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RECIP.NAME RECIPIENT AFFILIATION
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See Rpt.

SUBJECT: Application for amends to licenses DPR-31,DPR-41,DPR-67 & NPF-16 to TS re implementation of FPL nuclear physics methodology for calculations of core operating limits rept parameters.

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JAN 17 1995

FPL

L-95-006
10 CFR §50.36
10 CFR §50.90

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

Gentlemen:

Re: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
Proposed License Amendments
Implementation of FPL Nuclear Physics Methodology for
Calculations of Core Operating Limits Report Parameters

In accordance with Title 10 Code of Federal Regulations §50.90 (10 CFR §50.90), Florida Power and Light Company (FPL) requests that Appendix A of Facility Operating Licenses DPR-31 and DPR-41 be amended to modify Turkey Point Units 3 and 4 Technical Specification (TS) 6.9.1.7, Core Operating Limits Report (COLR). Enclosed as Attachment 4 of this submittal is FPL's Topical Report NF-TR-95-01 entitled "Nuclear Physics Methodology for Reload Design of Turkey Point & St. Lucie Nuclear Plants." The proposed revision to the Technical Specifications includes a reference to NF-TR-95-01 as the topical report which demonstrates FPL's proficiency in calculating the COLR parameters. The COLR was added to the Turkey Point Unit's 3 and 4 Technical Specifications by Amendments 156 and 150, respectively. By Amendments 156/150, the parameters of Axial Flux Difference Limits were added to Turkey Point's COLR. By amendment 167/161, the parameters of Control Rod Insertion Limits and Heat Flux Hot Channel Factors were added to Turkey Point's COLR.

A description of the amendments request is provided in Attachment 1. FPL has determined that the proposed license amendments do not involve a significant hazard pursuant to 10 CFR §50.92. The no significant hazards determination in support of the proposed Technical Specification change is provided in Attachment 2. Attachment 3 provides the proposed Technical Specification changes. Attachment 4 provides NF-TR-95-01 Topical Report which demonstrates FPL's ability to perform certain reload core design calculations.

In accordance with 10 CFR §50.91(b)(1), a copy of these proposed license amendments are being forwarded to the State Designee for the State of Florida.

The proposed amendments have been reviewed by the Turkey Point Plant Nuclear Safety Committee and the FPL Company Nuclear Review Board.

Should there be any questions on this request, please contact us.

Very truly yours,

T. F. Plunkett
Vice President
Turkey Point Plant

A001

Attachments
TFP/RJT/rt

cc: S. D. Ebneter, Regional Administrator, Region II, USNRC
T. P. Johnson, Senior Resident Inspector, USNRC, Turkey Point
W. A. Passetti, Florida Department of Health and Rehabilitative Services

STATE OF FLORIDA)
) ss.
COUNTY OF DADE)

T. F. Plunkett being first duly sworn, deposes and says:

That he is Vice President, Turkey Point Nuclear Plant, of Florida Power and Light Company, the Licensee herein;

That he has executed the foregoing document; that the statements made in this document are true and correct to the best of his knowledge, information and belief, and that he is authorized to execute the document on behalf of said Licensee.

T. F. Plunkett

Subscribed and sworn to before me this
17 day of Jan, 1995.

Cheryl A. Kelly

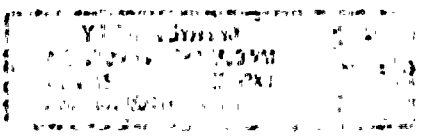
Name of Notary Public (Type or Print)

NOTARY PUBLIC, in and for the County of Dade, State of Florida

CHERYL A. KELLY
MY COMMISSION # CC 223781
EXPIRES: September 27, 1996
Bonded Thru Notary Public Underwriters

My Commission expires
Commission No.

T. F. Plunkett is personally known to me.



ATTACHMENT 1

DESCRIPTION OF AMENDMENTS REQUEST

DESCRIPTION OF AMENDMENTS REQUEST

Introduction

Generic Letter (GL) 88-16, dated October 4, 1988, was issued to encourage licensees to amend the Technical Specifications related to cycle-specific parameters. The generic letter provided guidance for relocation of certain cycle-dependent core operating limits from a licensee's Technical Specifications to the Core Operating Limits Report (COLR). This would allow changes to the values of the core operating limits without prior NRC approval (i.e., license amendment), as long as an NRC approved methodology for the parameter limit calculation is followed. In accordance with GL 88-16, FPL submitted and received NRC approval for two proposed license amendments to relocate selected parameters from the Turkey Point Technical Specifications to the COLR. These submittals are as follows:

(a) By letter L-93-092, dated April 23, 1993, FPL proposed revising the Turkey Point Technical Specifications by (a) changing the Axial Flux Distribution (AFD) control methodology in Technical Specification 3/4.2.1 from Constant Axial Offset Control (CAOC) to Relaxed Axial Offset Control (RAOC) and (b) relocating the AFD cycle-specific core operating limits from the Technical Specifications to the COLR. The NRC approved this submittal by issuing Amendments 156 and 150 to Turkey Point Units 3 and 4 Technical Specifications.

