



Commonwealth Edison

One First National Plaza, Chicago, Illinois
Address Reply to: Post Office Box 767
Chicago, Illinois 60690

DMB

February 13, 1985

Mr. James G. Keppler
Regional Administrator
U.S. Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

Subject: Braidwood Station Units 1 and 2
Response to Inspection Reports Nos.
50-456/84-34 and 50-457/84-32
NRC Docket Nos. 50-456 and 50-457

Reference (a): R. F. Warnick letter to Cordell Reed
dated December 31, 1984

Dear Mr. Keppler:

This letter is in response to the inspection conducted by Messrs. R. Gardner and R. D. Schulz on November 12 through December 19, 1984, of construction activities at Braidwood Station. Reference (a) indicated that certain activities appeared to be in noncompliance with NRC requirements. Our response to these items is provided in the enclosure to this letter. As noted in Reference (a), no response to the Notice of Violation Item 3 was required. The delay in providing this response was discussed with W. L. Forney of your office on January 24, 1985.

Should you or your staff have any questions regarding this matter please contact this office.

Very truly yours,

Dennis L. Farrar
Director of Nuclear Licensing

Enclosure

cc: NRC Resident Inspector

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ENCLOSURE

COMMONWEALTH EDISON COMPANY

RESPONSE TO INSPECTION REPORT

50-456/84-34 AND 50-457/84-32

ITEM 456/84-34-01 AND 457/84-32-01

ITEM OF NONCOMPLIANCE

1. 10 CFR 50, Appendix B, Criterion IX, states in part that measures shall be established to assure that special processes, including welding, are controlled and accomplished in accordance with applicable codes and specifications.

Sargent and Lundy Specification F/L-2782, HVAC Work, June 6, 1983, commits to either AWS D1.1, 1977 or AWS D1.3, 1978 for the welding of stiffener angles, companion angles, or support angles to the duct.

Structural Welding Code, AWS D1.1 and Specification For Welding Sheet Steel In Structures, AWS D1.3 require that welds upon visual inspection contain no cracks.

Contrary to the above, the following safety-related companion angle to duct welds were completely cracked resulting in no bonding between the weld metal and companion angle:

duct 4032 - 1 weld
duct 4024 - 5 welds
duct 4684 - 4 welds
duct 4686 - 3 welds

RESPONSE

Commonwealth Edison agrees that certain silicon bronze shop welds have broken between the companion angle and the sheet metal on fabricated ducts. Our investigation indicates that this occurred after shop quality control inspections were performed. It is suspected that silicon bronze welds separated from the companion angle as a result of excessive loads being imposed during erection and other construction activities in the vicinity of the ductwork.

ITEM 456/84-34-01 AND 457/84-32-01

CORRECTIVE ACTION TAKEN AND RESULTS ACHIEVED

Commonwealth Edison has initiated NCR 701 to address the concerns identified in the breaking of silicon bronze shop welds between companion angles and sheetmetal. This NCR is currently in Commonwealth Edison Project Engineering for review and disposition. As part of the NCR disposition, the Architect Engineer will review the identified broken welds to determine the mechanism of failure, the possible design significance, and a determination for re-inspection of past work completed by Pullman Sheet Metal. Pullman Sheet Metal will repair known broken welds through established procedures.

CORRECTIVE ACTION TAKEN TO AVOID FURTHER NON-COMPLIANCE

Commonwealth Edison has directed each Contractor to review their administrative and erection procedures to assure the necessary guidance regarding rigging practices and protection of plant equipment are included in their procedures. Additionally, each Contractor was directed to review at safety meetings and/or training classes the need for "attention to detail" and appropriately train their employees regarding the correct protection of equipment.

Currently, Pullman's Q.C. inspection of various attributes for duct installation includes gasketing and companion angle bolting inspection. During this inspection, the existence of broken welds would be noticed, reported and subsequently repaired prior to acceptance of the item. However, to ensure the inspector will verify the integrity of the companion angle to duct weld, Pullman Procedure B10.3F "Installation Inspection Procedure" will be revised to inspect for broken silicon bronze shop welds between companion angles and sheetmetal. Additional corrective action may be taken, pending Commonwealth Edison Engineering and the Architect Engineer's evaluation and recommendations.

DATE OF FULL COMPLIANCE

At this time, date of full compliance cannot be determined pending final evaluations of NCR 701 and determination of the extent of corrective action.

