

ILLINOIS POWER COMPANY



1605-L
U-10032

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

February 18, 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 82-12
10CFR50.55(e)
Binding of Sway Strut/Snubber
Piping Component Supports

Dear Mr. Keppler:

On October 21, 1982, Illinois Power notified Mr. H. Wescott, NRC Region III, (Ref: IP memorandum Y-13998, 1605-L, dated October 21, 1982) of a potentially reportable deficiency per 10CFR50.55(e) concerning the fabrication of sway strut type pipe supports. The location of welds on the eyelet of the sway strut interferes with the retaining bracket (clevis) such that the required motion of the sway strut may not be achieved. This initial notification was followed by one (1) interim report (Ref: IP letter U-10011, D. P. Hall to J. G. Keppler dated November 20, 1982, 1605-L). Our investigation into this matter continues, and this letter represents an interim report per 10CFR50.55(e).

Statement of Potentially Reportable Deficiency

The welded male rod extension piece used in sway strut and snubber piping supports supplied by Basic Engineers (BE) binds in the pipe clamp and rear bracket, limiting the designed range of motion. The binding could cause extra loads on the weld attaching the rear bracket (clevis) to the structure. This additional load could result in failure of the weld. Further investigation is necessary to determine the significance of this concern, and evaluate what actions are required to correct this potentially reportable deficiency.

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Background/Investigation Results

During inspection activities of piping support installation by Baldwin Associates (IP Contractor), a sway strut type pipe hanger was found where metal to metal contact existed between the male rod extension piece and the pipe clamp. This condition does not conform with Baldwin Associates Procedure BAP 3.2.5 (Piping Component Supports), which requires the piece to pivot in all directions without binding. A Deviation Report (DR-3382) was initiated to document this occurrence. The metal to metal contact was between the pipe clamp and the weld which joins the eyelet to the threaded rod portion of the male rod extension piece. This contact caused the sway strut to bind in the pipe clamp, limiting the designed movement. Further investigation found that these male rod extension pieces are also used on sway strut type hangers to connect to the rear bracket (clevis), and therefore binding could also occur at this location. This concern was confirmed by a random inspection of installed sway strut hangers which identified several interferences. Additionally, some mechanical snubbers utilize similar male rod extension pieces and could be subject to binding.

The problem was further investigated by the piping support supplier, Basic Engineers. Their investigation found that the interferences were due to accumulative fabrication tolerances given on BE's data sheets for these types of supports. Investigation by Baldwin Associates determined that, in some cases, overwelding of the eyelet to the threaded rod of the male rod extension piece also contributed to the interference.

In order to determine the scope of this problem on installed hardware, an inspection program has been implemented at Clinton Power Station (CPS). This inspection program utilizes personnel employed by Basic Engineers on site to measure the clearance available and critical dimensions for installed sway struts and snubbers. Using the actual dimensions for each installation, the available freedom of movement will be calculated. This inspection program was initiated on November 16, 1982, and is presently 80% complete in all buildings, with the exception of the containment building in which inspection was only recently started. The estimated completion date for this on-site hanger inspection is March 31, 1983. Upon completion of the inspection effort and after actual freedom of movement is calculated, a course of action can be determined for each hanger. Investigation completed thus far has determined that hangers could exist which appear bound in the cold condition, yet adequate clearance may be available due to movement of the hanger resulting from thermal growth of the pipe. Sargent & Lundy (CPS Architect-Engineer) design standards allow the pipe-hanger joint to move within 2° without design compensation. However, in cases where large thermal movements or short struts are involved, design compensations may have been made to accommodate this movement such that the hanger in its cold setting may appear bound.

Corrective Action (Interim)

Although investigation of this potential deficiency is still in process, several actions have been or are being taken to identify and correct the problems, and to prevent recurrence:

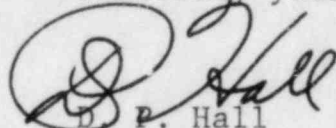
1. Baldwin Associates stopped issuing welded male rod extension pieces (BE part Nos. 415-1 and 411-2) to the field and fabrication shops. This action prevents further occurrences of interference until this issue has been investigated and resolved.
2. Baldwin Associates conducted training sessions for its Quality Control personnel on pipe hanger inspection, November 1 - 2, 1982.
3. Baldwin Associates Quality Assurance intensified its surveillance of Basic Engineers' fabrication activities at BE's shops and at CPS through review of documentation prior to release for shipment of pipe support materials.
4. A field inspection of installed sway struts and snubbers supplied by Basic Engineers is being performed by BE employees to determine the number of hangers affected by problems of inadequate clearance and the amount of clearance available for each support. BE's shop inspection procedure was revised by BE and reviewed by Sargent & Lundy and Baldwin Associates to address their field inspection activities at CPS. The method of measurement for interferences has been prequalified on a shop mock-up to ensure its validity. The inspection team arrived at CPS on November 16, 1982, and it is expected that the inspection will be complete by March 31, 1983.
5. Upon completion of the field inspection effort, the scope of this problem will be better defined, and a decision can be made on remedial action necessary to correct identified deficiencies. This action may include an engineering analysis of the deficiencies and/or a parts replacement/rework program.
6. Baldwin Associates Quality Control is presently evaluating inspection controls to prevent recurrences of this problem. Criteria for the Phase II and Phase III hanger inspection program are being revised to include an inspection point for adequate clearance.

Safety Implications/Significance

Until the inspection effort described above is complete and the scope of this potential deficiency is defined, it is not possible to assess the safety implications and significance of this concern. Additionally, the extent of action necessary to correct identified deficiencies through rework/replacement of parts or engineering analysis cannot be determined until the scope of this potential deficiency is defined. It is anticipated that approximately ninety (90) days will be necessary to define the scope of this potential deficiency, evaluate for significance, determine final action to correct identified deficiencies and prevent recurrence, and to file a final report on this subject.

We trust that this interim report provides sufficient background information to perform a general assessment of this potentially reportable deficiency and overall approach to resolution of this problem.

Sincerely yours,



D. P. Hall
Vice President

cc: Director, Office of I&E, U.S. NRC, Washington, DC 20555
Illinois Department of Nuclear Safety
NRC Resident Inspector
Manager - Quality Assurance