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SUBJECT: Requests temporary waiver of compliance from TS 3.2.1.b,
 "Axial Flux Difference" to allow operation outside plus or
 minus 5% target band w/o accruing penalty deviation time to
 calibr ex-core detectors.

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L-91-294

OCT 29 1991

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
Power Range Neutron Flux Channel Surveillance Testing With
Axial Flux Difference Outside of Target Band
Temporary Waiver of Compliance

This letter requests the Nuclear Regulatory Commission's approval of a temporary waiver of compliance of Technical Specification 3.2.1.b, "Axial Flux Difference." This waiver allows operation with the Axial Flux Difference (AFD) outside the $\pm 5\%$ target band without accruing penalty deviation time, solely for the calibration of excore detectors, provided the AFD is within the Acceptable Operation Limits of Technical Specification (TS) Figure 3.2-1. The waiver accomplishes this by referencing footnote "***" of TS 3.2.1 in the APPLICABILITY statement of the specification rather than in the ACTION statement of TS 3.2.1. b(2).

TS 3.2.1 contains a footnote which allows 16 hours of operation outside the referenced AFD target band, but within the Acceptable Operation Limits of Figure 3.2-1, for the purpose of performing an incore/excore calibration of the Nuclear Instrumentation System detectors. The footnote now applies to Action Statement (b) of TS 3.2.1.

Table 4.3-1, "Reactor Trip System Instrumentation Surveillance Requirements," Item 2.a "Power Range, Neutron Flux - High Setpoint Channel Calibration," references footnote (6) which recommends that the incore-excore calibration be performed above 75% of rated thermal power.

The "***" footnote reads as follows:

*** Surveillance testing of the Power Range Neutron Flux Channels may be performed pursuant to Specification 4.3.1.1 provided the indicated AFD is maintained within the Acceptable Operation Limits of Figure 3.2-1. A total of 16 hours operation may be accumulated with the AFD outside of the above required target band during testing without penalty deviation."

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In the Turkey Point Technical Specifications, this footnote applies to ACTION statement (b) of TS 3.2.1, which pertains solely to reducing the power range neutron flux - high trip setpoint at a power level of less than 50% of Rated Thermal Power (RTP).

Because of the location of the footnote, the excore calibration can not be performed at the power level recommended in Technical Specification Table 4.3-1. The accuracy of the calibration is dependent on the power level at which the test is performed, therefore, it is important to perform the incore/excore calibration test above 75% of RTP. Calibration at less than 50% power or with a limited axial flux difference reduces the accuracy of the setpoints at 100% power.

A description of the written request for the temporary waiver of compliance is provided in Attachment 1. The basis for FPL's conclusion that the request does not involve a significant hazards consideration is provided in Attachment 2.

Issuance of this waiver does not compromise either the health and safety of plant personnel or the general public or involve irreversible environmental consequences.

This document was reviewed by the Plant Nuclear Safety Committee, and approved by the Plant Manager.

Should there be any questions, please contact us.

Very truly yours,



T. F. Plunkett
Vice President
Turkey Point Nuclear

TFP/rjt/rt

cc: Assistant Director of Projects, NRR, USNRC
Mr. Rajender Auluck, Project Manager, NRR, USNRC
Senior Resident Inspector, USNRC, Turkey Point Plant

ATTACHMENT 1

REQUEST FOR TEMPORARY WAIVER OF COMPLIANCE

REQUEST FOR TEMPORARY WAIVER OF COMPLIANCE

Dr. Thomas E. Murley, Director of NRC Office of Nuclear Regulation, prepared a staff position paper dated February 22, 1990, documenting details to be included in a submittal for a temporary waiver of compliance. In accordance with this staff position paper, Florida Power and Light Company (FPL) submits the enclosed written request.

- (1) A discussion of the requirements for which a waiver is requested.

FPL requests a temporary waiver of compliance of Technical Specification 3.2.1, "Axial Flux Distribution." The proposed waiver would allow operation with the Axial Flux Difference (AFD) outside the required target band of $\pm 5\%$ without accruing penalty deviation time, but within the Acceptable Operation Limits, at power levels between 50% and 90% of Rated Thermal Power (RTP), for a time interval not to exceed 16 hours, for the sole purpose of performing an incore/excore calibration of the Nuclear Instrumentation System detectors.

