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ILLINOIS POWER COMPANY



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

November 2, 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 55-84-13  
Suppression Pool Temperature Monitoring System

Dear Mr. Keppler:

On June 7, 1984, Illinois Power Company notified Mr. P. Pelke, NRC Region III (Ref. IP memorandum Y-21918 dated June 7, 1984), of a potentially reportable deficiency concerning the Suppression Pool Temperature Monitoring System. This initial notification was followed by one (1) interim report (Ref: IP Letter U-10176, D. P. Hall to J. G. Keppler, dated July 9, 1984). Our investigation into this matter is continuing and this letter represents an interim report in accordance with the requirements of 10CFR50.55(e). Attachment A provides the details of our investigations to date.

We trust that this 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 problem.

Sincerely yours,

A handwritten signature in cursive script, appearing to read 'D. P. Hall'.  
D. P. Hall  
Vice President

RLC/cbs (NRC2)

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

Potential 10CFR50.55(e) Deficiency 55-84-13:  
Suppression Pool Temperature Monitoring System

### Interim Report

#### Statement of Potentially Reportable Deficiency/Background

The Suppression Pool Temperature Monitoring System (SPTMS), as designed, meets the GE design requirements for "Normal Pool Monitoring," but does not meet the GE recommendation for providing a "Post-LOCA Pool Monitoring" capability.

The twenty (20) RTD units (16 safety related, 4 non-safety related) that comprise the SPTMS are physically located with the temperature sensing tip at Elevation 730'6", which permits temperature monitoring even at low water level (LWL) alarm set point of Elevation 730'11"; but, in a post-LOCA condition, the RTDs could be uncovered resulting in loss of temperature monitoring. If the Suppression Pool water level is drawn down below the level of the temperature sensors, the Operator could be misled by erroneous readings and required safety actions could be delayed, resulting in excessive Suppression Pool temperatures and subsequent damage to the Containment and/or containment structures.

### Investigation Results

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

1. The Architect/Engineer Sargent & Lundy (S&L) performed a review/evaluation of the current design for adequacy to meet design basis accidents which could result in the uncovering of the suppression pool temperature sensors. The results of this evaluation were submitted to Illinois Power for review.
2. Nuclear Station Engineering (NSED) reviewed the results of the S&L evaluation to determine the significance to safety of operations of the Clinton Power Station.
3. The root cause has been identified and appropriate corrective action necessary to resolve identified deficiencies and preclude recurrence have been addressed.

## ATTACHMENT A

(continued)

4. NSED directed S&L to develop and issue a redesign of the suppression pool temperature monitoring system to preclude the possibility that the temperature sensing elements would be uncovered during a design basis accident.

### Root Cause

Because the Post Accident Monitoring instrumentation covers several separate items it does not represent a "system" in the S&L practice, and thus, it is not covered by a Design Criteria document and was not included separately in the usual S&L design process. The design deficiency was the result of an oversight, rather than an omission in the design process.

### Corrective Action

The Suppression Pool Temperature Monitoring System design has been modified to include additional temperature monitoring elements in each of the four (4) quadrants of the suppression pool at the 14' 10" water level, placing them below the potential minimum water level of 15' 1". This modification will be performed concurrently with the Suppression Pool Temperature Monitoring System completion. With this design modification the SPTMS will be in full compliance with both GE and NRC recommendations.

As the result of the design modification, it will be necessary to revise the operating and emergency procedures to direct the operator to note the suppression pool water level and monitor the lower temperature elements if the upper elements are uncovered.

An internal S&L audit determined that a survey of G.E. documents is required to determine whether other requirements and/or recommendations in the A-22 series of documents have been adequately addressed. The S&L Project Manager has been requested by the S&L Audit Team to have such a survey conducted. The results of the survey will then be audited and included in a subsequent audit report.

### Safety Implication/Significance

Illinois Power's investigation of this potentially reportable deficiency is continuing. The safety implications and significance will be assessed after further background information is evaluated. It is anticipated that approximately sixty (60) days will be required to complete our investigation and to file a final report on this issue.