(b) By letter L-94-128, dated July 19, 1994, FPL proposed revising the Turkey Point Technical Specifications by relocating (a) TS Figure 3.1-2, Rod Bank Insertion Limits versus Thermal Power curve, and (b) TS Figure 3.2-2, K(Z) Normalized $F_Q(Z)$ as a Function of Core Height curve, from the Technical Specifications to the COLR. The NRC approved this submittal by issuing Amendments 167 and 161 to Turkey Point Units 3 and 4 Technical Specifications.

GL 83-11, dated February 8, 1983, was issued to encourage licensees to perform their own safety analyses and describes the current NRC practices regarding licensee qualification for performing safety analyses. The proposed Technical Specification change provides documentation to demonstrate FPL's capabilities to use NRC approved methodology to calculate the COLR parameters.

In accordance with the recommendations of GL 88-16 and 83-11, and the safety evaluations which approved Amendments 156/150 and 167/161 for Turkey Point Units 3 and 4, FPL proposes to revise TS 6.9.1.7 to include a reference to FPL's Topical Report NF-TR-95-01, as the documentation to demonstrate FPL's proficiency in performing certain reload design calculations.

Discussion

GL 83-11, entitled "Licensee Qualification For Performing Safety Analyses In Support Of Licensing Actions", describes the current NRC practice regarding licensee qualification for performing safety analyses in support of licensing actions. The generic letter encourages utilities to perform their own safety analyses since doing so significantly improves their understanding of plant behavior. GL 83-11 makes the following statements:

> " ...our review focuses primarily on the competence of the licensee and vendors regarding quality assurance practices, the technical competence of the licensees and vendors with respect to their ability to set up an input deck, execute a code, and properly interpret the results must also be assured. NRR [NRC Office of Nuclear Reactor Regulation] obtains this assurance by reviewing the code verification information submitted by the licensee or vendor. The information we look for includes comparisons performed by the user of the code results to experimental data, plant operational data, or other benchmarked analyses.
>
> ..... each licensee or vendor who intends to use a safety analysis computer code to support licensing actions should demonstrate their proficiency in using the code by submitting code verification performed by them..."

Additional information supporting the NRC's view of the development of licensees analytical capabilities was presented by Larry Phillips (USNRC Reactor Systems Branch) at the March 21-24, 1993, USCEA Fuel Cycle Conference held in Dallas, Texas. At this conference Mr. Phillips made the following statements as detailed in the meeting transcripts:

> "For safety evaluations that result in actions that require NRC prior approval, it is necessary for NRC to conclude that the codes and methods used to reach a safety decision are acceptable before it can be concluded that the proposed action is acceptable. In order to avoid repetition of reviews and to better segregate and document the methodology part of a safety evaluation, NRC recommends that licensees submit a report of the methodology used for NRC review and approval .....
>
> For safety evaluations involving the determination of operating limits for inclusion in a "Core Operating Limits Report", the plant technical specifications must reference the methodologies used, the NRC review and approval of these methods are required prior to inclusion of the reference in the technical specification."

In order to develop this proficiency, FPL signed a Technology Exchange Agreement with Westinghouse Electric Corporation. The Westinghouse methodology included several important advantages:

- A physics methodology which included extensive written procedures (METCOM) which documented in a step by step fashion core design calculational practices.
- A training program which included hands-on experience utilizing METCOM and performing actual calculations on the computer workstations to ensure that the FPL engineers understood the Westinghouse methodology.
- Physics methodology and computer codes previously reviewed and approved by the NRC for all pressurized water reactor applications.
- An agreed upon process under which FPL engineers would perform the reload physics calculations for Turkey Point Unit 3, Cycle 14 independently of Westinghouse and Westinghouse provide Quality Assurance of all calculations.

Training of FPL personnel in the Westinghouse methods involved 5500 manhours of training. FPL individuals were trained in areas ranging from Loading Pattern Scoping, Cross-Section Development, Loading Pattern Generation, Safety Analysis Models and Analysis, Nuclear Design Models and Analysis, to the development of Core Follow Analysis.

