BOSTON EDISON COMPANY
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Director of Nuclear Reactor Regulation
ATTN: D. L. Ziemann, Chief
Operating Reactors Branch #2
Division of Reactor Licensing
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Docket No. 50-293
License No. DPR-35

Additional Information on Single Loop Operation

Dear Sir:

In response to a verbal request from your staff we hereby submit the following information which has been provided by General Electric Company.

1. Provide justification of the use of 0.10 second for single-loop boiling transition.

   With regard to the decaying core flow after LOCA, the DBA pipe break in the single-operating recirculation loop is analogous to the DBA recirculation break in a non-jet pump BWR. In both cases the core flow decays rapidly which results in early boiling transition. For evaluation of the boiling transition time for non-jet pump plants the conservative correlation for no-flow conditions described in Section II.B of NEDE-20566 is used. Typically, the predicted boiling transition time is approximately 1.3 seconds. Since the core thermal-hydraulics are quite similar (i.e., rapidly decaying core flow after LOCA) immediately after the LOCA for both non-jet pump BWR's and jet pump BWR's with single loop operation the boiling transition time is essentially identical. Therefore, the assumption of boiling transition at 0.1 seconds for single loop operation ECCS analysis is conservative by a factor of approximately 10 for the single loop operation DBA.

2. Justify that the single loop ECCS analysis is consistent with 10CFR50.46 and Appendix K.

   The ECCS analysis for single loop operation is performed using the accepted analytical models for Appendix K conformance calculations for jet pump BWR plants. The only exception is the assumption of boiling transition at 0.1 seconds. The justification of the conservatism of this assumption is addressed in the response to Question #1.

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