

ILLINOIS POWER COMPANY



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U-10051

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

April 27, 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 82-11
10CFR50.55(e)
Incorrect Identification of
Base Material and Weld Procedures
on Piping Hanger Travelers

Dear Mr. Keppler:

On October 20, 1982, Illinois Power Company notified Mr. F. Jablonski, NRC Region III, (Ref: IP memorandum Y-13999, 1605-L, dated October 20, 1982) of a potentially reportable deficiency per 10CFR50.55(e) concerning the incorrect identification of base material and improper weld procedures on piping hanger travelers. This notification was followed by two (2) interim reports (IP letter D. P. Hall to J. G. Keppler U-10010, 1605-L, dated November 19, 1982, and IP letter D. P. Hall to J. G. Keppler U-10023, 1605-L, dated January 17, 1983). Our investigation into this matter continues, and this letter represents an interim report per 10CFR50.55(e)(3).

STATEMENT OF POTENTIALLY REPORTABLE DEFICIENCY

During final review of piping hanger installation travelers, it was discovered that incorrect base materials and improper weld procedures were identified on the travelers. This condition could potentially allow for incorrect welding and improper documentation of piping hanger installation.

INVESTIGATION RESULTS/BACKGROUND

During a Baldwin Associates (IP Contractor) Technical Services Department final review of piping hanger installation travelers, it was realized that the wrong embed plate base material and welding procedure for welds between embed plates and piping hangers were identified on the documents. This error was initially identified on approximately sixty-seven (67) piping hanger installation travelers and resulted in the issuance of a Nonconformance Report (NCR-7725). As a result of NCR-7725, the Baldwin Associates (BA) Quality Assurance Department issued a

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Corrective Action Request (CAR-105) which addressed improper traveler initiation by BA Engineering and improper traveler initial review by BA Technical Services on an undetermined number of piping travelers.

Upon investigation by Illinois Power into the problems identified by NCR-7725 and CAR-105, the following information was obtained:

1. Sargent & Lundy (CPS Architect-Engineer) design drawing S21-1001 allows the use of both ASTM A-36 and ASTM A-572 Grade 50 as embed plate material.
2. During pipe hanger traveler initiation, the BA Piping Department did not realize that an alternate type of material was allowed for embed plates. It was erroneously assumed that all embed plate material was ASTM A-36, subsequently, pipe hanger travelers were prepared identifying the embed base material as ASTM A-36. In reality, both ASTM A-36 and ASTM A-572 Grade 50 material was used for embed plates.
3. The initial pipe hanger traveler review by BA Technical Services assigns a weld procedure to the traveler, based on the base materials identified on the document by the BA Piping Department. Therefore, if erroneous base material information is identified on travelers, the possibility of identifying an incorrect welding procedure exists.
4. The weld procedure for welding ASME SA-36 (pipe hanger material) to ASTM A-36 embed material is designated as N-1-1-A-1M. The weld procedure for welding ASME SA-36 (pipe hanger material) to ASTM A-572 Grade 50 embed material is designated as N-ASTM-A-SP. As ASTM A-36 embed base material was identified on the travelers, weld procedure N-1-1-A-1M was subsequently indicated on the travelers by BA Technical Services. However, depending on actual embed material used, either procedure could be correct. It should be noted that these two welding procedures both utilize the same filler material and the same essential variables, therefore, the welds are acceptable even though an incorrect weld procedure was specified.
5. The welders used to perform the welds in question were qualified to both procedures.
6. A review of traveler programs in the electrical, instrumentation, mechanical equipment, and HVAC disciplines for weldments to embeds disclosed no welding procedure errors such as those identified above.
7. Investigation revealed that an ASME Code Case, N-71-10, states that an ASME weld procedure qualification (such

as N-1-1-A-1M) with a base metal in one P-number and Group number (for ASTM A-36, P=1) qualifies for all other base metals in the same S-number and Group number (for ASTM A-572 Grade 50, S=1).

