



May 31, 1983

Docket No. 50-461

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

Subject: Potential Deficiency 83-02
10CFR50.55(e)
Counterboring of Safety Related Pipe

Dear Mr. Keppler:

On January 13, 1983, Illinois Power verbally notified Mr. F. Jablonski, NRC Region III (ref: IP memorandum Y-14090, 1605-L, dated January 13, 1983) of a potentially reportable deficiency per 10CFR50.55(e) concerning procedural controls for inspection of field counterboring of safety related pipe. This initial notification was followed by one (1) interim report (Ref: IP letter U-10029, D. P. Hall to J. G. Keppler, dated February 16, 1983, file 1605-L). Our investigation of this matter continues, and this letter represents an interim report in accordance with 10CFR50.55(e)(3) for this potentially reportable deficiency.

Statement of Potentially Reportable Deficiency

During routine inspection activities performed by the Authorized Nuclear Inspector (ANI), it was determined that some inspections were not performed and documented by Baldwin Associates' (IP contractor) Quality Control (QC) or Technical Services (T/S) Departments of field performed counterboring activities on safety related piping. Potentially, this condition could have allowed the installation of incorrectly counterbored pipe and fittings at Clinton Power Station. An evaluation of this concern is in-progress to determine the scope of the problem, the as-built condition of hardware, and the potential for impact on the safety of operations of Clinton Power Station.

Background/Investigation Results

As a result of routine inspection activities performed by the ANI, and as confirmed by Illinois Power Quality Assurance surveillance activities, it was determined that inspections were not being performed and inspection documentation was unavailable for piping wall thickness and taper for certain field counterbored pipe. This issue was brought to the attention of

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Baldwin Associates Quality and Technical Services and Piping Departments and resulted in the issuance of Corrective Action Request (CAR) Number 113. As a result of further investigation by Illinois Power into the problems identified by the ANI and CAR 113, the following information was obtained:

1. In cases of field performed counterboring, the counterboring requirements of the piping specification K-2882, standards MF-270.8.1CP through MF-270.8.6CP, shall be met. Deviations from these requirements are allowed only upon the issuance of a Field Change Request (FCR).
2. Piping installation travelers issued to the field to control the work did not specifically require, as an installation step, the counterbore of piping. However, the piping specification K-2882, which contains counterboring requirements, is referenced in the travelers.
3. Baldwin Associates Procedure BAP 2.14, "Fabrication/Installation of Items, Systems, and Components", was reviewed, revealing that the Baldwin Associates Technical Services Department (T/S) inspectors are responsible for inspection and inspection documentation (hold point on traveler) for weld joint fit-up. Counterbore is not specifically addressed in this procedure.
4. Baldwin Associates Procedures BAP 2.24, "Control of Fire Protection Systems", and BAP 2.26, "Control of Augmented D Systems" were reviewed, revealing that hold points were not specified to permit Technical Services to verify counterbore prior to piping weld fit-up.
5. Baldwin Associates Technical Services Procedure BTS-405, "Procedure Specification for Visual Inspection of Weldments", was reviewed, revealing that T/S inspectors are required, at weld joint fit-up, to inspect for weld gap, weld joint internal diameter mismatch, pipe internal diameter cleanliness, base material surface irregularities, etc. Guidelines for piping counterbore inspection are given but the procedure does not specifically require an inspection to be made.
6. Baldwin Associates Quality Control Instructions, QCI-302, "Piping/Mechanical Quality Control Inspection Criteria for Piping System Fabrication/Installation", and QCI-309, "Piping Mechanical Quality Control Inspection Criteria for Piping System Fabrication/Installation for Augmented D and Fire Protection", were reviewed, revealing that piping counterbore was not addressed.

7. Because project procedures and instructions do not provide clear guidance on the performance, inspection, and documentation needed for piping counterbore, consistency in inspection and subsequent inspection documentation for piping counterbore activities could not be established. In some cases, inspections were not performed and inspection documentation was not generated.
8. An investigation is in progress to identify and list weld joints that, because of internal diameter mismatch, may have been counterbored. This investigation is essentially complete and has identified approximately 170 welds for which inspection reports are not available. Further investigation continues in this area to determine if, due to weld cut-out, counterboring may have been performed on the piping. Investigation is also being performed to determine if inspection reports for counterbore exist for these welds. It is expected that this review will be completed by June 15, 1983.

Illinois Power is evaluating methods of determining the presence and adequacy of counterboring on those welds in which inspection reports are not available. The use of boroscopes and radiographic film have proved inconclusive. The use of ultrasonic methods was tested in a demonstration conducted on-site on April 28, 1983 and is being pursued to ensure credibility.

Corrective Action (Interim)

Although the investigation of this potential deficiency is still in progress, the following actions have been taken to correct the problem and to prevent recurrence:

1. Further weld fit-up and material identification inspections were deferred until the applicable procedures and instructions were revised and training was performed.
2. On January 4, 1983, the BA Piping Department conducted on-the-job training for craft personnel involved with pipe counterbore.
3. On January 12, 1983, the BA Technical Services (T/S) Department conducted on-the-job training for T/S personnel, covering the assignment of the responsibilities for checking wall thickness and counterbore.

4. BAP 2.14 was revised to address piping counterbore. This procedure now requires that all new piping travelers contain a sequence for counterboring/internal diameter grinding. This action will preclude the possibility of counterboring being overlooked. Further, this sequence is considered a Technical Services hold point, therefore, inspection of counterbore will be performed and documented on the traveler. In-process travelers are also being amended to include this step.
5. BTS-405 has been revised to clarify the inspection and documentation requirements of piping counterbore. Further, BA Technical Services has fabricated calibrated inspection gauges to implement the counterbore inspection.
6. QCI-302 and QCI-309 have been revised to address the inspection and documentation of piping counterbore.
7. BAP 2.24 has been revised to include the requirements of QCI-309 which directs the inspection of counterbore on fire protection systems.
8. BAP 2.26 was amended to include a hold point where Technical Services can verify counterbore of Augmented D piping.
9. Illinois Power Company and Baldwin Associates are investigating ultrasonic examination as a method of determining the as-built condition of those counterbored welded pipe joints having no available inspection documentation.

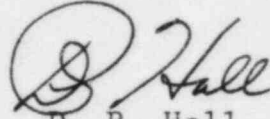
Safety Implications/Significance

Illinois Power Company's investigation to determine the as-built condition of those welded counterbored pipe joints not having inspection documentation is continuing. Until this phase of the investigation is completed, an analysis of the safety implications of this potentially reportable deficiency cannot be performed. It is anticipated that approximately six months will be necessary to evaluate the as-built condition of welded counterbored pipe joints. Illinois Power intends to provide an update of our investigation in approximately ninety (90) days.

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We trust that this interim letter provides you sufficient background information to perform a general assessment of this potentially reportable deficiency and adequately describes our overall approach to resolve the problem.

Sincerely yours,



D. P. Hall
Vice President

REC/lf

cc: NRC Resident Inspector
Director, Office of I&E, USNRC, Washington, DC 20555
Manager-Quality Assurance
Illinois Department of Nuclear Safety
INPO Records Center