAR stress limits. The new CECO modification program, initiated in May, 1987, should prevent recurrence of this type of deficiency (see CECO response to the NRC's Safety Systems Outage Modification Inspections, dated June 23, 1987 from M. S. Turbak).
- c. As stated in the Inspection Report, the short term corrective actions on Unit 2 consisted of removing support 1403-M-201 and reinforcing the embedment plate for support M-3208-08 such that the loads resulting from the as-built configuration would be accommodated. Corrective action programs consisted of a design interface review, field verification of as-built Core Spray piping/supports, discrepancy reviews and re-analysis as necessary.

The Piping Configuration Verification Program, which includes all large bore (greater than 4 inch) safety-related piping analyzed by Nutech during the Mark I Torus Attached Piping Program, is still ongoing. CECO will continue to provide bi-weekly status reports on this program to Region III. This program is expected to be completed for Dresden by July, 1988.

- d. Spring can settings are verified per Dresden Technical Procedure (DTP)-2 "Inservice Inspection Plan." Revision 6 of DTP-2 implemented on July 22, 1987 requires that any variations from the setting identified on the support are now evaluated by both the station Technical Staff and the on-site corporate engineering representative. Work requests are written as required to correct any problems encountered. While evaluation of all variations is conservative and eliminates the need for a specified tolerance, CECO concurs that additional guidance concerning acceptable limits is desirable. Currently, corporate engineering is evaluating a generic application of a set tolerance from hot (design) loading and total design travel. Once this evaluation is complete and a tolerance is provided, DTP-2 will be revised to include a step for evaluating as-found settings for acceptability. This procedure is expected to be in place by June, 1988.
- e. All of the Class I, II, and III ISI isometric drawings have been revised to reflect as-built conditions. "No-Action" supports (those whose presence or absence does not result in an overstress condition) are also identified on the revised ISI drawings.
- f. DTP-2 was revised (Revision 6) on July 22, 1987 to require that a work request, which specifically identifies the deficiency, be generated by the ISI Coordinator and routed to the on-site corporate engineering representative prior to being sent to the Shift Engineer to assist corporate engineering in evaluating system trends and improving communications with Architect/Engineers.

ATTACHMENT C

ITEM OF VIOLATION:

2. 10 CFR 50, Appendix B, Criterion III, as implemented by CECO Topical Report CE-1-A, "Quality Assurance Program for Nuclear Generating Stations," and CECO Corporate Quality Assurance Manual, Nuclear Generating Stations, "Quality Requirements," requires that measures shall be established to assure that the design bases are correctly translated into drawings.

Contrary to the above, the design bases were not correctly translated into drawings in that:

- a. The fabrication drawing for embedment plates incorrectly specified an 18 inch spacing for anchor straps instead of 9 inches. The embedment plates were subsequently fabricated different from the design basis causing three plates to exceed the design stress limit. (237/87006-02A; 249/87011-02A)
- b. The Core Spray System piping analysis performed by Nutech Engineers inaccurately specified the stress intensification factor for a tee and modeled a new restraint and incorrectly specified schedule 30 instead of schedule 80 piping. These errors contributed to the pipe exceeding the design stress limits. (237/87006-2B; 249/87011-2B)

Corrective Actions Taken and Results Achieved For Second Violation

2. a. As discussed in the Inspection Report, a comprehensive Embedment Plate Assessment Program was conducted to resolve the deficiencies. The only remaining item concerns the evaluation of supports inaccessible during plant operation. A conference call between J. Gavula of the NRC and I. Johnson and S. Javidan of CECO was held on September 17, 1987 to discuss excluding these supports from the evaluation based on the numbers and locations of the supports. CECO agreed to send the NRC a letter detailing the number of supports and their locations for each unit. This letter will be issued by September 30, 1987. No additional action will be taken pending resolution of this item.
- b. As stated in the Inspection Report, several corrective action programs have been conducted by CECO in response to the Core Spray System deficiencies. The deficiency identified in the design interface review and the field walkdown review was resolved prior to the restart of Unit 2 for Cycle 11.

The Piping Configuration Verification Program, which includes all large bore (greater than 4 inch) safety-related piping analyzed by Nutech during the Mark I Torus Attached Piping Program, is ongoing. The status of this program is addressed in the response to Violation 1c.

ATTACHMENT D

SUMMARY OF ACTIONS TAKEN TO PREVENT RECURRENCE

The comprehensive programs conducted to review drywell structural steel connections and embedment plates should ensure that similar deficiencies which occurred during original construction do not remain undetected.

The implementation of the new modification program described in the CECO presentation to Region III on February 26, 1987 should preclude the recurrence of similar events associated with as-built drawings, design analysis and procedures. In particular, the new program requires pre-job and post-job walkdowns to verify as-found and as-modified piping. These walkdowns include the contractor, the architect/engineer and the cognizant CECO engineers. In addition, a post modification document control checklist is used to identify procedures, drawings and training required for completion of the modification. The checklist requires review and approval by the Technical Staff Supervisor, Quality Control Supervisor, and Station QA Superintendent prior to close-out of the modification. All items listed on the checklist must be updated prior to the final approvals, thus incorporating the modification into the design basis of the station.

Design interface documents were in place during the Mark I work and we believe the discrepancy concerning the unanalyzed support was an isolated case. However, since the time of that modification, a CECO A/E Guidebook revision was made on March 18, 1987 which specifically defines A/E interface requirements and uses piping stress analyses as a primary example.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED FOR ALL ITEMS

We believe that the corrective actions completed to date, including the implementation of the new modification program, are sufficient to prevent recurrence of these and similar events and that we are in full compliance with regulatory requirements for Items 1b, 1d, 1e, and 1f.

Based on the approach previously presented to you for the piping verification program and the structural steel evaluations and the operability analyses performed to date, we believe we are in full compliance with regulatory requirements for Items 1a, 1c, 2a, and 2b. Verification of full compliance for these items will be achieved when the Unit 3 drywell structural steel connections are evaluated during the 1988 refueling outage and when the piping configuration program is completed in July 1988.