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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 35 TO FACILITY OPERATING LICENSE NO. NPF-29

MISSISSIPPI POWER & LIGHT COMPANY

SYSTEM ENERGY RESOURCES, INC.

SOUTH MISSISSIPPI ELECTRIC POWER ASSOCIATION

GRAND GULF NUCLEAR STATION, UNIT 1

DOCKET NO. 50-416

INTRODUCTION

By letter dated June 3, 1987, as supplemented June 22, 1987, System Energy Resources, Inc., (the licensee) requested an amendment to Facility Operating License No. NPF-29 for the Grand Gulf Nuclear Station, Unit 1 (GGNS-1). The proposed amendment would (1) change the definition of core alteration in the Technical Specifications (TSs) to include certain exceptions and change footnotes in the TSs to be consistent with the new definition; and (2) change a snubber surveillance test sample plan in the TSs by decreasing from 10% to 5% the number of additional snubbers required to be tested for each snubber in the initial test sample that fails to meet specified functional test criteria.

EVALUATION

(1) Definition of Core Alteration

The following changes to the TSs would be made:

a. The definition of core alteration would be modified to exclude normal movement of the source range monitors (SRMs), intermediate range monitors (IRMs), local power monitors (LPRMs), traversing in-core probes (TIPs) or special movable detectors.

b. The "*" footnote to Specification 3.1.1 on shutdown margin would be deleted. This footnote provides an exception to the core alteration definition for movement of IRMs, SRMs or special movable detectors.

c. The "*" footnote to Surveillance Requirement 4.1.3.2.a would be modified by deleting the exception to the core alteration definition for the movement of SRMs, IRMs or special movable detectors. The exception for normal control rod movement remains and is not affected by this proposed change.

d. The "*" footnote to Table 3.3.1-1 would be modified by deleting the exceptions to the core alteration definition for IRMs, SRMs or special movable detectors. The part of the "*" footnote requiring operable SRM instrumentation for replacement of LPRM strings would be retained.

e. The "**" footnote to Specification 3.9.2 on refueling operations instrumentation would be deleted. This footnote provides an exception to the core alteration definition for movement of IRMs, SRMs, or special movable detectors.

f. The "*" footnote to Specification 3.9.5 would be modified by deleting the exception to the core alteration definition for incore instrumentation. The part of the "*" footnote that allows an exception for control rod movement with their normal drive system remains and is not affected by this proposed change.

The present definition of core alteration is:

> "Core alteration shall be the addition, removal, relocation or movement of fuel, sources, incore instruments or reactivity controls within the reactor pressure vessel with the vessel head removed and fuel in the vessel. Suspension of core alterations shall not preclude completion of the movement of a component to a safe conservative position."

The proposed change would insert the following after the first sentence:

> "Normal movement of the SRMs, IRMs, LPRMs, TIPs, or special movable detectors is not considered a core alteration."

The exception to the present definition of core alteration for the normal movement of the SRMs, IRMs, LPRMs, TIPs, and special movable detectors is needed in certain specifications related to refueling operations in order to preclude unnecessary suspension of the normal movement of these detectors. During a refueling outage, maintenance or modification of equipment can result in TS limiting conditions for operation which require that core alterations be suspended. In the present TSs, exceptions to the definition of core alteration for normal movement of detectors are provided by footnotes in those TSs where a need for the exception was foreseen.

However, some TSs that require suspension of core alterations do not presently have a footnote excepting normal movement of detectors. For example, Specification 3.8.1.2 requires suspension of core alterations with diesel generator 11 or 12 inoperable. With the present TSs, surveillance tests of SRMS and IRMs could not be performed because the tests require movement of the detectors. Making the exception a part of the definition will correct this type of operational problem. Where particular conditions are required for normal movement of detectors, these conditions are retained in the applicable TSs. For example, the requirement for SRMs to be operable when replacing LPRMs is retained in Specification 3/4.3.1, "Reactor Protection System Instrumentation."

The NRC staff has reviewed the proposed changes to the GGNS-1 TSs related to core alterations. The detectors in the SRM, IRM, LPRM, TIP and the special movable detectors are sealed unit fission detectors and their reactivity worth is insignificant with respect to reactivity excursion events. Therefore, allowing the normal movement of these detectors will not significantly increase the probability or consequences of an accident previously analyzed in the Final Safety Analysis Report. The proposed change would only permit normal movement of the incore detectors. Normal movement of these detectors includes insertion and withdrawal using detector drives, replacement of detectors, and movement of special movable detectors in the core region. The addition, removal or relocation of SRMs, IRMs, LPRMs and TIPs would still be prohibited.

The staff concludes that the proposed changes to the definition of core alteration and the deletion of footnotes in the TSs would not significantly reduce the level of safety and would tend to enhance safety by making the TSs more readable. Accordingly, the proposed changes are acceptable.

(2) Snubber Sample Plan

To verify the operability of safety-related snubbers, Surveillance Requirement 4.7.4.e in the TSs requires functional testing to be performed on a periodic basis. The TSs permit the use of any one of three specified sampling plans. Essentially, all three plans require the testing of an initial sample of snubbers from the total population. For every inoperable snubber identified during testing of an initial sample of snubbers, an additional or subsequential sample is required to be tested. For Sample Plan 1, the size of the initial and the subsequential samples is 10% and 10%, respectively. The initial sample size of 10% for Sample Plan 1 was selected on the basis that every snubber in the plant will be tested at least once every 15 years when the associated functional testing period is 18 months. The subsequential sample size of 10% was selected as a conservative value.

For Sample Plans 2 and 3, initial and subsequential sample sizes are both determined by statistical considerations, and the subsequential samples are half that of the initial samples. All three sample plans should yield the same results. Yet for a population that would produce the same initial sample size for Sample Plans 1 and 2 or 1 and 3, the subsequential sample sizes will differ by twice as much. To make all three plans have an equal basis, the conservatively determined subsequential size of 10% for Sample Plan 1 should be reduced to 5%.

The American Society of Mechanical Engineers Operation and Maintenance Working Group 4 Standard (O&M 4 Standard), "Examination and Performance Testing of Nuclear Power Plant Dynamic Restraints (Snubbers)," has taken this into consideration and changed the recommended subsequential sample size from 10% to 5% for Sample Plan 1. The standard was approved by the NRC staff and will be adopted by ASME Boiler & Pressure Vessel Code Section XI for plant surveillance guidance.

In conclusion, the proposed change to Sample Plan 1 would make it consistent with the other two sample plans in the TSs, is in accordance with the requirements recommended by the O&M 4 Standard, and is therefore acceptable.

ENVIRONMENTAL CONSIDERATION

This amendment involves a change to a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes to the surveillance requirements. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that this amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

CONCLUSION

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and the security nor to the health and safety of the public.

Dated: September 10, 1987

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