UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 36 TO FACILITY LICENSE NO. DPR-23

CAROLINA POWER AND LIGHT COMPANY

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

DOCKET NO. 50-261

INTRODUCTION

By letter dated March 6, 1979, Carolina Power and Light Company (the licensee) requested amendment of the Technical Specifications appended to Facility Operating License DPR-23 for H. B. Robinson Unit 2. The proposed amendment would permit removal of the part-length control rods. This has been done on other Westinghouse reactors.

DISCUSSION AND EVALUATION

The Technical Specifications, as now written, require that these part-length rod cluster control assemblies (PLRCCAs) be withdrawn and excluded from the core at all times during reactor operation. The PLRCCAs are not needed, used or assumed to be available in any safety analysis of the facility. The proposed removal, therefore, will not cause any change in required reactivity characteristics or safety margins at full power, low power or shutdown. To the contrary, removal will eliminate the potential for part-length rod insertion into the core during operation. Such an event could cause an abnormal flux distribution or reactor shutdown.

In order to preserve the current dynamic operating characteristics of the reactor (i.e., pressure drops, coolant flow rates, etc.) which could be affected if just removal of the PLRCCAs were to be performed, the licensee proposes to install thimble plug assemblies in the spaces previously occupied by PLRCCAs. The thimble plug assembly consists of a flat base plate with short rods suspended from the bottom surface and a spring pack assembly. The twenty short rods, called thimble plugs, project into the upper ends of the guide thimbles to reduce the bypass flow area. Fuel assemblies without control rods, burnable poison rods, or source rods use identical devices. Similar short rods are also used on the source assemblies and fuel assembly guide thimbles. As installed in the core, the thimble plug assemblies interface with both the upper core plate and with the fuel assembly

top nozzles by resting on the adapter plate. The spring pack is compressed by the upper core plate when the upper internals assembly is lowered into place. Each thimble plug is permanently attached to the base plate by a nut which is locked to the threaded end of the plug by a pin welded to the nut.

All components in the thimble plug assembly, except for the spring, are constructed from type 304 stainless steel. The springs are wound from Inconel X-750 for corrosion resistance and high strength.

The thimble plugs will effectively limit bypass flow through the rod cluster control guide thimbles in the fuel assemblies from which the PLRCCAs have been removed, just as they currently limit bypass flow in those assemblies which do not contain control rods, source rods, or burnable poison rods.

Based on the considerations that (1) the PLRCCAs are not needed for reactor operation, (2) that removal of these assemblies will remove the chance for an abnormal flux distribution or reactor shutdown and (3) that insertion of the thimble plug assemblies will preserve the current dynamic operating characteristics of the reactor, we conclude that this change is acceptable.

ENVIRONMENTAL CONSIDERATION

We have determined that this amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that this amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement, or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

CONCLUSION:

We have concluded, based on the considerations discussed above, that: (1) because the amendment involves neither a significant increase in the probability or consequences of accidents previously considered nor a significant decrease in a safety margin, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities

will be conducted in compliance with the Commission's regulations and the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public:

Dated: April 11, 1979