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PLUNKETT,T.F. Florida Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION
Document Control Branch (Document Control Desk)

SUBJECT: Application for amends to licenses DPR-31 & DPR-41,modifying TS 3.1.3.6, "Reactivity Control Sys CR Insertion Limits," 3/4.2.2, "Heat Flux Hot Channel Factor - FQ(Z)" & 6.9.1.7, "COLR" & associated bases,per GL 88-16.COLRs encl.

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FPL

JUL 19 1994

L-94-128
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
Addition of Rod Bank Insertion Limits and K(Z) Curve to
Core Operating Limits Report

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) 3.1.3.6, Reactivity Control Systems Control Rod Insertion Limits; TS 3/4.2.2, Heat Flux Hot Channel Factor - $F_Q(Z)$ and TS 6.9.1.7, Core Operating Limits Report and their associated BASES. The proposed revision to the Technical Specifications includes the relocation of two curves from Technical Specifications to the Core Operating Limits Report (COLR). The curves to be relocated include (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. The Core Operating Limits Report was added to the Turkey Point Unit's 3 and 4 Technical Specifications by Amendments 156 and 150, respectively, dated November 12, 1993. The proposed changes are made in accordance with the recommendations of Generic Letter 88-16.

FPL believes that these proposed amendments are consistent with the Executive Order to reduce regulatory burden and as such is proposed consistent with the generic line item improvement.

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 revised Technical Specification changes. Attachments 4 and 5 provide the proposed Core Operating Limits Report for Turkey Point Units 3 and 4, respectively.

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.

9407210319

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

Very truly yours,

T. F. Plunkett
Vice President
Turkey Point Plant

TFP/RJT/rt

Attachments

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
5th day of July, 1994.

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 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 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. The proposed Technical Specification changes will relocate cycle-specific parameter limits from the Technical Specifications to the Core Operating Limits Report (COLR).

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 Core Operating Limits Report (COLR). The NRC approved this submittal by issuing Amendments 156 and 150 to Turkey Point Units 3 and 4 Technical Specifications.

In accordance with the recommendations of Generic Letter 88-16, and the safety evaluation which approved Amendments 156 and 150 for Turkey Point Units 3 and 4, FPL proposes the addition of two curves to the Core Operating Limits Report. The curves to be relocated include (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. The Rod Bank Insertion Limits and K(Z) curve for Turkey Point Units 3 and 4 are calculated using NRC approved methodologies. These limits are evaluated for every reload cycle and may be revised by a license amendment as appropriate, to reflect changes to cycle-specific variables.

Discussion

Rod Bank Insertion Limits

Currently, the fully withdrawn position for all of Turkey Point's Units 3 and 4 Rod Cluster Control Assemblies (RCCAs), which includes the control and shutdown banks, is 228 steps above rod bottom with a tip-to-tip distance of 128 steps maintained between control banks during overlap operation. "Parking" the RCCAs at the 228 step position for several cycles of operation may cause wear to the RCCA rodlet. As documented in NRC Information Notice 87-19, this wear is the result of core flow induced vibration which causes contact between the RCCA rodlets and the RCCA guide cards, which are located in the upper reactor internals. To avoid chronic wear at the same location

on the RCCA rodlet cladding, Westinghouse has recommended that the fully withdrawn parked position of the RCCAs be changed periodically. In accomplishing this change, wear will be spread out over a greater surface area of the RCCA rodlet cladding, thus minimizing the possibility of complete wear through the cladding at any one elevation.

By relocating TS Figure 3.1-2 from the Technical Specifications to the Core Operating Limits Report (COLR), FPL can redefine the fully withdrawn position between 225 and 231 steps, inclusive, above reactor bottom for all RCCA banks. The actual fully withdrawn position will be evaluated as part of the standard reload design analysis, using NRC approved methodologies, as performed in accordance with 10 CFR §50.59. The Reload Core Design Analysis will ensure that: (1) acceptable power distribution limits are maintained, (2) the minimum SHUTDOWN MARGIN is maintained, and (3) the potential effects of rod misalignment on associated accident analyses are limited. Title 10 CFR §50.59(a)(1)(i) permits a licensee to make changes in the facility as described in the safety analysis report, without prior Commission approval, provided the proposed change does not involve a Technical Specification change or an unreviewed safety question.

K(Z) Curve

The K(Z) curve is the normalization of the $F_Q(Z)$ curve, normalized by the maximum total peaking factor, F_Q^T, determined by the Large and Small Break Emergency Core Cooling System (ECCS) Loss of Coolant Accident (LOCA) Analysis. The $F_Q(Z)$ curve represents the envelope of the limiting peaking factors as a function of core height as determined by the Large and Small Break ECCS LOCA.

