



Florida Power & Light Company, 6501 South Ocean Drive, Jensen Beach, FL 34957

December 5, 2002

L-2002-242
10 CFR 50.90

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

RE: St. Lucie Unit 1
Docket No. 50-335
FPL RAI Response for Core
Operating Limits Report Methodologies

By letter L-2002-078 dated May 22, 2002, Florida Power & Light (FPL) submitted a proposed license amendment to update the list of topical reports listed in Technical Specification (TS) Section 6.9.1.11.b. The proposed change would revise the Core Operating Limits Report (COLR) methodology list to add two NRC approved topical reports, EMF-2310 (P)(A) and EMF-2328 (P)(A), and delete certain topical reports which are superseded by other listed reports. Additionally, consistent with Technical Specification Task Force (TSTF) 363, the referencing of the topical reports would be changed to cite each report only with the report number and title.

By letter dated October 31, 2002, the Nuclear Regulatory Commission (NRC) staff requested additional information to support their review of the submittal. The request was discussed with FPL staff and a response date of December 9, 2002 was established. Attached is FPL's response to the RAI.

The Attachment contains the FPL response. The original No Significant Hazards Determination bounds the information provided in the RAI response. In accordance with 10 CFR 50.91 (b) (1), a copy of the RAI response is being forwarded to the State Designee for the State of Florida.

Please contact us if there are any questions about this submittal.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Donald E. Jernigan', is written over the typed name below.

Donald E. Jernigan
Vice President
St. Lucie Plant

DEJ/KWF

Attachment

cc: Mr. W. A. Passetti, Florida Department of Health and Rehabilitative Services

A001

St. Lucie Unit 1
Docket No. 50-335
FPL RAI Response for Core
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Attachment
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FPL RAI Response
for
Core Operating Limits Report Methodology

**Responses to the Request for Additional Information (RAI)
Core Operating Limits Report (COLR) Report Update
Florida Power and Light (FPL)
St. Lucie Unit 1, Docket No 50-335**

Question 1:

The NRC's safety evaluation of Topical Report EMF-2328(P)(A), Revision 0, "PWR Small Break LOCA Evaluation Model, S-RELAP5 Based" states a condition on the use of ANF-RELAP code that still applies to the use of S-RELAP5. The statement is:

"That while it has been shown in Reference 53 [Loomis, G.G., "Summary of the Semiscale Program (1965-1986)," NUREG/CR-4945, July 1987] that the thermal-hydraulic phenomena observed for breaks up to 10 percent of the cold leg flow area are the same, if the code is used for break sizes larger than 10 percent of the cold leg flow area additional assessments must be performed to ensure that the code is predicting the important phenomena which may occur."

FPL's submittal did not state the break size range intended to be used with the code. Provide information which states what break size range is intended to be used with the code, and whether the code will be used for breaks larger than 10 percent of the cold leg flow area, also provide the required additional assessments.

Response

The methodology described in Topical Report EMF-2328(P)(A), Revision 0, has not been used for regulatory analysis for St. Lucie Unit 1. It is being added to the list of topical reports listed in Technical Specification (TS) Section 6.9.1.11.b to allow for future use in the analysis of small break LOCAs for St. Lucie Unit 1. When used in future small break LOCA analyses for St. Lucie Unit 1, it will be used for break sizes no greater than 10 percent of the cold leg flow area, as stipulated in the NRC safety evaluation of Topical Report EMF-2328(P)(A), Revision 0, and no additional assessments are required.

Question 2:

The NRC's safety evaluation of Topical Report EMF-2310(P)(A), Revision 0, "SRP Chapter 15 Non-LOCA Methodology for Pressurized Water Reactors," states in Section 5.0 "Evaluation of S-RELAP5:"

"The staff [also] notes, however, that a generic topical report describing a code such as S-RELAP5 cannot provide full justification for each specific individual plant application. The individual applicant must still provide justification for the specific application of the

code which is expected to include as a minimum, the nodalization, defense of the chosen parameters, any needed sensitivity studies, justification of the conservative nature of the input parameters, and calculated results."

Provide justification for the specific application of the code including the elements listed above.

