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ILLINOIS POWER COMPANY



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CLINTON POWER STATION, P.O. BOX 678, CLINTON, ILLINOIS 61727

December 20, 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: 10CFR50.55(e) Deficiency 55-83-02
Counterboring of Safety-Related Pipe

Dear Mr. Keppler:

On January 13, 1983, Illinois Power (IP) 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/internal grinding of safety-related pipe. This initial notification was followed by three (3) interim reports (Ref: IP letter U-10029, D. P. Hall to J. G. Keppler dated February 16, 1983, IP letter U-10056, D. P. Hall to J. G. Keppler dated May 31, 1983, and IP letter U-10088, D. P. Hall to J. G. Keppler dated September 6, 1983). Our investigation has determined that this issue represents a reportable deficiency under the provisions of 10CFR50.55(e). This letter represents an interim report in accordance with 10CFR50.55(e)(3).

Statement of Reportable Deficiency

While conducting a routine inspection, the Authorized Nuclear Inspector (ANI) observed that safety-related piping weld preparations requiring field counterboring were not being inspected and documented by Baldwin Associates' (IP Contractor) Quality Control (QC) or Technical Services (T/S) Departments. Had this situation gone uncorrected, incorrect field counterbored piping in violation of ASME Code requirements would have been installed at Clinton Power Station (CPS).

Background/Investigation Results

Subsequent to the discovery of this condition by the ANI, an IP Quality Assurance surveillance confirmed that required inspections were not always being conducted and documented for some of the field counterbored pipe. When notified of this condition, the Baldwin Associates Quality Assurance Department issued Corrective Action Request (CAR) Number 113. Closer investigation

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by IP revealed that project procedures and instructions did not provide clear guidance on the performance, inspection, and documentation needed for piping counterbore/internal diameter grinding.

The investigation to date has identified 346 piping joints having a nominal internal diameter difference in excess of 1/16 inch, indicating the potential need for counterboring. To determine the internal geometry of these joints, an ultrasonic examination technique was developed by NDT Consultants. This technique, employing transducers to measure the bevel angle, position, and wall thickness, was satisfactorily qualified to a test procedure. Three hundred eighteen (318) pipe-to-pipe joints were examined using NDT Consultants' ultrasonic technique. The remaining twenty-eight (28) are factory counterbored valve-to-pipe joints. The internal geometry of these were determined using vendor drawings and field measurement. Eighty-four (84) of the examined pipe-to-pipe joints and twenty-one (21) pipe-to-valve joints were diagnosed as having questionable counterbore geometries. The questionable geometries include incorrect bevel angle, square cut geometry, and minimum wall violations. Nonconformance Reports or Deviation Reports have been written for the joints and an engineering disposition is being established for each. Additional reviews of site documentation are being performed to verify that all field counterbored piping joints have been identified and evaluated for adequacy.

Corrective Action

The following actions have been taken to correct the problem and to prevent recurrence:

1. Further piping 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 Baldwin Associates (BA) Piping Department conducted on-the-job training for craft personnel involved with pipe counterbore.
3. On January 12, 1983, the BA TS Department conducted on-the-job training for Technical Services personnel, covering the assignment of the responsibilities for checking wall thickness and counterbore.
4. Baldwin Associates Procedure BAP 2.14 was revised to address piping counterbore. 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. Technical Services Procedure BTS-405 was 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. Quality Control Instructions QCI-302 and QCI-309 have been revised to address the inspection and documentation of piping counterbore.
7. Baldwin Associates Procedure BAP 2.24 has been revised to include the requirements of QCI-309 which directs the inspection of counterbore on fire protection piping systems.
8. Baldwin Associates Procedure BAP 2.26 was amended to include a hold point where Technical Services can verify counterbore of Augmented D piping.
9. The pipe joints identified as having questionable internal geometries have been documented on Nonconformance Reports or Deviation Reports. Resolution of these reports will assure that pipe joints welded under the previous program meet the requirements of the Architect Engineer and the ASME Code.
10. Further investigation is being performed to verify that all field counterbored piping joints have been identified and evaluated for adequacy.

Safety Implications/Significance

Illinois Power's investigation into the actual affects of the incorrect counterbore geometries have not conclusively shown that the weld integrity was affected. However, it can be postulated that an abrupt or square cut counterbore transition could result in a stress riser. Also, minimum wall violations could result in an over-stress condition. The cracking in some of the welds in question could be significant to the safety of operations of CPS. On this basis, the issue is considered to be reportable under the provisions of 10CFR50.55(e).

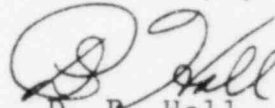
J. G. Keppler
NRC

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It is expected that Illinois Power's investigation of this issue will be complete in approximately ninety (90) days. We trust that this interim report provides you sufficient information to perform a general assessment of this reportable deficiency and adequately describes our approach to resolve the issue.

Sincerely yours,



D. P. Hall
Vice President

REC/km

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