FPL Topical Report NF-TR-95-01 describes the physics methods used by FPL to analyze the core characteristics for FPL's nuclear units. This report includes a summary description of the Westinghouse computer programs and methodology as applied by FPL to model the Turkey Point and St. Lucie Nuclear Power Station cores. Comparisons between predicted and operating data (i.e., critical boron concentration, moderator temperature coefficients) are provided as a demonstration of FPL's qualifications to use the Westinghouse methodology to perform reload design calculations for the Turkey Point and St. Lucie nuclear units.

FPL's proficiency in executing the nuclear physics methodology for the reload design calculations for Turkey Point Units 3 and 4 using NRC reviewed and approved methods and computer codes is demonstrated by the enclosed NF-TR-95-01 topical report.

Proposed Technical Specifications Changes

FPL proposes to change the following Technical Specification in support of the proposed amendments:

1. Technical Specification 6.9.1.7: revise the Technical Specification requirements for the "CORE OPERATING LIMITS REPORT" to include a reference to FPL Topical Report NF-TR-95-01, Nuclear Physics Methodology for Reload Design of Turkey Point & St. Lucie Nuclear Plants.

   Justification: GL 83-11 makes the following statement:

   > "..... each licensee or vendor who intends to use a safety analysis computer code to support licensing actions should demonstrate their proficiency in using the code by submitting code verification performed by them..."

   As described in Attachment 4, FPL signed a Technology Exchange Agreement with Westinghouse Electric Corporation to develop the ability to perform the reload design calculations for FPL nuclear plants (Turkey Point and St. Lucie). This agreement included the transfer of Westinghouse methods, extensive training of FPL engineers at both FPL and Westinghouse, and access to Westinghouse computer codes and models. The documentation provided in Topical Report NF-TR-95-01 entitled "Nuclear Physics Methodology for Reload Design of Turkey Point & St. Lucie Nuclear Plants," demonstrates FPL's proficiency in performing reload design calculations.

   The proposed change adds the reference of the topical report to the Technical Specification requirements for the "CORE OPERATING LIMITS REPORT", to be consistent with the recommendations of GL 88-16 and 83-11. In accordance with GL 88-16, the NRC-approved methodology is specified. The actual COLR report will be required to be submitted to the NRC upon issuance, for each reload cycle, to allow continued trending of cycle-specific parameters.

Summary

FPL has determined that in-house capability to design reload cores for Turkey Point would provide the following benefits:

- a better understanding of the reload design, leading to more comprehensive evaluations of core safety,
- improved control over the design, yielding more control of the decision process, and
- improved optimization of the design, allowing better fuel utilization and economics.

As described in the enclosed FPL Topical Report NF-TR-95-01, FPL has demonstrated the ability to perform the reload design physics calculations using NRC approved methods and computer codes. No safety-related equipment, safety function, or plant operations will be altered as a result of FPL calculating the reload design parameters in the COLR. Since the applicable Updated Final Safety Analysis Report (UFSAR) limits will be maintained and the Technical Specifications will continue to require operation within the core operating limits calculated using NRC approved methodologies, the implementation of the COLR is administrative in nature as described in GL 88-16. Any changes to the COLR will be made in accordance with the provisions of 10 CFR §50.59. From cycle to cycle, the COLR will be revised such that the appropriate limits for the applicable cycle will apply.

ATTACHMENT 2

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION

Description of Proposed License Amendments

Generic Letter (GL) 88-16, dated October 4, 1988, was issued to encourage licensees to amend the Technical Specifications related to cycle-specific parameters. The generic letter provided guidance for relocation of certain cycle-dependent core operating limits from a licensee's Technical Specifications to the Core Operating Limits Report (COLR). This would allow changes to the values of the core operating limits without prior NRC approval (i.e., license amendment), as long as an NRC approved methodology for the parameter limit calculation is followed. In accordance with GL 88-16, FPL submitted and received NRC approval for two proposed license amendments to relocate the parameters of Axial Flux Distribution, Rod Bank Insertion Limits and K(Z), from the Turkey Point Technical Specifications to the COLR.

GL 83-11, dated February 8, 1983, was issued to encourage licensees to perform their own safety analyses and describes the current NRC practices regarding licensee qualification for performing safety analyses. This proposed Technical Specification change demonstrates FPL's capabilities to use NRC approved methodology to calculate the COLR parameters.

