SAFETY EVALUATION

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2

DOCKET NO. 50-325 AND 50-324

MONITORING OF ELECTRIC POWER TO

THE REACTOR PROTECTION SYSTEM (RPS)

Introduction and Summary

Our concerns regarding the deficiencies in the existing design of RPS power monitoring in BWRs was transmitted to Carolina Power and Light Company (CP&L) by NRC generic letter dated September 24, 1980. In response to this, by letters dated December 10, 1980 and January 29, 1982, CP&L proposed design modifications and changes to the technical specifications. CP&L subsequently decided to revise its proposed technical specification to conform to the current model technical specification. Review of these revised technical specifications is being deferred pending receipt; however, the technical specification relay trip setpoints have been evaluated since they will remain unchanged. A detailed review and technical evaluation of these proposed modifications and the technical specifications relay trip setpoints was performed by Lawrence Livermore Laboratory (LLL) under contract to the NRC, and with general supervision by NRC Staff. This work is reported in LLL report UCID-19135 "Technical Evaluation of the Monitoring of Electric Power to the Reactor Protection System" dated April 1982 (enclosed). We have reviewed this technical evaluation report and concur in its conclusion that the proposed design modifications and technical specification relay trip setpoints are acceptable.

Proposed Changes and Evaluation Criteria

The following design modifications and technical specification changes were proposed by CP&L:

1. Installation of GE designed protection assemblies, two in each of the three sources of power to the RPS (RPS M-G sets A and B and the one alternate source). Each assembly includes a circuit breaker and a monitoring module consisting of an undervoltage, overvoltage and an underfrequency sensing relay.

2. CP&L also proposed the addition of trip setpoints in the technical specification associated with the design modifications cited above. The time delay to the trip setpoints will be verified by GE before incorporating in the technical specifications.

The criteria used by LLL in its technical evaluation of the proposed changes includes General Design Criteria (GDC-2) "Design Basis for Protection Against Natural Phenomenon," and GDC-21, "Protection System Reliability and Testability," of Appendix A to 10 CFR 50; IEEE-279-1971, "Criteria for Protection Systems for Nuclear Power Generating Stations;" and NRC memorandum from F. Rosa to J. Stolz, T. Ippolito and G. Lainas dated February 19, 1979.

Conclusions

We have reviewed the LLL Technical Evaluation Report and concur in its findings that the proposed modifications and relay trip setpoints will provide automatic protection for the RP components from a sustained abnormal power supply. Therefore, we conclude that CP&L's proposed design modifications and the relay trip setpoints to be included in the technical specifications are acceptable. Proposed Technical Specifications LCO and surveillance requirements will be evaluated when received.

Author: I. Ahmed

Dated: AUG 3 - 1982