TS 3.2.1 contains a footnote which allows 16 hours of operation outside the referenced AFD target band, but within the Acceptable Operation Limit, for the purpose of performing the incore/excore calibration.

In the Turkey Point Technical Specifications, this footnote applies only to ACTION statement (b) of TS 3.2.1., which pertains solely to reducing the high trip setpoint for power range neutron flux. Because of the location of the footnote, the excore calibration can not be performed at the power level recommended in Table 4.3-1 of Turkey Point's Technical Specifications. The accuracy of the calibration is dependent on the power level at which the test is performed, therefore, it is important to perform the incore/excore calibration test above 75% of rated thermal power. Calibration at less than 50% power or with a limited axial flux difference reduces the accuracy of the setpoints at 100% power.

- (2) A discussion of circumstances surrounding the situation including the need for prompt action, and a description of why the situation could not have been avoided.

The requested change corrects an error that migrated from an early draft of NUREG-0452, Standard Technical Specifications for Westinghouse Pressurized Water Reactors, Rev. 5, to the current Turkey Point Technical Specifications which were issued August 28, 1990. During the startup of Turkey Point Unit 3, FPL discovered the inconsistency of the surveillance requirement

between Turkey Point's new standard Technical Specifications and the latest version of NUREG-0452, Rev. 5.

Florida Power and Light requests issuance of this waiver prior to proceeding to full power operation of Turkey Point Unit 4, which is currently scheduled for October 30, 1991.

(3) A discussion of compensatory actions (if any).

None.

(4) A preliminary evaluation of the safety significance and potential consequences of the proposed request.

The Axial Flux Difference (AFD) is a measure of axial power distribution as measured by the excore power range channels. AFD is sensitive to control bank position, core power level, and burnup. Calorimetric uncertainties below 50% RTP can reduce confidence in the incore/excore calibration. To minimize extrapolation errors it is recommended that the data acquired for AFD calibration purposes be taken at power levels equal to or greater than 75% RTP. Per WCAP-8648-P-A, "Excore Detector Recalibration Using Quarter-Core Flux Maps", rodged power distributions are used to assure that compensation of rodged affects on AFD will be made. Bank insertion and a controlled xenon oscillation are mechanisms used to produce the change in the axial power distribution. To compensate for the burnup dependency, an incore/excore calibration is performed: 1) monthly, if a single point comparison of incore to excore shows that the absolute difference is greater than or equal to 3% AFD, or 2) at least once per quarter.

To perform a controlled xenon oscillation for incore/excore calibration, sufficient time must be available. As shown in WCAP-8648-P-A, eleven hours may be required to obtain an AFD configuration such that sufficient data is sampled. This WCAP also indicates that the initial conditions for the incore/excore calibration procedure should be established such that the AFD Technical Specification limits, less about 1% margin on positive and negative limits, should be available. Sixteen hours is viewed to be adequate time interval to allow data retrieval and avoid potential Technical Specification constraints.

The AFD for Turkey Point Units 3 and 4 are based on Constant Axial Offset Control (CAOC). CAOC involves maintaining the AFD within a tolerance band, $\pm 5\%$, around a burnup-dependent target to minimize the variation of the axial power distribution. This allowed range of AFD is used in the nuclear design reload process to confirm that operation within these limits produce power distributions that meet safety analysis requirements. As stated

earlier, AFD is monitored to assure that the FQ peaking factors are acceptable between incore measurement intervals. Note that the action required by Technical Specification 3.2.2, Heat Flux Hot Channel Factor - FQ, when FQ is exceeded, is to reduce thermal power 1% for every percent that FQ exceeds its limit. For the AFD calibration, the power reduction coupled with limits placed in the allowed AFD during the incore/excore test prevents exceeding the FQ limits.

Just as with Technical Specification Special Test Exceptions 3/4.10, Technical Specification 3/4.2.1 is less restrictive during surveillance testing and excore detector calibrations due to the low probability of accidents occurring during this operation.

Review of Standard Technical Specifications (STS) for Westinghouse Pressurized Water Reactors, NUREG-0452 revisions, Revisions 0 through 4, indicates that an allowance is provided to stay outside the target band for up to 16 hours, when the unit is between 50 and 90% RTP, for incore/excore calibration. An early draft of NUREG-0452 Rev. 5, changed the allowance such that the relaxation can be viewed to be applicable to the Power Range Neutron Flux - High Setpoint and not the 50% RTP level. The Proof and Review Copy of NUREG-0452, Rev. 5, dated July 8, 1983, returned the applicability to the Power Range Neutron Flux - High Setpoint and the 50% RTP level. Turkey Point's Technical Specifications are based upon the draft STS Rev. 5.