In accordance with the recommendations of GL 88-16 and 83-11, and the safety evaluations which approved Amendments 156/150 and 167/161 for Turkey Point Units 3 and 4, FPL proposes to revise TS 6.9.1.7 to include a reference to FPL's Topical Report NF-TR-95-01, as the documentation to demonstrate FPL's proficiency in performing reload design calculations.

Introduction

The Nuclear Regulatory Commission has provided standards for determining whether a significant hazards consideration exists (10 CFR 50.92(c)). A proposed amendment to an operating license for a facility involves no significant hazards consideration, if operation of the facility in accordance with the proposed amendment would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety. Each standard is discussed below for the proposed license amendments.

Discussion

(1) **Operation of the facility in accordance with the proposed amendment would not involve a significant increase in the probability or consequences of an accident previously evaluated.**

The addition of the reference to FPL topical report which demonstrates FPL's ability to perform certain reload design

calculations for Turkey Point Units 3 and 4 is administrative in nature and has no impact on the probability or consequences of any Design Bases Event (DBE) occurrences previously evaluated. The reload design calculations will be performed using methodologies and computer codes approved by the NRC and poses no increase in the probability or consequences of any accident previously evaluated.

The Core Operating Limits Report (COLR) parameters will be evaluated every cycle to ensure proper compliance with the Updated Final Safety Analysis Report (UFSAR). These limits will be evaluated in accordance with 10 CFR §50.59, which ensures that the reload will not involve an increase in the probability of occurrences or consequences of an accident previously evaluated. Title 10 CFR §50.59 (2) states that a proposed change involves an unreviewed safety question (i) if the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the safety analysis report may be increased. Consequently, since any change to the reload core design analysis must be evaluated relative to the more restrictive evaluation criterion of 10 CFR §50.59, then operation of the facility in accordance with the proposed amendments would not involve a significant increase in the probability or consequences of an accident previously evaluated.

(2) **Operation of the facility in accordance with the proposed amendment would not create the possibility of a new or different kind of accident from any accident previously evaluated.**

The addition of the reference to FPL topical report which demonstrates FPL's ability to perform certain reload design calculations for Turkey Point Units 3 and 4 is administrative in nature and has no impact, nor does it contribute in any way to the possibility of a new or different kind of accident from any accident previously evaluated. No new accident scenarios, failure mechanisms or limiting single failure events are introduced as a result of the proposed change.

The generation of the Axial Flux Difference, Rod Bank Insertion limits and K(Z) curve will be performed using NRC-approved methodology and are submitted to the NRC, as a revision to the COLR, to allow the NRC staff to trend. The Technical Specifications will continue to require operation within the core operating limits and appropriate actions will be taken if these limits are exceeded.

Title 10 CFR §50.59 permits a licensee to make changes in the facility as described in the safety analysis report without prior Commission approval, provided that the proposed changes does not involve an unreviewed safety question. 10 CFR §50.59 (2) states that a proposed change involves an unreviewed safety question (ii) if a possibility for an accident or malfunction of a different type than any evaluated previously in the safety

analysis report may be created. Consequently, since any change to the reload core design analysis must be evaluated relative to the more restrictive evaluation criterion of 10 CFR §50.59, then operation of the facility in accordance with the proposed amendments would not create the possibility of a new or different kind of accident from any accident previously evaluated.

(3) **Operation of the facility in accordance with the proposed amendment would not involve a significant reduction in the margin of safety.**

The margin of safety is not affected by FPL performing the reload design calculations for Turkey Point Units 3 and 4. The supporting Technical Specification values are defined by the accident analyses which are performed to conservatively bound the operating conditions defined by the Technical Specifications. The development of the limits for future reloads will continue to conform to the methodology described in NRC approved documentation. In addition, each future reload will involve a 10 CFR §50.59 review to assure that operation of the units within the cycle specific limits will not involve a reduction in a margin of safety. 10 CFR §50.59 (2) states that a proposed change involves an unreviewed safety question (iii) if the margin of safety as defined in the basis for any technical specification is reduced. Consequently, since any change to the reload core design analysis must be evaluated relative to the more restrictive evaluation criterion of 10 CFR §50.59, then operation of the facility in accordance with the proposed amendments would not involve a significant reduction in a margin of safety.

Summary

Based on the above discussion, FPL has determined that the proposed amendments do not (1) involve a significant increase in the probability or consequences of an accident previously evaluated, (2) create the possibility of a new or different kind of accident from any accident previously evaluated, or (3) involve a significant reduction in a margin of safety; and therefore the proposed changes do not involve a significant hazards consideration as defined in 10 CFR 50.92.