The $F_Q(Z)$ and K(Z) curve generally consist of three line segments. The first line segment is determined by the Large Break LOCA analysis. The second line segment is determined by both the Large and Small Break LOCA analyses. The Small Break LOCA analysis alone determines the third line segment.

Historically, the first line segment is representative of licensing limit which is consistent with the assumption of the chopped cosine power shape used for analysis of Large Break LOCA. The third line segment is based on the limiting Small Break LOCA power shape. The second line segment was originally based on two considerations, Departure from Nucleate Boiling (DNB) limits and a set of power distributions (power shapes) encountered during normal operation. Since the original development of the $F_Q(Z)$ and K(Z) curves, the DNB limit has been relaxed so that it would be possible to raise the second line segment. However, power shape sensitivity studies for Large Break LOCA, which have employed power shapes exceeding the second line segment, have produced results contrary to the accepted licensing position that the chopped cosine power shape is the most limiting power shape for Large Break LOCA analysis. Only with the restriction of reduced $F_Q(Z)$ at higher core elevations can the

assumption of the chopped cosine being limited be ensured. Therefore, the slope of the second line segment, as traditionally established, remains applicable and necessary based on Large Break LOCA.

Both the DNB and LOCA analyses are performed using NRC approved methodologies. During each reload design, the assumptions used in these analyses are compared with cycle-specific parameters for the core loading pattern, and addressed in the 10 CFR §50.59 evaluation.

Proposed Technical Specifications Changes

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

1. Technical Specifications INDEX - LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS (pg. iv): delete the title "FIGURE 3.1-2 ROD BANK INSERTION LIMITS VERSUS THERMAL POWER THREE-LOOP OPERATION" and the corresponding page number.

   Justification: This proposed change is editorial in nature and is made to ensure consistency with the recommendations of Generic Letter (GL) 88-16. GL 88-16 was issued specifically to encourage licensees to amend the Technical Specifications related to cycle specific parameters. These Technical Specification changes will relocate cycle-specific parameter limits (i.e., Rod Bank Insertion Limits) from the Technical Specifications to the COLR.

2. Technical Specifications INDEX - LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS (pg. v): delete the title "FIGURE 3.2-2 K(Z) - NORMALIZED $F_Q(Z)$ AS A FUNCTION OF CORE HEIGHT" and the corresponding page number.

   Justification: This proposed change is editorial in nature and is made to ensure consistency with the recommendations of GL 88-16. GL 88-16 was issued specifically to encourage licensees to amend the Technical Specifications related to cycle specific parameters. These Technical Specification changes will relocate cycle-specific parameter limits (i.e., the K(Z) curve) from the Technical Specifications to the COLR.

3. Technical Specification 3.1.3.1: revise ACTION statement c.2. to remove the reference to "Figure 3.1-2" and insert the wording "Specification 3.1.3.6"

   Justification: The proposed change is editorial in nature and is made to ensure consistency with the proposed relocation of Figure 3.1-2.

4. Technical Specification 3.1.3.6: revise the LIMITING CONDITION FOR OPERATION (LCO) for the Technical Specification on Control Rod Insertion Limits to be consistent with the recommendations of Generic Letter 88-16.

Justification: The Rod Bank Insertion Limits are developed using the NRC approved methodology of WCAP-9272-P-A, "Westinghouse Reload Safety Evaluation Methodology". Relocating TS Figure 3.1-2, "Rod Bank Insertion Limits versus Thermal Power Three-Loop Operation" curve to the Core Operating Limits Report, is consistent with the recommendations of GL 88-16. GL 88-16 was issued specifically to encourage licensees to amend the Technical Specifications related to cycle specific parameters. These Technical Specification changes will relocate cycle-specific parameter limits (i.e., Rod Bank Insertion Limits) from the Technical Specifications to the COLR.

5. Technical Specification Figure 3.1-2: Relocate Figure 3.1-2 from Technical Specifications to the CORE OPERATING LIMITS REPORT.

Justification: This proposed change is consistent with the recommendations of Generic Letter 88-16, since the Rod Bank Insertion Limits are cycle-specific parameter limits developed using NRC-approved methodologies. This curve will be included in the unit-specific COLR.

6. Technical Specification 3.2.2: revise the LIMITING CONDITION FOR OPERATION (LCO) for the Technical Specification on the Heat Flux Hot Channel Factor, to be consistent with the recommendations of Generic Letter 88-16.

Justification: The Heat Flux Hot Channel Factor Limits (which includes the K(Z) term) are developed using the NRC approved methodology of WCAP-9220-P-A, Rev. 1, "Westinghouse ECCS Evaluation Model-1981 Version" and WCAP-9561-P-A, ADD. 3, Rev. 1, "BART A-1: A Computer Code for the Best Estimate Analysis of Reflood Transients - Special Report: Thimble Modeling W ECCS Evaluation Model." Relocating TS Figure 3.2-2, "K(Z) Normalized $F_Q(Z)$ as a Function of Core Height" curve to the Core Operating Limits Report is consistent with the recommendations of GL 88-16. GL 88-16 was issued specifically to encourage licensees to amend the Technical Specifications related to cycle specific parameters. These Technical Specification changes will relocate cycle-specific parameter limits (i.e., the K(Z) curve) from the Technical Specifications to the COLR.