Illinois Power's investigation of this concern continues and involves an extensive review of pipe hanger travelers to determine if similar problems exist in weldments to other base metals, such as structural steel. As of April 1, 1983, approximately 4000 of an estimated 6000 hanger travelers have been reviewed. Of this 4000, approximately 1250 were shown as having the incorrect base material and improper weld procedure identified on the traveler. These 1250 incorrect travelers have been further tabulated as follows:

- a. Approximately 1000 travelers identified ASTM A-36 as the embed plate base material, where ASTM A-36 or ASTM A-572 Grade 50 could be present. These welds are acceptable for the reasons stated above. However, a documentation problem exists that requires correction. A Nonconformance Report (NCR 7725) has been written to document this problem.
- b. Approximately 80 travelers identified ASTM A-36 as the base material, where ASME SA-106 Grade B or ASME SA-516 Grade 60 or 70 was present. Although the incorrect material was identified, the correct weld procedure, N-1-1-A-1M, was specified and used, as these materials are within the scope of the weld procedure. However, a documentation problem exists that requires correction. Traveler addendums are being issued to correct the material identification on the documentation.
- c. Approximately 120 travelers indicated ASTM A-36 material when ASTM A-500 Grade B or ASTM A-588 Grade 50 was present. For these cases, the incorrect weld procedure, N-1-1-A-1M, was identified, where the correct weld procedure is N-ASTM-A-SP. It should be noted that these two welding procedures utilize the same filler material and the same essential variables, therefore, the welds are acceptable even though an incorrect weld procedure was specified. Further, Code Case N-71-10 can be applied to this situation, providing further justification for acceptability of the welds. However, a documentation problem exists that requires correction. A Nonconformance Report (NCR 10003) has been written to document this problem.
- d. Approximately 50 travelers involved welds to stainless clad carbon steel (ASME SA-240-TP304 over ASME SA-537 Class II material conforming to ASTM A-264). In these cases, weld procedure N-1-8-A-M was specified, which is not correct for stainless clad steel. One (1) hanger (1RH64021G) has been installed to date on the clad steel and will require rework to conform to the

correct weld procedure and Field Engineering Change Notice (FECN) 2623. Further investigation is necessary to determine the significance of this situation. A Deviation Report (DR 10157) has been written to document this problem.

Another issue that has been identified through investigation of this potential deficiency, concerns the materials used for fabrication of rear brackets for pipe hangers supplied by Basic Engineers for use at Clinton Power Station. The vendor's detail drawings indicate ASME SA-36 material for these brackets, however, more recent Load Capacity Data Sheets indicate that optional materials ASME SA-515 Grade 70 and ASME SA-516 Grade 70 may have been used. The weld procedures used would, however, be correct had these materials been used. Further research is necessary to determine the actual materials supplied, and to determine what corrective action, if any, is required.

CORRECTIVE ACTION (INTERIM)

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

1. BA Piping Department has conducted department training relevant to traveler initiation and the importance of supplying correct material identification information on work related documents. This training was completed on December 22, 1982.
2. For those piping hanger travelers in which welds to embeds have not been started, BA Piping Department is indicating that embed base materials are either ASTM A-36 or ASTM A-572 Grade 50, and that the applicable weld procedure is either N-1-1-A-1M or N-ASTM-A-SP, to show that alternate materials and weld procedures exist. For those travelers where welding to embeds has been started or is complete, a copy of NCR-7725 is being included to correct the documents. Concurrent with this effort, a review of the travelers is being made to verify correct identity of other base materials. This effort involves approximately 6000 piping hanger travelers, of which 4000 are complete at this time. Due to the large number of travelers remaining, this review will be complete approximately three (3) months from this reporting date.

To correct documentation errors identified through the review process, the travelers will be revised to identify the correct or alternate base materials and weld procedures that apply.

3. On December 12, 1982, Sargent & Lundy (CPS Architect Engineer) accepted the recommendation on NCR-7725 to accept the welds as-is. The Piping Specification,

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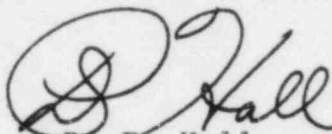
K-2882, is presently being amended to allow the use of Code Case N-71-10, which should be completed by April 29, 1983.

SAFETY IMPLICATIONS/SIGNIFICANCE

At this time, although documentation errors have been identified, it has been determined that the associated weldments are acceptable, with only one (1) exception. This one exception will be evaluated to determine if an adverse impact on the safety of operations of CPS could have resulted, had the error gone uncorrected. Further traveler review is also necessary to assure that additional errors are not present, and that a significant deficiency has not occurred. It is anticipated that approximately ninety (90) days will be necessary to complete the investigation and to file a final report on the subject.

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

Sincerely yours,



D. F. Hall
Vice President

RDW/jf

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Illinois Department of Nuclear Safety
NRC Resident Inspector
Manager-Quality Assurance
INPO Records Center