

ILLINOIS POWER COMPANY



1605-L  
U-10080

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

August 8, 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 55-83-09  
10 CFR 50.55(e)  
Damage to PGCC Cable Connectors

Dear Mr. Keppler:

On June 29, 1983, Illinois Power Company notified Mr. F. Jablonski, NRC Region III (Ref: IP memorandum Y-17130, 1605-L, dated June 29, 1983) of a potentially reportable deficiency concerning damage to conductor pins and sockets on Power Generation Control Complex (PGCC) cable connectors. Our investigation of this matter continues, and this letter represents an interim report in accordance with 10CFR50.55(e)(3).

Statement of Potentially Reportable Deficiency

Bent conductor pins were discovered in some of the PGCC cable connectors when the plugs and receptacles were disconnected. The dielectric between the conductor sockets of receptacle connectors was found to be punctured by the bent pins of the matching plugs when the parts were coupled. Electrical contact may not have been completed, and the integrity of the electrical circuits was questionable.

Background/Investigation Results

The cable connectors are manufactured by Amphenol, Bendix, and Cannon and were furnished by General Electric Co. They are interchangeable, plug and receptacle connectors, having multi conductors, an alignment guide, and a screw-type coupling ring. The connectors have been standard in the electrical industry for many years and manufacturers do not provide specific installation instructions for mating the connectors.

The quantity and type of cable connectors and the procedures used for installation are being reviewed. Visual inspection of the integrity of the connection is not possible when the connector is coupled, but verification of the electrical circuit

is made by a functional circuit test. Test results for previously energized PGCC circuits are being reviewed to determine if there were any problems attributable to bent connector pins. This data will be analyzed with respect to the means of detection of bent pins and to the recurrence of connector problems. The field training program used for installation of cable with connectors is being investigated for adequacy.

An inquiry is being made to other nuclear station installations using PGCC equipment to determine if the condition is unique to the Clinton Power Station or generic in nature. General Electric performs continuity tests on the cable circuits and functional testing of the PGCC in the factory. General Electric has indicated that a small number of bent pin occurrences have been detected by testing, but do not consider this to be unusual.

#### Corrective Action (Interim)


The complete scope and root cause of this problem have not yet been identified such that a determination of remedial and generic corrective action at this time would be premature. Training related to proper installation methods for cables and connectors will be conducted before proceeding with installation of PGCC cables. Testing of circuits is continuing as scheduled at a risk of rework and retesting until a final disposition is achieved.

#### Safety Implications/Significance

This on-going investigation will determine if there is a problem with the existing cable connectors and what corrective action is necessary to prevent similar problems in future work. The extent and significance of this condition cannot be determined until further evaluation/examination of the questionable connectors is performed. Approximately ninety (90) days will be required to complete the investigation, determine reportability, and file our final report on this potentially reportable deficiency.

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

Sincerely yours,



D. P. Hall  
Vice President

August 8, 1983

cc: H. H. Livermore, NRC Resident Inspector  
Director, Office of I&E, USNRC, Washington, DC 20555  
Illinois Office of Nuclear Safety  
Manager - Quality Assurance  
INPO Records Center