7. Technical Specification Figure 3.2-2: Relocate Figure 3.2-2 from the Technical Specifications to the CORE OPERATING LIMITS REPORT (COLR).

Justification: This proposed change is consistent with the recommendations of Generic Letter 88-16, since the K(Z) curve are cycle-specific parameter limits developed using NRC approved methodologies. This curve will be included in the unit-specific COLR.

8. Technical Specification 4.2.2.2 and 4.2.2.3: Delete the reference to "Figure 3.2-2" and insert the wording "K(Z)" for TS 4.2.2.2 and the wording "the CORE OPERATING LIMITS REPORT" for TS 4.2.2.3.

   Justification: The proposed change is editorial in nature and is made to ensure consistency with the proposed relocation of Figure 3.2-2.

9. Technical Specification 6.9.1.7: revise the Technical Specification requirements for the "CORE OPERATING LIMITS REPORT" to include the Rod Bank Insertion Limits and the K(Z) curve.

   Justification: The proposed change adds the additional cycle-specific operating limits to the Technical Specification requirements for the "CORE OPERATING LIMITS REPORT", to be consistent with the recommendations of Generic Letter 88-16. 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.

10. Technical Specification BASES 3/4.1.3: Redefine the maximum position indication requirement as the group demand counter indication of "231 steps."

    Justification: The full out position of the RCCA's will be defined in the Rod Bank Insertion Limit curve as developed using the NRC approved methodology of WCAP-9272-P-A, "Westinghouse Reload Safety Evaluation Methodology". Relocating TS Figure 3.1-2, "Rod Bank Insertion Limits versus Thermal Power Three-Loop Operation" curve to the Core Operating Limits Report, is consistent with the recommendations of GL 88-16.

11. Technical Specification BASES 3/4.2.2 and 3/4.2.3: Delete the wording "determined from Figure 3.2-2" and substitute the wording "specified in the CORE OPERATING LIMITS REPORT".

    Justification: The proposed change is editorial in nature and is made to ensure consistency with the proposed relocation of Figure 3.2-2.

Summary

The removal of cycle dependent variables from the Technical Specifications has no impact upon plant operation or safety. No safety-related equipment, safety function, or plant operations will be altered as a result of implementing 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 Generic Letter 88-16. Appropriate actions to be taken if Rod Bank Insertion Limits and K(Z) curve, are violated will remain in the Technical Specifications.

Any changes to the COLR will be made in accordance with the provisions in 10 CFR 50.59. From cycle to cycle, the COLR will be revised such that the appropriate limits for the applicable cycle will apply. The COLR for Turkey Point Unit 3 Cycle 14 and Unit 4 Cycle 14 is presented in Attachments 4 and 5, respectively.

ATTACHMENT 2

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION

Description of Proposed License Amendments

Generic Letter 88-16, dated October 4, 1988, was issued to encourage licensees to amend the Technical Specifications related to cycle-specific parameters. These Technical Specification changes will relocate cycle-specific parameter limits from the Technical Specifications to the Core Operating Limits Report (COLR). Presently, the parameter limits for Turkey Point Units 3 and 4 are calculated using NRC approved methodologies. These limits are evaluated for every reload cycle and may be revised by a license amendment as appropriate, to reflect changes to cycle-specific variables.

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 Core Operating Limits Report (COLR). The NRC approved this submittal by issuing Amendments 156 and 150 to Turkey Point Units 3 and 4 Technical Specifications.

In accordance with the recommendations of Generic Letter 88-16, and the safety evaluation which approved Amendments 156 and 150 for Turkey Point Units 3 and 4, FPL proposes the addition of two curves to the Core Operating Limits Report. The curves to be relocated include (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.

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 removal of cycle-specific Rod Bank Insertion limits and the K(Z) curve from the Turkey Point Units 3 and 4 Technical Specifications is administrative in nature and has no impact on the probability or consequences of any Design Bases Event (DBE) occurrences which was previously evaluated. The determination of the Rod Bank Insertion limits and K(Z) curve will be performed using methodology approved by the NRC and poses no significant increase in the probability or consequences of any accident previously evaluated.

The Rod Bank Insertion limits and K(Z) curve 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. 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 removal of the Rod Bank Insertion limits and K(Z) curve from the Technical Specifications 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 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. 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 the removal of the Rod Bank Insertion limits and K(Z) curve from the Technical Specifications. The methodology for the reload core design analysis have been approved by the NRC and does not constitute a significant reduction in the margin of safety.

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.