



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

October 1, 1998

50-348

Mr. D. N. Morey  
Vice President - Farley Project  
Southern Nuclear Operating  
Company, Inc.  
Post Office Box 1295  
Birmingham, Alabama 35201-1295

SUBJECT: GENERIC LETTER 88-20, SUPPLEMENT 4, "INDIVIDUAL PLANT  
EXAMINATION FOR EXTERNAL EVENTS FOR SEVERE ACCIDENT  
VULNERABILITIES" - JOSEPH M. FARLEY NUCLEAR PLANT, UNIT NOS. 1  
AND 2 (TAC NOS. M83619 AND M83620)

Dear Mr. Morey:

On June 28, 1991, the U.S. Nuclear Regulatory Commission (NRC) issued Generic Letter (GL) 88-20, Supplement 4 (with NUREG-1407, Procedural and Submittal Guidance), requesting all licensees to perform individual plant examinations of external events (IPEEE) to identify plant-specific vulnerabilities to severe accidents and to report the results to the NRC together with any licensee-determined improvements and corrective actions. In a letter dated June 28, 1995, Southern Nuclear Operating Company, Inc. (SNC), submitted its response to the NRC.

The staff contracted with Brookhaven National Laboratory and Sandia National Laboratory (SNL) to conduct screening reviews in the seismic and fire areas, respectively, of SNC's IPEEE submittal and its associated documentation. The NRC staff conducted a screening review of the high winds, floods, and other external events (HFO) area of the submittal. In July 1997, the IPEEE Senior Review Board (SRB) met to discuss the review results in the seismic and fire areas. The HFO review results were discussed during a September 1997, SRB meeting. The SRB is comprised of the NRC's Offices of Nuclear Regulatory Research (RES), and Nuclear Reactor Regulation staff and RES consultants (SNL) with probabilistic risk assessment (PRA) expertise in external events. Based on the results of the review, the staff concluded that the aspects of seismic, fires, and HFO were adequately addressed and that a request for additional information was not necessary. Details of the staff's and contractors' findings are presented in the three technical evaluation reports attached to the staff's Safety Evaluation (SE) (enclosed).

SNC performed a reduced-scope seismic margin assessment (SMA) using the Electric Power Research Institute's SMA methodology and concluded that the plant equipment is generally rugged and well anchored. A limited number of anchorage and interaction concerns were identified and scheduled for resolution. A PRA quantification for fire events was performed in which the contribution to plant core damage frequency (CDF) was estimated to be 1.6E-4/Ry (reactor-year) for Unit 1 and 1.2E-4/Ry for Unit 2. These contributions to CDF from fire events include multiple components, systems, and accident sequences. SNC also estimated that the contributions from other external events (e.g., external floods and high winds) are insignificant at the Joseph M. Farley (Farley) site. SNC estimated that the CDF due to internal events is about 1.3E-4/Ry, including internal flooding.

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The Nuclear Management and Resources Council (NUMARC, now called Nuclear Energy Institute) recommended that a potential severe accident vulnerability be defined as having any component, system, operator action, or accident sequence that contributes more than 50 percent to the CDF or has a CDF greater than  $1E-4/RY$ . SNC used this definition and did not identify any potential vulnerabilities associated with external events; thus, no improvements related to external events were considered as necessary. However, a number of plant-specific improvements were implemented by SNC as a result of the seismic and fire assessments. These procedural and design improvements will improve the seismic and fire safety by reducing the potential for seismic and fire vulnerabilities at Farley.

SNC has addressed generic safety issues (GSIs) GSI-57, "Effects of Fire Protection System Actuation on Safety-Related Equipment," GSI-103, "Design for Probable Maximum Precipitation," GSI-131, "Potential Seismic Interaction Involving the Movable In-Core Flux Mapping System used in Westinghouse Plants," Unresolved Safety Issue [USI] A-45, "Shutdown Decay Heat Removal Requirements," and the Sandia Fire Risk Scoping Study issues, which were explicitly requested in Supplement 4 to GL 88-20 and its associated guidance in NUREG-1407.

On the basis of the screening review, the staff concludes that SNC's IPEEE process is capable of identifying the most likely severe accidents and severe accident vulnerabilities and that the Farley IPEEE has met the intent of Supplement 4 to GL 88-20.

In addition, SNC's IPEEE submittal contains some specific information that addresses the external event aspects of certain other GSIs (e.g., GSI-147, "Fire-Induced Alternate Shutdown/Control Room Panel Interactions," GSI-148, "Smoke Control and Manual Fire-Fighting Effectiveness," and GSI-172, "Multiple System Responses Program [MSRP].") The specific information associated with each issue is identified and discussed in the enclosed SE. Based on the staff's and contractors' reviews of the information contained in the submittal, the staff believes that SNC's process is capable of identifying potential vulnerabilities associated with these issues. However, two MSRP issues, which are identified in the enclosed SE, were not explicitly or completely addressed in the submittal. The staff is assessing the significance of these individual MSRP issues for Farley and will address them separately from the IPEEE program in the future, if necessary. On the basis that no vulnerabilities associated with the external events aspects of these issues were identified at Farley, with the possible exception of these individual MSRP issues, the staff considers that the remaining GSIs have been satisfactorily resolved for Farley.

Overall, the Farley IPEEE submittal was well documented and of high technical quality. This is reflected by the fact that no requests for additional information were needed, which allowed the staff to complete its review. The fact that there are some minor issues that may or may not

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October 1, 1998

involve further evaluation does not detract from the view that the Farley IPEEE submittal was exceptional.

If you have any questions, please contact me at (301) 415-2426.

Sincerely,

ORIGINAL SIGNED BY:

Jacob I. Zimmerman, Project Manager  
Project Directorate II-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket Nos. 50-348 and 50-364

Enclosure: Safety Evaluation

cc w/encl: See next page

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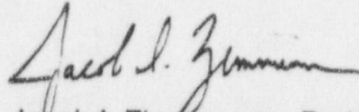
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Jacob I. Zimmerman, Project Manager  
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