

June 10, 1997

Mr. Joseph V. Sipek
Director - Licensing
Clinton Power Station
P.O. Box 678
Mail Code V920
Clinton, IL 61727

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION REGARDING THERMO-LAG RELATED
AMPACITY DERATING ISSUES - CLINTON POWER STATION, UNIT 1 (TAC NO.
M82809)

Dear Mr. Sipek:

By letter dated March 31, 1997 (U-602720), Illinois Power Company submitted a response to the NRC request for additional information related to Generic Letter (GL) 92-08, "Thermo-Lag 330-1 Fire Barriers," for the Clinton Power Station. The NRC staff, in conjunction with its contractor, Sandia National Laboratories, has completed the review of your submittal and has identified a number of open issues and concerns requiring clarification. Due to contractor scheduling restrictions, you are requested to respond to this request for additional information within 45 days of receipt of this letter.

If you have any questions, please contact me at (301) 415-1364.

Sincerely,

Original signed by:

Douglas V. Pickett, Senior Project Manager
Project Directorate III-3
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Docket No. 50-461

Enclosure: Request for Additional
Information

cc w/encl: See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

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Clinton Power Station
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Sincerely,

A handwritten signature in cursive script, reading "Douglas V. Pickett", is written above the typed name.

Douglas V. Pickett, Senior Project Manager
Project Directorate III-3
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Docket No. 50-461

Enclosure: Request for Additional
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cc w/enc1: See next page

Mr. Joseph V. Sipek
Illinois Power Company

Clinton Power Station, Unit 1

cc:

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Clinton, Illinois 61727

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Chicago, Illinois 60603

REQUEST FOR ADDITIONAL INFORMATION
RELATED TO THE
CLINTON POWER STATION, UNIT 1
FIRE BARRIER AMPACITY DERATING ISSUES
DOCKET NO. 50-461

Sandia National Laboratories (SNL) finds that the current Clinton Power Station (CPS) ampacity analysis has adequately demonstrated acceptable cable loading for the licensee's applications at CPS.

However, the licensee's submittal dated March 31, 1997, included a number of supplemental ampacity assessments based on a direct comparison of the cable design heat intensity for plant installations to those observed in one cladded ampacity test [test results cited in SNL Report SAND94-0146, "An Evaluation of the Fire Barrier System Thermo-Lag 330-1," dated September 1994]. Based on the information provided in response to the staff's request for additional information dated August 16, 1996, which related to the licensee's heat intensity based analyses, SNL finds that several points of concern regarding the "Watts per foot" approach has not been adequately resolved. Based on earlier reviews associated with other licensees (e.g., Palo Verde), SNL has concluded that the "Watts per foot" methodology is fundamentally incapable of providing an adequate assessment of the performance limits of individual cables. Therefore, SNL finds that the licensee's apparent application of the subject methodology to be inappropriate and unnecessary.

The basis for the subject finding by SNL is discussed in Section 5 of the SNL Letter Report dated May 2, 1997 [Attachment 1(a)]. The licensee is requested to abandon any further application of the "Watts per foot" methodology or, alternately, to address SNL's findings, as well as other staff concerns (see section below) regarding the application of the subject methodology and to utilize the licensee's existing ampacity margin analysis sufficient onto itself as the basis for the conclusion that the applicable cables are operating at acceptable ampacity values.

STAFF/SNL CONCERNS REGARDING "WATTS PER FOOT" METHODOLOGY

1. Experimental Validation of the Methodology

The use by the licensee of the ampacity test results as presented in SAND94-0146 is inappropriate given that the subject test was intended to reproduce a specific manufacturer's test conditions which, when compared to currently accepted test procedures, suffers from a number of experimental deficiencies.

2. Cable Loading Effects

In general, the "Watts per foot" methodology provides an inadequate treatment of the impact of cable loading on the allowable heat loads and assumes those effects are largely irrelevant to the overall heat rejection capacity of the cable tray or conduit system.

3. Discussions in Section 5.2 of the SNL Letter Report dated May 2, 1997, of the following concerns:

- Inadequate treatment of depth of fill;
- Removal of conservatism from the Insulated Conductor Engineers Association ampacity tables;
- Inadequate justification for 32 percent ampacity derating factor as a bounding limit;
- Analysis failed to use the appropriate ambient temperature; and
- Inadequate justification for applicability of the analysis method.

Attachment 1(a): SNL Letter Report dtd 5/2/97