



Commonwealth Edison

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June 21, 1984

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

Subject: Braidwood Station Units 1 and 2
Response to Inspection Report Nos.
50-456/84-08 and 50-457/84-08
NRC Docket Nos. 50-456 and 50-457

Reference (a): R.F. Warnick letter to Cordell Reed
dated May 22, 1984.

Dear Mr. Keppler:

This letter is in response to the inspection conducted by Messrs. L.G. McGregor and R.D. Schulz on April 1 through April 30, 1984, of activities at Braidwood Station. Reference (a) indicated that certain activities appeared to be in noncompliance with NRC requirements. The Commonwealth Edison Company response to the Notice of Violation is provided in the enclosure.

If you have any further questions on this matter, please direct them to this office.

Very truly yours,

Dennis L. Farrar
Director of Nuclear Licensing

EDS/rap
Enclosure

cc: NRC Resident Inspector - Braidwood

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COMMONWEALTH EDISON COMPANY
RESPONSE TO INSPECTION REPORT
50-456/84-08 and 50-457/84-08

1. ITEM OF NONCOMPLIANCE:

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

Sargent and Lundy Specification, F/L-2735, Structural Steel, 11/25/77 commits to AWS D1.1, Structural Welding Code, 1975.

AWS D1.1, 1975, requires in Section 6, Inspection, the inspector shall examine the work to make sure that it meets the requirements of Section 3, which includes fit-up tolerances.

Contrary to the above, the Napolean Steel Contractors, Inc. Quality Assurance Program did not require fit-up inspections for safety related structural steel members joined by welds and therefore, quality control personnel did not inspect and assure acceptable gaps for weld joints.

RESPONSE:

CORRECTIVE ACTION TAKEN AND RESULTS ACHIEVED

Commonwealth Edison acknowledges that Napolean Quality Assurance Program for welding in-process inspections did not explicitly require documenting fit-up verifications. Upon review of the Napolean Steel Construction Inc. (NSCI) welding and welding inspection program, the following information is presented.

1. NSCI performed structural steel welding activities from mid-1978 to mid-1982. Welding and welding inspection activities were controlled by Procedure #5 - Welding. Section 5-3.9 of Procedure #5 stated the following regarding fit-up:

"Base metal surfaces and edges to be welded shall be smooth, uniform, and free from fins, tears, cracks, and other discontinuities which would adversely affect the quality or strength of the weld. Surfaces to be welded and surfaces adjacent to a weld shall also be free from loose or thick scale, slag, rust, moisture, grease and other foreign material that would prevent proper welding or produce objectionable fumes. Mill scale that can withstand vigorous wire brushing, a thin rust inhibitive coating, or antispatter compound may remain on the surface to be welded. All oxygen cutting shall be done in accordance with AWS D1.1-75 Section 3.2.2.

Members to be welded shall be brought into correct alignment and held in position by bolts, clamps, wedges, guy lines, struts, other suitable devices, or by tack welds until welding has been completed. The use of jigs and fixtures is recommended where practicable. Suitable allowances shall be made for warpage and shrinkage."

Discussions with the former NSCI general foreman and QA/QC inspectors disclosed they received training in Procedure #5. Additionally, these discussions disclosed welders received training in Procedure #5, and Procedure #5 was at the work stations for quick reference. Thus, welding foremen, welders and quality control inspectors were aware of the procedural fit-up requirements.

2. A review of NSCI welder qualifications show that all welders were qualified for full penetration welding. This qualified them to perform partial penetration and fillet welding. All full penetration welding was subject to ultrasonic testing (UT). Any fit-up problems would be discovered by UT. Partial penetration welding was subject to magnetic particle testing of root and final passes. Fillet welding was subject to a final visual weld inspection. NSCI quality control inspectors did monitor, at suitable intervals, the use of the proper procedure, etc. This monitoring did include fit-up checks.
3. During welding operations, Field Change Requests (FCRs) were generated by NSCI/Commonwealth Edison when structural steel fit-up could not be suitably obtained.
4. The extent of documenting welding and welding inspection has changed significantly since 1982.

Commonwealth Edison is reasonably confident that proper structural steel fit-up was completed as part of the NSCI welding program. A Commonwealth Edison Non-Conformance Report (NCR) will be prepared to provide for documented engineering evaluation of the above, and to determine whether any remedial inspection activity is required.

