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ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555-0001

Joseph M. Farley Nuclear Plant Units 1 and 2
Report of Changes to Emergency Plan and Summary of 50.54(q) Analysis

Ladies and Gentlemen:

In accordance with 10 CFR 50.54(q)(5) and 10 CFR 72.44(f), Southern Nuclear Operating Company (SNC) hereby submits descriptions of changes to the emergency plan and a summary of the analysis demonstrating that the changes do not reduce the effectiveness of the plan. The emergency plan continues to meet the requirements in 10 CFR 50 Appendix E and the planning standards of 10 CFR 50.47(b). A description of the changes and a summary of the 50.54(q) analysis is enclosed.

This letter contains no NRC commitments. If you have any questions, please contact Ryan Joyce at (205) 992-6468.

Respectfully submitted,



Jamie Coleman
Regulatory Affairs Director

JMC/efb/cbg

Enclosure:

Description of Emergency Plan Changes and Summary of 50.54(q) Analysis

cc: NRC Regional Administrator, Region II
NRC NRR Project Manager – Farley
NRC Senior Resident Inspector – Farley
Alabama - State Board of Health – Director of Radiation Control
SNC Records RTYPE: CFA 04.054

Joseph M. Farley Nuclear Plant Units 1 and 2
Report of Changes to Emergency Plan and Summary of 50.54(q) Analysis

Enclosure

Description of Emergency Plan Changes and Summary of 50.54(q) Analysis

Description of Emergency Plan Changes and Summary of 50.54(q) Analysis

On December 12th, 2023, Southern Nuclear Operating Company (SNC) implemented changes to the Farley Nuclear Plant (FNP) emergency plan. Specifically, the changes include impacts to the FNP Emergency Action Levels (EALs), radiological fastbreaker determination criteria, and the meteorological information and dose assessment system (MIDAS) factors.

As a result of FNP Unit 1 & 2 nuclear fuel design transitioning from a 20,000 MWd/MtU equilibrium cycle to 24,678 MWd/MtU, new source terms for the reactor core and reactor coolant system (RCS) have been developed to be used in re-analysis of the dose consequence analyses of record. SNC has performed an analysis of this plant configuration change under the provisions of 10 CFR 50.54(q)(2) to determine if the change maintains the effectiveness of the emergency plan and meets the standards in 10 CFR 50.47(b) and the requirements in 10 CFR Part 50, Appendix E. The analysis addresses conforming changes to implement the plant configuration change.

No revisions to the SNC Standard Emergency Plan (SEP) or the Farley Annex to the SEP were required, as these documents do not identify a specific core configuration. However, the change in peak rod burnup results in changes to the source terms for the core and RCS that are used as input to several EAL threshold value calculations. Changes to the EAL threshold values conform to the modified core configuration and are necessary to maintain accuracy in emergency declaration at the same hazard level as the current EALs. Changes to the radiological fastbreaker determination criteria conform to the modified core configuration and retain the ability of FNP to carry out timely and appropriate protective actions in accordance with the emergency plan and maintain the current level of public protection. Changes to MIDAS factors conform to the modified core configuration and ensure the ability of FNP to continuously and accurately monitor effluent pathways for the release of radioactive materials. Changes in the quantity and distribution of the isotopic mix of the source terms do not introduce any new isotopes or decay energies that are not already within the capability of the existing radiation monitoring and control equipment (e.g., friskers, survey instruments, continuous air monitors, or dosimeters). Updated calculations demonstrate that these changes introduce no new hazards outside the current planning and capabilities of the emergency response organization (ERO).

In conclusion, SNC has written a 50.54(q) evaluation for the above changes and has concluded that the changes do not result in a reduction in effectiveness. The SNC Standard Emergency Plan and the FNP Annex/EALs continue to meet the requirements in 10 CFR 50 Appendix E and the planning standards of 10 CFR 50.47(b).