Pullman Procedure B10.3F "Installation Inspection Procedure" is expected to be complete by March 1, 1985.

Repair of known broken welds is expected by March 29, 1985.

COMMONWEALTH EDISON COMPANY

RESPONSE TO INSPECTION REPORT

50-456/84-34 AND 50-457/84-32

Item 50-456/84-34-03 and 50-457/84-32-03

2. 10 CFR 50, Appendix B, Criterion V, stated in part that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances.

Sargent and Lundy Specification F/L-2739, July 5, 1977, Amendment 6, Piping System Installation, commits to AWS D1.1, Structural Welding Code, 1975, for AISC safety-related steel welds not under the jurisdiction of the ASME Boiler and Pressure Vessel Code, Section III, Subsection NF.

Contrary to the above for AISC safety-related steel welds, not under the jurisdiction of the ASME Boiler and Pressure Vessel Code, Section III, Subsection NF, the piping contractor did not have an AWS D1.1, Visual Weld Examination Procedure.

RESPONSE

Sargent & Lundy (S&L) Specification F/L-2739, July 5, 1977, Amendment 6, Piping System Installation, established the governing codes for pipe support installation. Specifically Form 275-C, articles 2.1 and 2.2 delineate the applicable installation code. Article 2.1 specifies that supports for piping systems except for those specified in Article 2.2 shall be installed in accordance with ASME NF or ANSI B31.1. Article 2.2 specifies supports not under the jurisdiction of ASME or ANSI Codes (non safety related class "N" or "W") shall be in accordance with the requirements of the AISC Manual of Steel Construction and AWS D1.1 - Structural Steel Welding Code. Class N or W piping/supports are not used at Braidwood.

Even though the S&L drawings do not explicitly identify the applicable code installation and inspection requirements beyond the NF boundary, they do identify the applicable pipe class. Therefore, in accordance with Form 275-C, component support installation not specifically designated as ASME NF are under the jurisdiction of ANSI B.31.1.

Item 50-456/84-34-03 and 50-457/84-32-03

A comparison between ANSI B31.1 safety-related and ASME-NF inspection acceptance criteria in Phillips Getschow Procedure VE-01 shows that porosity is the only design significant attribute missing from Procedure VE-01 ANSI B31.1 safety-related inspection criteria. Although crater pits are not specifically identified in Procedure VE-01 as an inspection attribute for ANSI B31.1 safety-related supports, pits of any significant size would affect weld size, which is an inspected attribute. Therefore, craters of design significance would be identified utilizing the existing criteria.

CORRECTIVE ACTION TAKEN AND RESULTS ACHIEVED

It is Commonwealth Edison's position that this violation is limited to a lack of procedural consistency relative to the inspection attribute of porosity and does not impact the adequacy of the component supports involved. The specific issue of porosity will be resolved in the following manner:

Phillips Getschow Company will identify all welding inspectors who visually inspected welds within the scope identified. Each inspector will be interviewed to verify the visual criteria utilized by the inspector did include porosity.

Welds inspected by inspectors no longer employed by Phillips Getschow Company will be addressed by reviewing previously accepted welds subsequently rejected by the Braidwood Construction Assessment Program (BCAP). This review will determine if an unacceptable number of welds exist which were rejected for exceeding the porosity limit of the criteria specified in ASME Section III, 1974 edition, Subsection NF paragraph NF 5342 subparagraphs b2, 3 and 4. The BCAP program provides a selected sample representative of the installation time frame and population of component supports.

Phillips Getschow Company welding inspectors certified to inspect safety-related component support welds are being re-trained to insure that each inspector is evaluating the subject welds to an acceptable criteria.

CORRECTIVE ACTION TAKEN TO AVOID FURTHER NONCOMPLIANCE

A note will be added to the Sargent & Lundy M-999 Drawings to more explicitly define the installation and inspection requirements for pipe supports beyond the NF Boundary.

Phillips Getschow Company Procedure VE-01, Visual Examination Procedure, is being revised to incorporate a single inspection criteria. This criteria will be based on ASME Section III Subsection NF.

DATE OF FULL COMPLIANCE

Weld inspector interviews expected to be complete by March 1, 1985.

Rejected weld reviews and review of BCAP results expected to be complete by May 1, 1985.

Weld inspector training expected to be complete by March 1, 1985.

S&L drawing notes expected to be added by March 1, 1985.

Phillips Getschow Procedure VE-01 expected to be revised by March 15, 1985.