U- 600187
L30-85(07-03)- L
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ILLINOIS POWER COMPANY

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

July 3, 1985

Docket No. 50-461

Director of Nuclear Reactor Regulation
Attention: Mr. W. R. Butler, Chief
Licensing Branch No. 2
Division of Licensing
US Nuclear Regulatory Commission
Washington, DC 20555

Subject: Clinton Power Station Unit 1
Elimination of Arbitrary
Intermediate Pipe Breaks

Dear Mr. Butler:

In Letters U-0832 dated April 16, 1985 and U-600070 dated May 24, 1985, Illinois Power Company submitted requests for exemption from current piping design criteria with respect to arbitrary intermediate pipe breaks for Clinton Power Station. This letter provides additional justification to support the previous submittals regarding thermal cycling and thermal mixing at branch connections for the breaks under consideration.

The normal stress effects of rapid changes in temperatures of process piping are accounted for in the ASME Section III, Class 1 fatigue analyses. Thermal mixing and stratification usually occur where fluids of significantly higher or lower temperatures are injected at branch connections. The intermediate breaks specified in the original request consist of breaks where temperatures are uniform and no injections of fluid occur.

The reactor recirculation branch connections, as shown in Appendix A of the April 16, 1985 letter, are examples of this. No thermal mixing and, hence, no resulting thermal fatigue is expected to occur in the branch connections to the ring header since there is no large source of cold water in the Clinton (BWR/6) design. Unlike earlier BWR designs, neither the Emergency Core Cooling Systems nor the Residual Heat Removal systems introduce cold water into the recirculation loop. Thus, no significant thermal cycling is expected due to mixing in this system.

Illinois Power Company believes that this supplemental information should provide the necessary justification to support the original request. A prompt reply is requested to maximize the benefits of this proposed change to the pipe break criteria.

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Please contact us if you have any questions regarding this matter.

Sincerely yours,

F. A. Spangenberg
Director - Nuclear Licensing
and Configuration
Nuclear Station Engineering

JLP/lab

cc: B. L. Siegel, NRC Clinton Licensing Project Manager
NRC Resident Office
Illinois Department of Nuclear Safety
Regional Administrator, Region III, USNRC