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MEMORANDUM TO: John A. Zwolinski, Acting Director
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

FROM: Thomas L. King, Director *Thomas L. King*
Division of Systems Technology
Office of Nuclear Regulatory Research

SUBJECT: REVIEW OF ST. LUCIE INDIVIDUAL PLANT EXAMINATION OF
EXTERNAL EVENTS (IPEEE) SUBMITTAL

Attached is RES's Staff Evaluation Report (SER) on its review of the St. Lucie IPEEE submittal. Also included with the SER is the contractor's Technical Evaluation Report (TER). We recommend that the enclosed report be formally issued to document the staff's findings and conclusions.

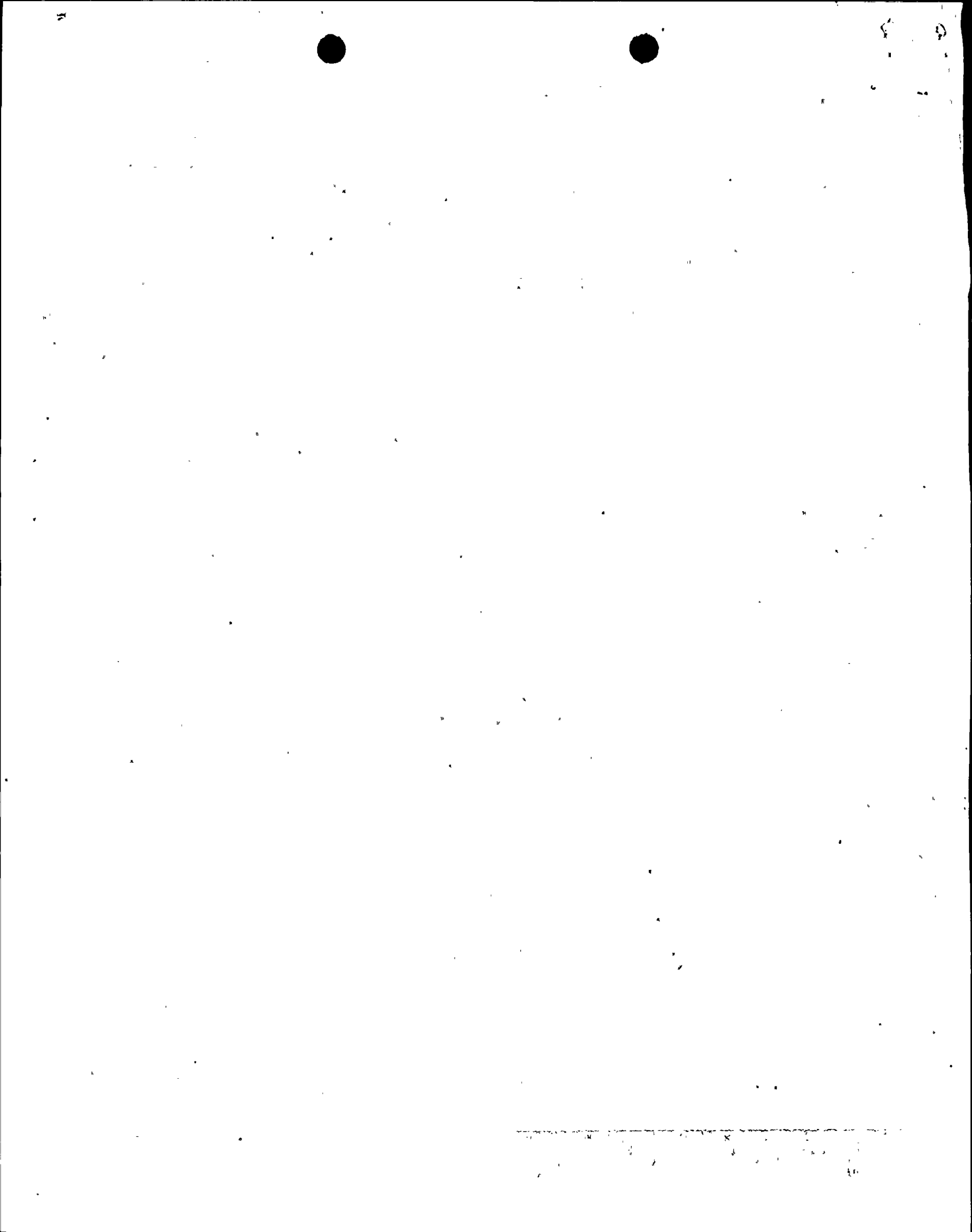
A Step 1 review was performed which examined the IPEEE results for their completeness and "reasonableness" considering the design and operation of the plant. On the basis of this review and further review by a senior review board (SRB), the staff concluded that the aspects of seismic; fires; and high winds, floods, transportation and other (HFO) external events were adequately addressed. The SRB is comprised of RES and NRR staff and RES consultants (Sandia National Laboratories) with probabilistic risk assessment expertise for external events. The staff's review findings are summarized in the attached SER, and the details of the contractor's findings in the TER appear in an appendix to the SER.