The currently approved Technical Specifications for Comanche Peak Unit 1 correctly references this footnote with the applicable limiting condition of operation which discusses Acceptable Operation Limits and cumulative penalty deviation time. This erroneous footnote relationship in the Standard Technical Specifications was discovered while preparing the Comanche Peak Technical Specifications prior to their issuance. The error is also corrected in the January 9, 1991, draft edition of NUREG-1431, Westinghouse Owner's Group Methodically Engineered, Restructured, and Improved Technical Specifications (MERITS). FPL is preparing a request for an amendment to the Turkey Point Technical Specifications to revise Technical Specification 3.2.1.

(5) A discussion which justifies the duration of the request.

This temporary waiver of compliance is requested concurrent with a Florida Power and Light proposed license amendment to support this change. The duration of the waiver of compliance is requested from the date of issuance of this waiver to the date the license amendment is approved by the NRC.

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This waiver shall potentially be exercised for a limited time interval each month, during incore/excore calibration of the Nuclear Instrumentation System (NIS) detectors.

- (6) The basis for the licensee's conclusion that the request does not involve a significant hazards consideration.

Attachment 2 provides the determination that the proposed temporary waiver of compliance does not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; (2) create the probability 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 does not involve a significant hazards determination as defined in 10 CFR 50.92.

- (7) The basis for the conclusion that the request does not involve irreversible environmental consequences.

This temporary waiver of compliance does not result in any physical change to the plant. Issuance of this waiver will not place the plant in a condition that compromises the health and safety of plant personnel or the general public. Due to the administrative nature of this request, issuance of this waiver does not involve irreversible environmental consequences.

ATTACHMENT 2

PROPOSED DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION

PROPOSED DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION

The commission has provided standards for determining whether a significant hazards consideration exists (10 CFR 50.92(c)). A proposed change to an operating license for a facility involves no significant hazards consideration, if operation of the facility in accordance with the proposed change would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create a 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. FPL has determined that operation of the facility in accordance with this temporary waiver of compliance would not:

- (1) involve a significant increase in the probability or consequences of an accident previously evaluated.

This temporary waiver of compliance does not involve a significant increase in the probability or consequences of an accident previously evaluated. The proposed change does not result in any physical change to the facility which could cause an increase in the probability or consequences of any previously evaluated accident. The requested change corrects an error that migrated from a draft version of NUREG 0424, Rev. 5, Standard Technical Specifications for Westinghouse Pressurized Water Reactors, to the current Turkey Point Technical Specifications which were issued on August 28, 1990.

The basis of the AFD Specification is to assure that the plant operates within the bounds of the Reload Design and Safety Analyses. This parameter is used as input to various Condition II, III, and IV events to assure that axial power shapes and power densities will not be generated that violate safety analysis core peaking factors and axial power distribution assumptions. Analyses to support operation within the "Acceptable Operation Limits" is included in the Reload Design and Safety Analyses.

- (2) create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated. The proposed change does not alter any plant operations. Therefore, no possibility

of creating a new or different type of accident would result from this temporary waiver of compliance.

Analyses to support operation within the "Acceptable Operation Limits" is included in the Reload Design and Safety Analyses.

3) **involve a significant reduction in a margin of safety.**

The proposed change does not involve a significant reduction in the margin of safety. The consequences of core accidents are based on limiting the assumptions for the core peaking factors. No changes to the peaking factors are required to support this temporary waiver of compliance. Furthermore, just as with Special Test Exceptions, Technical Specification 3/4.2.1 is less restrictive during excore calibration due to the low probability of accidents occurring during this operation. In addition, excore calibration is a controlled plant evolution with enhanced operator and Reactor Engineering oversight. Thus the consequences of an accident were not increased. Therefore, the proposed change does not involve a reduction in the margin of safety.

Based on the above, FPL has determined that the proposed temporary waiver of compliance does not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; (2) create the probability 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 does not involve a significant hazards determination as defined in 10 CFR 50.92.

