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SUBJECT: Submits results of calorimetric flow test performed
 subsequent to return to power from steam generator
 replacement outage & justification for not proposing Tech
 Spec changes re low reactor coolant loop flow trip setpoint.

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Director of Nuclear Reactor Regulation
Attention: Mr. Steven A. Varga, Chief
Operating Reactors Branch No. 1
Division of Licensing
United States Nuclear Regulatory Commission
Washington, DC 20555

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261/LICENSE NO. DPR-23
REACTOR COOLANT SYSTEM FLOW DETERMINATION

Dear Mr. Varga:

INTRODUCTION

Carolina Power & Light Company (CP&L) committed to provide the results of the calorimetric flow test performed subsequent to return to power from the steam generator replacement outage at H. B. Robinson Steam Electric Plant Unit No. 2 (HBR2). We also agreed to evaluate the need to propose Technical Specification (TS) changes regarding the low reactor coolant loop flow trip setpoint (TS 2.3.1.2(f)). This letter provides the calorimetric flow test results and our justification for not proposing TS changes.

DISCUSSION

The thermal design flow (TDF) for the reactor coolant system used in the HBR2 Cycle 10 safety analysis was 97.29×10^6 lbm/hr. The actual measured flow was 107.8×10^6 lbm/hr which was reduced to 105.8×10^6 lbm/hr after applying the calorimetric uncertainty factor. Minimum measured flow is, therefore, a factor of 1.0875 greater than TDF.

The low flow trip setpoint used in the safety analysis is 87.6×10^6 lbm/hr while the actual setpoint is 95.2×10^6 lbm/hr.

Since power is proportional to $\dot{m} \Delta T$, a reduction in \dot{m} , while holding power constant, will result in a corresponding increase in ΔT . The overpower ΔT is set to cause a turbine runback if ΔT increases to 1.04 of ΔT_o , which corresponds to a flow reduction of approximately 4 percent and a minimum margin to TDF of 1.044. A turbine and reactor trip results if ΔT increases to 1.06 of ΔT_o which corresponds to a flow reduction of approximately 6 percent and a minimum margin to TDF of 1.022.

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CONCLUSION

The overpower ΔT protection ensures that the minimum flow exceeds TDF. Therefore, no TS changes are necessary. Please contact Mr. S. D. Floyd at (919) 836-6901 if you have any questions concerning this letter.

Yours very truly,



S. R. Zimmerman
Manager

Nuclear Licensing Section

SRZ/SDF/mf (1446SDF)

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