The licensee, Florida Power and Light Company (FPL), conducted a seismic walkdown in order to evaluate component anchorage capability and potential spatial interactions. The licensee has used the Electric Power Research Institute (EPRI)'s fire-induced vulnerability evaluation (FIVE) methodology and performed an extensive walkdown of the plant. The licensee estimated that the contributions from other external events (e.g., external floods and high winds) are insignificant at the St. Lucie site. The licensee estimated that the core damage frequency (CDF) due to internal events is about 2.3×10^{-5} /reactor-year (RY) for Unit 1 and 2.6×10^{-5} /RY for Unit 2, including internal flooding.

The licensee's IPEEE submittal did not explicitly provide a definition of severe accident vulnerability. However, the licensee's Individual Plant Examination (IPE) defined a vulnerability as: (1) a failure which makes a disproportionately large contribution to the total CDF or significant release probabilities and, in turn, is considered significantly higher than those of PRAs for similar plants, or (2) a failure which has any unusual and significant impact on the total CDF or release probabilities. The licensee did not identify any potential severe accident vulnerabilities related to seismic, fire, or other external events. However, a number of plant-specific improvements in the seismic, fire, and HFO areas were implemented at St. Lucie.

On the basis of the Step 1 review, the staff concludes that the licensee's IPEEE process is capable of identifying the most likely severe accidents and severe accident vulnerabilities and, therefore, that the St. Lucie IPEEE has met the intent of Supplement 4 to Generic Letter 88-20.

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As a part of the IPEEE, unresolved safety issue (USI) USI A-45, "Shutdown Decay Heat Removal Requirements," and generic safety issues (GSIs) GSI-57, "Effects of Fire Protection System Actuation on Safety-Related Equipment," GSI-103, "Design for Probable Maximum Precipitation (PMP)," GSI-131, "Potential Seismic Interaction Involving the Movable In-Core Flux Mapping System Used In Westinghouse Plants," and the Sandia Fire Risk Scoping Study (FRSS) issues were specifically identified during the initial planning of the IPEEE program and explicitly discussed in Supplement 4 to GL 88-20 and its associated guidance in NUREG-1407 as needing to be addressed in the IPEEE. The specific information associated with each issue is identified and discussed in the attached SER. Based on the review of the information contained in the submittal, the staff believes that the licensee's process is capable of identifying potential vulnerabilities associated with USI A-45, GSI-103, GSI-131, and two FRSS issues. On the basis that no vulnerabilities associated with the external events aspects of these issues were identified at St. Lucie, the staff considers that these safety issues have been satisfactorily resolved for St. Lucie. However, GSI-57 and three FRSS issues which are identified in the attached SER, were not explicitly or completely addressed in the submittal. The need for any additional assessment or actions related to the resolution of GSI-57 and these three FRSS issues for St. Lucie will be addressed by the staff separately from the IPEEE program.

In addition, the licensee's IPEEE submittal contains some specific information that addresses the external event aspects of certain generic safety issues not identified in GL 88-20, Supplement 4, or NUREG-1407. These are 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 of these issues is identified and discussed in the attached SER. Based on the review of the information contained in the submittal, the staff believes that the licensee's process is capable of identifying potential vulnerabilities associated with GSI-147, and six MSRP issues. On the basis that no vulnerabilities associated with the external events aspects of these issues were identified at St. Lucie, the staff considers that these safety issues have been satisfactorily resolved for St. Lucie. However, GSI-148 and five MSRP issues, which are identified in the attached SER, were not explicitly or completely addressed in the submittal. The need for any additional assessment or actions related to the resolution of GSI-148 and these individual MSRP issues for St. Lucie will be addressed by the staff separately from the IPEEE program.

If you have any questions regarding the attached SER, please contact Ed Chow (415-6571). When the SER is issued to the licensee, please put the following staff on distribution: Ed Chow, RES, Alan Rubin, RES, Carolyn Woods, RES, and Doug Coe, NRR.

Attachment: As stated

