

ILLINOIS POWER COMPANY

U-10199  
1605-L

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

August 22, 1984

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 55-83-08 10CFR50.55(e)  
Damage to Guard Pipe Bellows Assemblies

Dear Mr. Keppler:

On June 27, 1983, Illinois Power notified Mr. F. Jablonski, NRC Region III (Ref: IP Memorandum Y-17131, 1605-L, dated June 29, 1983) of a potentially reportable deficiency per 10CFR50.55(e) concerning construction damage to guard pipe bellows assemblies. This initial notification was followed by three (3) interim reports (Ref: IP letter U-10077, D. P. Hall to J. G. Keppler dated August 16, 1983; IP letter U-10113, D. P. Hall to J. G. Keppler dated December 15, 1983; and IP letter U-10141, D. P. Hall to J. G. Keppler dated April 12, 1984). Our investigation of this matter is continuing, and this letter represents an interim report per 10CFR50.55(e).

#### Statement of Potentially Reportable Deficiency

Ten (10) guard pipe bellows assemblies used at Clinton Power Station (CPS) were damaged during installation and construction activities. This damage consists of small dents, nicks, scratches, and arc strikes, with one (1) assembly exhibiting a small hole in one (1) of the two (2) bellow plys. An evaluation of this issue is being performed to determine the consequences of this damage and necessary actions to make the bellows acceptable.

#### Background

During installation of the guard pipes and associated bellows assemblies, eleven (11) Nonconformance Reports (NCRs) were written to document cases of damage to ten (10) of eleven (11) bellows assemblies. These bellows assemblies, anchored to the drywell wall and welded to the guard pipe, act as a seal isolating the drywell environment while allowing free axial

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thermal and seismic movement of the guard pipe. The bellows assemblies are not pressure retaining parts of either the reactor or the primary containment. The bellows assemblies were fabricated, tested, and certified in accordance with the ASME Code, Section III, Subsection NE (Class MC), to take advantage of available code specifications. The original supplier of the bellows assemblies is no longer in this type of business.

#### Investigation Result/Corrective Action

An evaluation of this problem was performed to determine the remedial actions necessary to establish the acceptability of the damaged bellows. Several methods were pursued, which included testing of a prototype bellows assembly and repair of the presently installed bellows. Pathway Bellows, Inc., was awarded the contract to perform testing of the prototype bellows assemblies and to supervise repairs, if required. The classification of the bellows assemblies was revised from ASME to ANSI B31.1 to facilitate any repairs; however, the bellows assemblies have retained their safety related, seismic Category I classification.

Since our last interim report, a three (3) convolution prototype bellows assembly has been manufactured by Metal Bellows Corporation per Sargent & Lundy (S&L) Specification K-2871 and delivered to Pathway Bellows, Inc. for testing in accordance with S&L Specification K-2871A.

The prototype bellows has been damaged in a manner to duplicate the damage existing on the bellows assemblies installed at CPS. The prototype bellows has also been welded in a manner that simulates the repair that will be made to bellows assembly 1FW04MB due to a hole in the outer ply of the bellows caused by an arc burn.

The prototype assembly was tested by imposing greater than 10,000 cycles of calculated movement. Leak detection monitors located between the plies of the pressurized assembly indicated no loss of pressure integrity. This test was in accordance with the Code case N-315 (which was used as a guideline) and proves the method of repair welding to be valid.

The patch material that will be utilized to repair the installed assembly must be SA240 type 321 stainless steel. The material used by Pathway Bellows to patch the prototype hole had a Certified Material Test Report (CMTR), but the CMTR was not provided from an ASME qualified supplier, therefore this material will be requalified.

Upon recertification of the repair material as SA 240 Type 321 stainless steel, the required repair to the installed bellows assembly will be performed by Pathway Bellows, Inc.

To prevent further damage, the installed bellows assemblies have been covered with protective coverings.

Safety Implications/Significance

The evaluation of the significance to safety of the dented/damaged bellows has been pending the results of the prototype test program. The results of the test are now available and S&L is being formally requested to evaluate the safety significance of this issue. Approximately sixty (60) days will be required to complete the investigation, determine reportability, and file a final report on this potentially reportable deficiency.

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

Sincerely yours,



D. P. Hall  
Vice President

RLC/cch (NRC2)

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