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August 8, 1988

W3P88-1259
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U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20005

Subject: Waterford 3 SES
Docket No. 50-382
License No. NPF-38
Request for Additional Information
NPF-38-82: RCS Low Flow Bypass

- References: 1. CEN-201, "Natural Circulation Test Program, San Onofre Nuclear Generating Station Unit 2 Safety Evaluation," April 1982.
2. W3P88-0995, J.G. Dewease to NRC, Document Control Desk, Technical Specification Change Request NPF-38-82.

During its review of Reference 2, your staff requested clarification of our basis for bypassing the Low RCS Flow Trip below $1.0E-04$ percent full reactor power.

A reactor trip on low primary coolant flow provides protection against DNBR for a sheared shaft event. The Technical Specification change allows this trip to be bypassed below the $1.0E-04$ percent (neutron flux) power level. If a sheared shaft (coincident with a loss of offsite power) occurred below $1.0E-04$ percent full power, an automatic reactor trip would not be generated. Heat added to the RCS by the core operating at $1.0E-04$ percent full power is negligible compared to decay heat. However, during low core heat production, the minimum flow rate, i.e., natural circulation, is sufficient to prevent DNBR. Thus, installing low primary coolant flow trip bypass does not represent a safety concern.

A detailed safety evaluation (docketed Reference 1) was performed for San Onofre Unit 2 prior to conducting a natural circulation test program. This evaluation confirmed: with natural circulation flow rates (about three to five percent of normal operating flow), core power would have to exceed five percent of rated power before the DNBR limit is approached. Five percent of full power is four orders of magnitude greater than the $1.0E-04$

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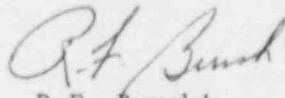
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percent power selected for automatic low flow reactor trip bypass. Calculations for San Onofre Unit 2 apply to Waterford 3 because of the similarities between the plants (e.g., both plant's rated core power have the same driving force for natural circulation flow; both plant's RCS have the same flow resistance to natural circulation).

If you need any further information, contact me or Larry Laughlin at (504) 464-3499.

Very truly yours,



R.F. Burski
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