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ILLINOIS POWER COMPANY



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

October 26, 1984

Docket No. 50-461

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

Subject: Potential 10CFR50.55(e) Deficiency 55-84-15:
Skewed Auxiliary Steel Connections

Dear Mr. Keppler:

On June 29, 1984, Illinois Power Company notified Mr. F. Jablonski, NRC Region III, (Ref: IP Memorandum Y-20708 dated June 29, 1984) of a potentially reportable deficiency concerning the fabrication and installation of skewed auxiliary steel connections without the required approved design details. This initial notification was followed by one (1) interim report. (Ref: IP letter, D. P. Hall to J. G. Keppler, U-10183, dated July 26, 1984). Illinois Power's investigation of the above matter is complete and has determined that the issue does not represent a reportable deficiency under the provisions of 10CFR50.55(e). This letter is submitted as a final report regarding this potentially reportable deficiency. Attachment A provides the details of our investigation.

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

Sincerely yours,

D. P. Hall
Vice President

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RLC/cbs (NRC)

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

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ATTACHMENT A

Illinois Power Company
Clinton Power Station

Docket No. 50-461

Subject: Potential 10CFR50.55(e) Deficiency 55-84-15:
Skewed Auxiliary Steel Connections

Final Report

Statement of Potentially Reportable Deficiency
(Withdrawn)/Background

The Clinton Power Station (CPS) Constructor generated 13 Field Change Requests (FCRs) which indicate that 37 cable tray support and 22 conduit support hangers were installed in Seismic Category I areas utilizing skewed auxiliary steel connections. These skewed auxiliary steel connections were fabricated and installed without approved design details. The Constructor used a standard 90°, double angle connection detail from Sargent & Lundy (S&L) drawing E05-1912 as a guide in bending the clip angles to the angle required to suit the configuration of the auxiliary steel in the field. The final as-built skewed connection, neither conforms to approved design details, nor to standard suggested skewed connection details of the AISC Manual. The Constructor also fabricated and installed connections of two beams without approved design details, which were also investigated as a part of this potentially reportable condition.

Investigation Results/Corrective Action

Illinois Power has prepared and implemented an investigation plan to determine the extent of this problem at CPS. The investigation included:

1. A review was performed to identify all conduit and cable tray supports, utilizing skewed auxiliary steel connections that were installed without approved design details,
2. Forty-four (44) nonconformance reports (NCKs) were generated to document those nonconforming or indeterminate connections identified by Item #1. All NCRs have been dispositioned in accordance with approved site procedures.
3. S&L analyzed and evaluated each as-built connection, identified in Item 1, for adequacy to carry design loads, and
4. Baldwin Associates Quality Assurance Group evaluated this potential problem with respect to similar skewed connections which may have been installed by other disciplines.

ATTACHMENT A
(Continued)

5. NCRs 17544, 50984, and 50998 were generated to document the fabrication and installation of structural steel beam end connections without approved design details. These NCRs were resolved in accordance with approved site procedures.

To prevent the recurrence of the problem, S&L issued Field Engineering Change Notices (FECNs) 4986, 4996, 5098, 6001, 6003, 6004, 6005, 6224, and 6227 covering generic skewed connection details. These FECNs will be utilized for all future installations of cable tray and conduit supports. To ensure that skewed connections do not become a potential problem in other disciplines, it has been verified that standard skewed connection details are covered in design drawings.

Root Cause

The E05-19XX series drawings contain standard details for auxiliary steel connections. In most cases, these details contain complete installation information; in other cases, notes on the drawings refer to the AISC Manual for necessary supplemental information to complete the installation. The drawings also contain a general detail for right angle connections which references the AISC Manual for further details. Since there was no detail for skewed connections, the Constructor felt that they could use the general detail, modifying it as necessary, utilizing the guidance provided in the AISC Manual.

Safety Implications/Significance

Illinois Power requested Sargent & Lundy (S&L) to evaluate the safety significance of the as-built skewed auxiliary steel connections. S&L letter, SLS-I-4710 dated August 21, 1984, documents the S&L evaluation. S&L has stated that the as-built skewed auxiliary steel connections would have no safety significance had the condition gone uncorrected. The structural steel beam end connections were also evaluated for safety significance. The evaluation determined that the beam end connections, as installed, were adequate and sound for the loads/reactions posted on the design drawings.

Investigation of this potentially reportable issue is complete. Illinois Power Company has reviewed and evaluated the findings of the investigation and has determined that no conditions, adverse to the safe operations of CPS were found. Therefore, this issue is considered to be not reportable under the provisions of 10CFR50.55(e).