

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SHEARON HARRIS UNIT 1: PRESSURE VESSEL FLUENCE EVALUATION
CAROLINA POWER AND LIGHT COMPANY

1 INTRODUCTION

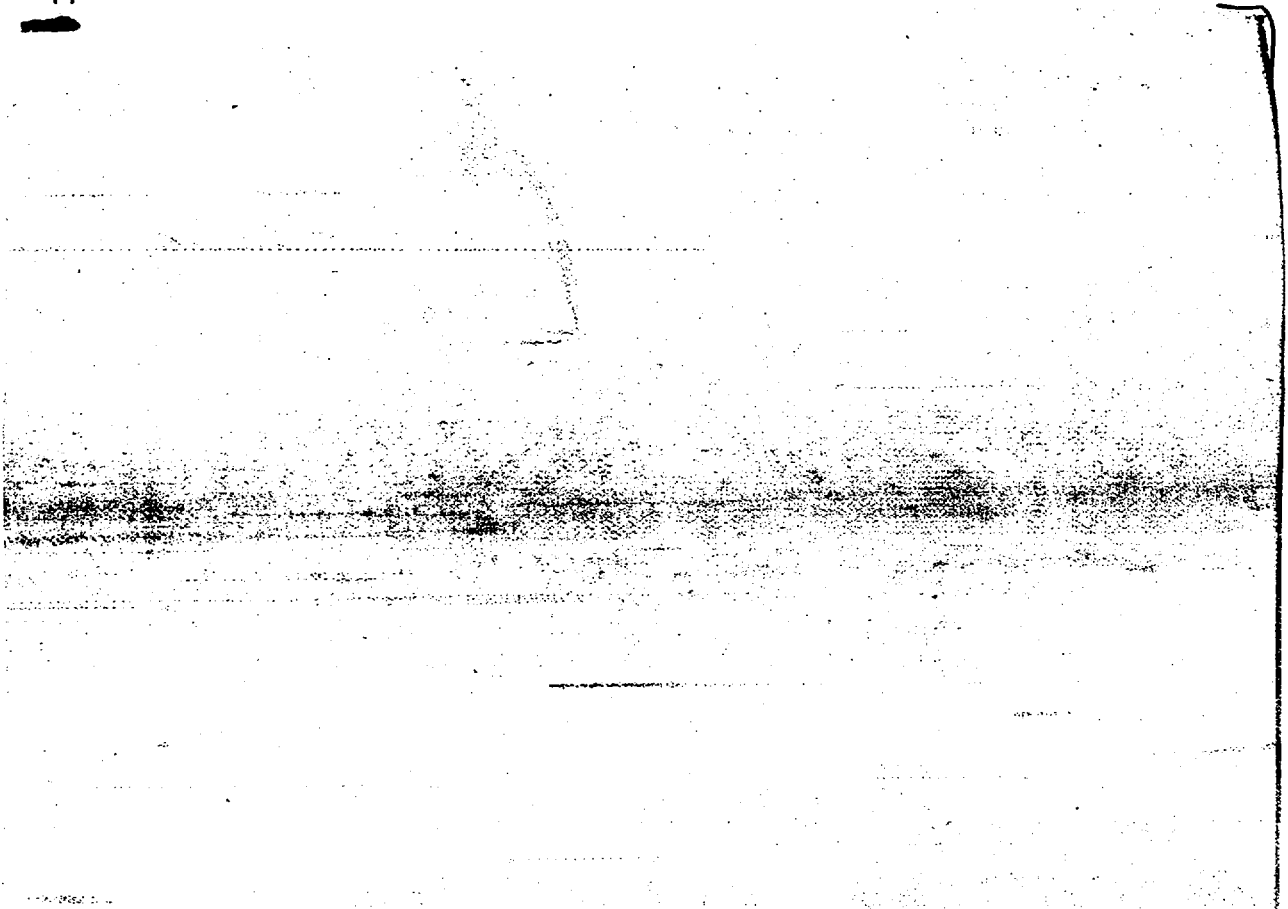
By letter dated December 14, 2000, the Carolina Power and Light Company (CP&L) licensee for the Shearon Harris Unit 1 nuclear power plant, submitted information and requested technical specification changes to implement a power level uprate from 2775 MWt to 2900 MWt (Ref. 1).

The licensee states that in order to achieve the increased power level, future loadings will include once burned or even fresh fuel assemblies on peripheral locations which will increase the neutron leakage. In addition the new operating conditions will result in higher downcomer temperatures, lower water density, lower thermalization rate and therefore, higher fast neutron leakage. Finally, the proposed effective full power years (EFPYs) of operation to the end of the current license are 36, i.e. an average load factor of 90% is assumed.

The purpose of this review is to establish the acceptability of the proposed fluence values for 36 EFPYs.

2 EVALUATION

The fluence calculations are documented in BAW-2355 Supplement 1 (Ref. 2) (attached to the submittal). The calculational methodology was based on BAW-2411PA (Ref. 3) which has been reviewed and approved by the NRC. Therefore, this review will focus on proper application of the methodology.



EX-5

3 REFERENCES

1. Letter from J. Scarola, Carolina Power and Light Company to US NRC "Shearon Harris Nuclear Power Plant Docket No. 50-400/License No. NPF-63 License Amendment Application Power Uprate" dated December 14, 2000.
2. BAW-2355, Supplement 1, "Supplement to the Analysis of Capsule X Carolina Power and Light Company Shearon Harris Nuclear Power Plant" by M.J. DeVan and S.Q. King, Framatome Technologies Incorporated, Lynchburg VA. November, 1999.
3. BAW-2411PA, Revision 1, "Fluence and Uncertainty Methodologies" by J.R. Worsham III, Framatome Technologies Incorporated, Lynchburg VA, April 1999.