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SUBJECT: Provides addl response to Generic Ltr 83-24, re TMI Action Plan Item I.G.1. Response provides justification for elimination of station blackout test & restatement of WPPS, Unit 2 approach to compliance w/I.G.1.

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Washington Public Power Supply System

P.O. Box 968 3000 George Washington Way Richland, Washington 99352 (509) 372-5000

August 31, 1983
G02-83-785

Docket No. 50-397

Director of Nuclear Reactor Regulation
Attention: Mr. A. Schwencer, Chief
Licensing Branch No. 2
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Schwencer:

Subject: NUCLEAR PROJECT NO. 2
TMI ACTION PLAN ITEM I.G.1

- Reference:
1. Generic Letter 83-24, "TMI Action Plan Item I.G.1, 'Special Low Power Testing and Training', Recommendations for BWRs," Dated June 29, 1983
 2. Letter, RL Tedesco (NRC) to RL Ferguson (SS), "NRC Review Scheduler Requirements for Special Low Power Test Program and Emergency Procedures," Dated November 21, 1980

The purpose of this letter is to provide additional response to TMI Action Item I.G.1 as requested by NRC Generic Letter 83-24 (Reference 1), dated June 29, 1983, which supercedes the letter of Reference 2. The response provides 1) justification for elimination of the Station Blackout test and 2) a restatement of the WNP-2 approach to compliance with I.G.1.

1. Elimination of Station Blackout Test

Generic Letter 83-24 recommends elimination of the Station Blackout test due to adverse plant impacts and requests each plant to document the bases for elimination of the test by demonstrating the adverse impacts.

In the regulatory process for WNP-2, the Supply System developed an integrated response to TMI Action Item I.G.1 which involved a combination of operator classroom training and augmented operations experience from both the preoperational and power ascension test phases of the WNP-2 Startup Test Program. A special test subprogram was devised to demonstrate both normal and abnormal plant transients and the operation of critical systems to control them. An outline of our integrated response is contained in FSAR Appendix B, Item I.G.1. The development of this subprogram paralleled the BWR Owners' Group work to establish augmented operator participation in initial test programs. Our special test program is not limited to low power

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(i.e., less than 5%), but rather takes advantage of the entire power/flow map maneuvering which occurs during a BWR startup. This approach affords the operations personnel a more extensive exposure to the operating characteristics of a BWR prior to routine, high power operation. Neither the content nor the schedule of our program have been an issue on our docket as the WNP-2 Safety Evaluation Report contained favorable judgments from the NRC staff.

The WNP-2 plant response to a Station Blackout event would closely parallel that described in the Susquehanna Safety Evaluation Report submitted to the Commission in June of 1982. The two primary areas of concern for WNP-2 are primary containment temperature and reactor vessel inventory as they are for Susquehanna. Following a total loss of AC power condition, the drywell area temperature would increase as a result of heat addition (fixed losses from the reactor vessel) without drywell cooling capability. Attendant with this temperature increase comes a primary containment pressure increase. As containment pressure exceeds approximately 2 psig (1 psig higher than normal in an inerted containment), one of two Loss of Coolant Accident (LOCA) signals would be sensed which trips and isolates the drywell cooling system. Upon power restoration, the recovery from a pressurized hot containment is, therefore, complicated by the requirement to vent primary containment to less than 2 psig before cooling can occur. Drywell air temperature would continue to increase, eventually exceeding the design temperature. This severely challenges safety-related equipment operability from an equipment qualification standpoint. Prolonged operation at or above the environmental conditions for qualification would pose a significant risk for damage and would certainly necessitate wholesale equipment replacement upon recovery. In addition, containment pressure would approach design values as heat is dissipated to the suppression pool during and subsequent to reactor vessel depressurization without pool cooling.

Reactor vessel inventory is the second major safety parameter of concern in a Station Blackout event. For WNP-2, a total loss of AC power would disable our High Pressure Core Spray (HPCS) system, thus eliminating one of the two sources of water utilized in the Susquehanna base case evaluation. The Reactor Core Isolation Cooling (RCIC) system would be available to provide vessel makeup and eventually restore water level to normal. In this condition, water level would approach the top of active fuel and remain low for a long period of time before the RCIC flow rate balanced the boil off rate. Significant fuel failure could occur with uncovering of the core.

The challenges to these two safety parameters are well understood and predictable. Our emergency operating procedures provide mitigating actions for a Station Blackout event to prevent undue risk to the health and safety of the public. The Supply System's position on Station Blackout testing is that the empirical confirmation of analytical capabilities does not justify the expenditure or risk associated with the adverse impact on equipment and the approach of safety parameters to limiting design values that this event produces. Station Blackout testing on WNP-2 is not appropriate.



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2. Restatement of WNP-2 Approach to Compliance to I.G.1

In addition, the Supply System's response to I.G.1 had committed to review the results of simulated loss of all AC power tests from other recently licensed BWRs for direct applicability to WNP-2 and to consider repeating such a Station Blackout test (or portions thereof) on WNP-2.

Based on Item 1 above, our I.G.1 response will be modified to reflect elimination of further consideration of a Station Blackout test. In addition, the I.G.1 response will reflect elimination of one of the proposed "special test" systems (RHR steam condensing mode), since this system has been deactivated on WNP-2.

In conclusion, our special test program for operator training is consistent with the recommendations of the BWR Owners' Group and constitutes compliance with I.G.1 with the proviso that, for the program to be effective, a complete traverse through the power/flow map must be authorized from the on-set of license issuance.

Very truly yours,



G. C. Sorensen
Acting Manager, Nuclear Safety and Regulatory Programs

CMP:lp

cc: R Auluck - NRC
WS Chin - BPA
A Toth - NRC Site

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