

ENCLOSURE
SAFETY EVALUATION REPORT
MODIFICATION TO INITIAL TEST PROGRAM
GRAND GULF UNIT 1
DOCKET NO. 50-416

INTRODUCTION

By letter dated April 23, 1985, MP&L requested NRC approval of their proposed elimination of Startup Test 25B (Test 25B), Full Reactor Isolation at 100% full power (FP) in the Initial Test Program for Grand Gulf Unit 1. As background, a full reactor isolation event at 75% full power occurred on April 7, 1985. With the exception of main steam header vibration, this transient event was fully instrumented. The transient data were reviewed by MP&L and extrapolated to 100% FP. Based on this analysis and extrapolation, MP&L concluded that the objective of Startup Test 25B was fulfilled and requested the NRC to accept the 75% FP trip event in place of the scheduled 100% FP test.

EVALUATION

The NRC reviewed the April 23, 1985 submittal and requested additional information and substantiation by letter dated May 3, 1985. A response to the May 3 request was received from MP&L dated May 7, 1985. Sufficient detail and substantiation was received to enable the staff to complete its review.

One consideration in the staff's evaluation is that the 75% FP data conservatively extrapolated to 100% FP compares favorably with data taken from other BWR-6's. The staff's original acceptance of the Initial Test Program was based in part on operating experience and test results at similar plants.*

Another consideration is that the 75% FP data extrapolated to 100% FP indicate that the test objective and the acceptance criteria of Startup Test No. 25B were met. The pressure transient was conservative with respect to the original prediction. The feedwater system provided good water level control during the 75% FP event and no significant difference is expected for a full power event.

Another consideration is that Startup Test 27 (Test 27), a turbine trip and generator load rejection is scheduled to be performed at 100% FP. Although this test does not replicate all aspects of the full reactor isolation test at

*See Safety Evaluation Report related to the operation of Grand Gulf Nuclear Station, Units 1 and 2, NUREG-0831, September 1981, Chapter 14 "Initial Test Program".

100% FP, it will provide additional verification of the plant's capability to respond to operational transients at 100% FP. Test 27 will provide data regarding the pressure transient and feedwater level control that may be as severe as the transient expected by performing Test 25B. In addition to reactor process variables, main steam header vibration will be monitored during Test 27 so that dynamic loading on the main steam pipe can be assessed.

Another consideration in staff's evaluation is that the full reactor isolation test at 100% FP is an unnecessary challenge to plant safety systems.

One final consideration in the staff's evaluation of MP&L's proposal is that all components, instrumentation, and actuation logic associated with full reactor isolation have been tested previously during the preoperational startup program. These components will continue to be surveyed periodically to verify correct performance.

CONCLUSION

Based on its review, the staff concludes that the analysis of results from the full reactor isolation event at 75% FP demonstrates acceptable transient behavior for full reactor isolation at 100% FP. Accordingly the staff approves the elimination of Startup Test No. 25B, full reactor isolation at 100% FP from the Initial Test Program for Unit 1.