TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401
500C Chestnut Street Tower II

FEB 5 1979

Director of Nuclear Reactor Regulation
Attention: Mr. Thomas A. Ippolito, Chief
Branch No. 3
Division of Operating Reactors
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Ippolito:

In the Matter of the ) Docket No. 50-259
Tennessee Valley Authority )

This is in response to a verbal request from your staff for information in support of our application for a license amendment to permit cycle 3 operation of Browns Ferry Nuclear Plant unit 1 with operating credit allowed for the installed end-of-cycle recirculation pump trip (RPT) system. Enclosed is justification that a reduction in the reactor power level to less than 85 percent in the event of a degraded condition of the PPT system will ensure safe operation.

Very truly yours,

J E Gilleland

J. E. Gilleland
Assistant Manager of Power

Enclosure

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# JUSTIFICATION FOR OPERATION AT 85 PERCENT POWER IN THE EVENT THAT BOTH RECIRCULATION PUMP TRIP SYSTEMS ARE INOPERABLE

Performance studies of a BWR at reduced power and flow shows that the delta-CPR for pressurization events (load rejection without bypass, etc.) can be reduced to 60 percent of the value based on the 100 percent power flow state when the core power has been reduced to approximately 85 percent by flow control. These studies were performed for several transient events including the Load Rejection Without Bypass using standard computer program and licensing conservatisms. The study did not include recirculation pump trip (RPT) but other studies relating improvements with RPT have shown that RPT reduces delta-CPR to approximately 60 percent of that without RPT. The study was performed at end-of-cycle conditions (i.e., all rods out). At other operating conditions (lesser exposures, etc.) events such as Rod Withdrawal Error which are not affected by the operation of the RPT system would be limiting. Thus, reducing core power to 85 percent without RPT would result in a trade-off not requiring MCPR operating limit changes.

Additional conservatism will also appear in the form of higher operating Minimum Critical Power Ratio when the core power is reduced. This additional conservatism is worth approximately 7 percent at the reduced core power and flow described previously. Thus, should the unlikely pressurization event (Load Rejection Without Bypass) actually occur, the safety limit MCPR surely would not be violated.

Please note that the attached letter dated January 24, 1979, submitted by Northeast Nuclear Energy Company, replaces their letter dated December 18, 1978 (Accession No. 7812280137), which is now deemed to contain proprietary information.

Those recipients identified below should take appropriate action to control and handle the December 18, 1978 letter a proprietary:

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| Brinkman | TERA |
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THE FOLLOWING RECIPIENTS SHOULD IMMEDIATELY DESTROY THEIR COPIES OF THE DECEMBER 18, 1978 LETTER:

NRC PDR
L PDR
NSIC

If you have any questions, please call Roberta Ingram, X 27435.