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ACCESSION NBR:8310270120 DOC.DATE: 83/10/21 NOTARIZED: NO DOCKET #
FACIL:50-335 St. Lucie Plant, Unit 1, Florida Power & Light Co. 05000335
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EISENHUT,D.G. Division of Licensing

SUBJECT: Provides amended safety evaluation & determination of no significant hazards in response to concerns re NSHC determination submitted w/830825 proposed license amend re peaking factor & load follow power peaking penalty.

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BOX 14000, JUNO BEACH, FL 33408

FLORIDA POWER & LIGHT COMPANY

October 21, 1983
L-83-495

Office of Nuclear Reactor Regulation
Attention: Mr. Darrell G. Eisenhut, Director
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Eisenhut:

Re: St. Lucie Unit 1
Docket No. 50-335
Proposed License Amendment
Peaking Factor and Load
Follow Power Peaking Penalty

In response to concerns identified by your staff regarding the "No Significant Hazards Considerations" determination submitted with our application for License Amendment on August 25, 1983 (L-83-460), attached is an amended Safety Evaluation and Determination of No Siginificant Hazards.

The proposed License Amendment is administrative in nature in that 1) the plant is not operated in a load follow mode, and therefore, references to load follow operation are not applicable; 2) regarding the Peaking Factor Penalty, all peaking factors and linear heat rates are calculated with full core codes (the tilt multiplier to peaking factors is needed only for non-full core analysis codes, and therefore, not applicable to full core code calculations); and 3) the changes are consistent with St. Lucie Unit 2 Technical Specifications.

The above changes are justified in that NRC has previously found such analytical methods acceptable.

Very truly yours,

J. W. Williams, Jr.
Vice President
Nuclear Energy

JWW/RJS/cab

Attachments

A001
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SAFETY EVALUATION

I. Removal of References to Load Follow Mode

Since commercial operation of St. Lucie Unit 1 in 1976, Florida Power & Light Company has operated Unit 1 in a base loaded mode. Due to the significant economic advantages associated with maximizing Unit 1 electrical output, operation in the base loaded mode will continue for the foreseeable future. For this reason, references to load follow operation are not applicable to St. Lucie Unit 1 and should be deleted. This is consistent with St. Lucie Unit 2 Technical Specifications in that St. Lucie Unit 2 has no reference to load follow operation or specific penalty factors associated with load follow operation.

The specific penalty factors that should be deleted are as follows:

1) 1.10 for Linear Heat Rate (T.S. 4.2.1.4b.2)

2) 1.03 for Total Planar Radial Peaking Factaor (T.S.4.2.2.2)

3) 1.02 for Total Integrated Radial Peaking Factor (T.S.4.2.3.2)

These penalty factors were originally included in the St. Lucie Unit 1 Technical Specifications as interim values until NRC completed their review and approved the CECOR power distribution analysis topical report CENPD-153. NRC has approved CENPD-153, and as evidenced in the St. Lucie Unit 2 Technical Specifications, the additional conservatism of the interim penalty factors is no longer required.

II. Removal of the Azimuthal Tilt (T_q) Penalty Factor

The tilt multiplier on radial peaking factor values was originally included in the St. Lucie Unit 1 Technical Specifications because there was no full core power distribution analysis code available at that time. Since licensing of St. Lucie Unit 1, more advanced incore analysis codes have been developed which utilize full core geometry, and all nuclear peaking factor calculations for both St. Lucie Unit 1 and Unit 2 are normally performed using full core power distribution analysis codes. Therefore, any tilt component in the radial power distribution is included in the calculated peaking factors. As a result, and as evidenced in the St. Lucie Unit 2 Technical Specifications, it is unnecessary to multiply the values derived from a full core power distribution analysis by the tilt factor. The proposed Technical Specifications 4.2.2.2 and 4.2.3.2, however, will require the tilt penalty factor to be included on radial peaking factor calculations performed using a non-full core power distribution analysis code, as is the case for St. Lucie Unit 2.

The proposed changes, deletion of references to the load follow mode of operation and limiting the applicability of the azimuthal tilt (Tq) multiplier to peaking factor calculations performed with non-full core power distribution analysis codes, are administrative in nature and consistent with St. Lucie Unit 2 Technical Specifications. The proposed changes are justified in that NRC has previously found such analytical methods acceptable.

DETERMINATION OF NO SIGNIFICANT HAZARDS

The proposed changes are administrative in nature and consistent with St. Lucie Unit 2 Technical Specifications, and therefore, do not represent any significant hazards considerations as discussed below:

1. 10 CFR 50.92 (c)(1) The proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated because neither of the changes proposed require a change in analysis input or assumptions for any St. Lucie Unit 1 transient. Therefore, acceptable results will continue to be shown for all previously analyzed transients.

2. 10 CFR 50.92(c)(2): The proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated because they do not modify the configuration of the plant or the manner in which it is operated. Since no changes to the plant or its operation are made to the proposed change, there is no increase in the possibility of creating an accident of a new or different type over what currently exists without the proposed change.

3. 10 CFR 50.92(c)(3): The proposed changes do not involve any reduction in the margin of safety because neither of these changes involve any changes in allowable modes of plant operation or allowable envelopes for plant operational parameters. Additionally, none of the changes proposed either represents or requires change in input to plant safety analysis.

Based on the discussion presented above and the preceding Safety Evaluation, Florida Power & Light Company has concluded that none of the proposed changes to St. Lucie 1 Technical Specifications would represent a significant hazard as discussed in 10 CFR 50.92(c).