Response

Reference: Framatome ANP Letter, NRC:02:055, J. F. Mally to Chief, Planning, Program and Management Support Branch, USNRC, Clarification of Safety Evaluation for EMF-2310(P)(A), "SRP Chapter 15 Non-LOCA Methodology for Pressurized Water Reactors," November 11, 2002

The S-RELAP5 methodology described in Topical Report EMF-2310(P)(A), Revision 0, has not been used for regulatory analysis for St. Lucie Unit 1. Topical Report EMF-2310(P)(A), Revision 0, is being added to the list of topical reports listed in Technical Specification (TS) Section 6.9.1.11.b to allow for future use in applicable non-LOCA safety analyses for St. Lucie Unit 1. When the S-RELAP5 methodology described in Topical Report EMF-2310(P)(A), Revision 0, is used in future non-LOCA safety analyses for St. Lucie Unit 1, it will be used consistent with the requirements and guidance described in Topical Report EMF-2310(P)(A), Revision 0, and as stipulated in the associated NRC safety evaluation of the Topical Report EMF-2310(P)(A), Revision 0.

Justification for the Specific Application of S-RELAP5

Topical Report EMF-2310(P)(A), Revision 0, provides sufficient justification for the specific application of the S-RELAP5 methodology for the 2 hot leg, 4 cold leg St. Lucie Unit 1 plant design (2 x 4 loop plant). This specific justification is provided in Section 6.0, "Sample SRP Transients" of Topical Report EMF-2310(P)(A), Revision 0, which uses a 2 x 4 loop plant design similar to St. Lucie Unit 1. This justification includes the nodalization, a defense of the chosen model parameters, the necessary sensitivity studies, and justification of the conservative nature of the model input parameters, all as shown in the calculated results of the justification assessment. Future St. Lucie Unit 1 non-LOCA safety analyses, performed with the S-RELAP5 methodology described in Topical Report EMF-2310(P)(A), Revision 0, will follow the guidance provided in Topical Report EMF-2310(P)(A), Revision 0, for the development of the St. Lucie Unit 1 S-RELAP5 model. This will assure that the justification for the code application, provided in Topical Report EMF-2310(P)(A), Revision 0, remains applicable for St. Lucie Unit 1 and no additional assessments will be required.

Nodalization

St. Lucie Unit 1 configuration is similar to the 2 x 4 loop plant (2 hot legs, 4 cold legs) modeled in Topical Report EMF-2310(P)(A), Revision 0. For each non-LOCA event analysis, FPL will use nodalization similar to that used in Topical Report EMF-2310(P)(A), Revision 0, for the 2 x 4 loop plant sample problem. Any significant changes to this nodalization will be justified with any needed sensitivity studies and submitted or made available to the NRC, as appropriate, consistent with the NRC safety evaluation of Topical Report EMF-2310(P)(A), Revision 0, and as clarified in the NRC response to the referenced Framatome ANP letter and any subsequent clarifications.

Defense of the Chosen Parameters

For each future specific application of the code for St. Lucie Unit 1, FPL will ensure that the values of the model parameters are within the range evaluated in Topical Report EMF-2310(P)(A), Revision 0. Any deviations from these values will be justified with any needed sensitivity studies and submitted or made available to the NRC, as appropriate, consistent with the NRC safety evaluation of Topical Report EMF-2310(P)(A), Revision 0, and as clarified in the NRC response to the referenced Framatome ANP letter and any subsequent clarifications.

Justification of the Conservative Nature of the Input Parameters

All the input parameters for the St. Lucie Unit 1 S-RELAP5 model will be justified and documented as being conservative with respect to the St. Lucie Unit 1 plant configuration, consistent with the guidance provided in Topical Report EMF-2310(P)(A), Revision 0, and the associated NRC safety evaluation.

Calculated Results

For each specific application of the code, the calculated results will be documented in the event analysis calculation. If the transient response and the calculated results deviate substantially from the expected results based on the current analysis, FPL will justify the calculated results and submit or make available these results to the NRC, as appropriate, consistent with the NRC safety evaluation of Topical Report EMF-2310(P)(A), Revision 0, and as clarified in the NRC response to the referenced Framatome ANP letter or any subsequent clarifications.