CORRECTIVE ACTION TAKEN TO AVOID FURTHER NONCOMPLIANCE

Other site contractors' AWS welding programs were reviewed in 1983 to ensure that fit-up inspections are completed.

DATE OF FULL COMPLIANCE

The NCR will be reviewed prior to August 15, 1984. Any remedial actions will be scheduled after disposition of the NCR. All AWS welding programs now include appropriate fit-up inspection requirements.

2. ITEM OF NONCOMPLIANCE:

10 CFR 50, Appendix B, Criterion XVI, as implemented by CECO QA Manual, QR No. 16.0, requires that measures shall be established to assure that conditions adverse to quality are promptly identified and corrected.

Commonwealth Edison Audit No. QA-20-80-22, performed on 5/30/80 and 7/10/80, stated that in-process inspections of welding activities conducted by Napolean Steel Contractors, Inc. have not been performed in sufficient depth, as no documented in-process inspection is performed on the actual weld process itself for pre-heat, interpass temperature, position, weld bead layering and interpass grinding, where a defect could conceivably be buried deep within a multi-pass weld.

Contrary to the above, Commonwealth Edison Quality Assurance identified the inspection deficiencies but failed to take corrective action with regard to Napolean Steel Contractors, Inc. past welding inspection activities to assure that defects do not exist in multi-pass welds.

RESPONSE:

CORRECTIVE ACTION TAKEN AND RESULTS ACHIEVED

Commonwealth Edison acknowledges that Q.A.Surveillance #1482 which documented the close-out of the subject audit deficiency does not clearly address the basis for considering previous multi-pass welds as being acceptable. The wording in the contractor's response to the audit item appears to indicate that the contractor believed that the subject attributes were being evaluated during in-process inspections, but were not clearly documented. It also appears that the audit item was closed out based on the lead auditor concurring with this position. However, because the record is not clear on this matter and the contractor is no longer on site, the following action has been taken or is planned:

1. A review of the welders employed by Napolean has revealed that all were qualified to perform full penetration welds. Thus, through the qualification process, each welder demonstrated that he could properly perform multi-pass welds. The welder qualification coupons were evaluated by bend test. This technique would identify the type of defects which could be expected to result from improper preheat, interpass temperature, position, weld bead layering, or interpass grinding or cleaning.

2. A Commonwealth Edison Non-Conformance Report (NCR) has been prepared to provide for documented engineering evaluation of the following information:
 - A) Full penetration groove welds performed by Napoleon were ultrasonically tested.
 - B) Multi-pass partial penetration welds were primarily two-pass welds. For all partial penetration welds, the root and cover pass welds were magnetic particle tested.
 - C) Final visual inspection was performed on single pass fillet welds.
 - D) As acknowledged in the NRC Inspection Report, Napoleon Q.C. did monitor, at suitable intervals, the use of the proper procedure, welding current and voltage of the welding machines.

It is expected that the above evaluation will resolve the question of acceptability of previous multi-pass welding and determine whether any further action is necessary.

In view of concerns with properly documented close-out, this and a similar concern on the close-out of the other deficiency in this audit (in another NRC Report), corrective action will be taken to address other possible cases where audit deficiencies were closed without properly documenting the acceptability of previous work. Specifically, all Commonwealth Edison Site Q.A. deficiencies for 1980 audits at Braidwood Station will be reviewed to assure properly documented close-out. The focus of this review will be to assure that the acceptability of past work was documented. If cases are identified in other audits where acceptability of past work was not considered, the sample will be expanded.

CORRECTIVE ACTION TAKEN TO AVOID FURTHER NONCOMPLIANCE

Over the course of the last several years, Commonwealth Edison has made changes to enhance our Audit Program. These enhancements have addressed both the way in which audits are performed, and the method of reviewing corrective actions for close-out of deficient items.

Also, the Commonwealth Edison Quality Assurance Manual Procedures Q.P. 18-1 and Q.P. 18-51 were revised in July, 1983 to include the following:

"Audit deficiencies shall be closed only after corrective action completion has been verified."

In an effort to reinforce the importance of addressing past work when closing audit items, coverage of the proper evaluation and documentation of past work in the close-out of audit items will be added to the training outline for the CECO auditor training course.

DATE OF FULL COMPLIANCE

Our expected date for completion of the above is August 15, 1984.

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