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 FACIL: 50-250 Turkey Point Plant, Unit 3, Florida Power and Light C 05000250
 50-251 Turkey Point Plant, Unit 4, Florida Power and Light C 05000251

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AUTHOR AFFILIATION Florida Power & Light Co.
 RECIPIENT AFFILIATION Document Control Branch (Document Control Desk)

SUBJECT: Provides 10CFR50.46, "Acceptance Criteria for ECCS in Light Water Nuclear Power Reactors" annual rept for Turkey Point Units 3 & 4 since last rept dtd 931029 & returns Turkey Point to annual cycle consistent w/other Westinghouse units.

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FPL

APR 11 1994

L-94-073
10 CFR 50.46

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
10 CFR 50.46, "Acceptance Criteria for
Emergency Core Cooling Systems In Light Water
Nuclear Power Reactors" - Annual Report

10 CFR 50.46 (a)(3)(ii) requires that licensees report to the Commission at least annually the nature of changes to, or errors discovered in, the emergency core cooling system (ECCS) evaluation models, or in the application of such models that affect the peak clad temperature calculation and their effect on the limiting ECCS analysis. This letter provides Florida Power and Light Company's report for Turkey Point Units 3 and 4 since the last report dated October 29, 1993, and returns Turkey Point to an annual cycle consistent with other Westinghouse units.

Should there be any questions, please contact us.

Very truly yours,

T. F. Plunkett
Vice President
Turkey Point Plant

Attachment

TFP/RJT/rjt

cc: S. D. Ebnetter, Regional Administrator, Region II, USNRC
T. P. Johnson, Sr. Resident Inspector, USNRC, Turkey Point
Plant

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ATTACHMENT

Re: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
10 CFR 50.46, "Acceptance Criteria for Emergency Core
Cooling Systems In Light Water Nuclear Power Reactors"
Annual Report

Large Break LOCA (LBLOCA)

By letter L-93-267 dated October 29, 1993, Florida Power and Light Company (FPL) reported a peak clad temperature (PCT) of 2104°F in the event of a worst case large break loss of coolant accident (LBLOCA) transient. This value included a calculated peak temperature of 2082°F plus 22°F increment due to containment purge coincident with a LBLOCA, increased steady-state pressurizer pressure uncertainty band, transition fuel core penalty, implementation of debris resistant fuel assemblies and stainless steel rods in fuel assemblies, steam generator tube collapse during an earthquake, revised grid loss coefficients resulting in an increased core pressure drop and corrections to the WREFLOOD-INTERIM Structural Metal Heat Model in the BART Computer code.

Recent corrections to the VESCAL subroutine of the LUCIFER computer model have resulted in a decrease in the peak clad temperature for the worst case LBLOCA of 6°F for a total PCT of 2098°F. This 6°F benefit is a result of a correction to the mass and geometry calculations of the reactor pressure vessel and steam generator.

The LBLOCA analysis as described in the Updated Final Safety Analysis Report (UFSAR) was performed by Westinghouse in 1991 using the BART computer code with fuel assembly spacer grids.

Small Break LOCA (SBLOCA)

By letter L-93-267, Florida Power and Light Company reported a peak clad temperature of 1703°F in the event of a worst case small break loss of coolant accident (SBLOCA) transient. This value was based upon a new Turkey Point SBLOCA analysis performed by Westinghouse in 1991 using the NOTRUMP digital computer code. This value included a calculated peak clad temperature of 1749°F less a 46°F benefit due to the presence of stainless steel rods in fuel assemblies, corrections to the NOTRUMP Bessel function, corrections due to the effects of safety injection on the broken loop and an improved condensation model, and errors in the drift flux flow regime.

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Small Break LOCA (SBLOCA) - (Continued)

Recent corrections to the VESCAL subroutine of the LUCIFER computer model have resulted in a decrease in the peak clad temperature for the worst case SBLOCA of 16°F for a total PCT of 1687°F. This 16°F benefit is a result of a correction to the mass and geometry calculations of the reactor pressure vessel and steam generator.

Summary

The revised peak clad temperatures of 2098°F for the worst case LBLOCA and 1687°F for the worst case SBLOCA, correcting for the effects discussed herein and summarized in the enclosed Tables 1 and 2, are below the 10 CFR 50.46 acceptance limit of 2200°F.

TABLE 1
TURKEY POINT UNITS 3 AND 4
PREDICTED PEAK CLAD TEMPERATURES
CURRENT LBLOCA EVALUATIONS
THAT HAVE ASSESSED PCT PENALTIES

Analysis of Record 2082°F

Evaluations specified in FPL letter L-93-267

Effect of Containment Purging	9°F
Pressurizer Pressure Uncertainty	8°F
Implementation of Debris Resistant FA	3°F
Transition Core Penalty	10°F
Stainless Steel Rods in Fuel Assemblies	2°F
Steam Generator Tube Collapse During an Earthquake	18°F
Revised Grid Loss Coefficients	-3°F
WREFLOOD Structural Metal Heat Modeling	-25°F

Total LBLOCA PCT specified
in FPL Letter L-93-267 2104°F

Evaluations since issuance of FPL letter L-93-267

Vessel and Steam Generator calculational errors in the LUCIFER model	-6°F
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Total Estimated LBLOCA PCT 2098°F

TABLE 2
TURKEY POINT UNITS 3 AND 4
PREDICTED PEAK CLAD TEMPERATURES
CURRENT SBLOCA EVALUATIONS
THAT HAVE ASSESSED PCT PENALTIES

Analysis of Record 1749°F

Evaluations specified in FPL letter L-93-267

Stainless Steel Rods in Fuel Assemblies	2°F
NOTRUMP Bessel Function Correction	-35°F
Effect of Safety Injection in Broken Loop	150°F
Effect of Improved Condensation Model	-150°F
Drift Flux Flow Regime Errors	-13°F

Total SBLOCA PCT specified in FPL Letter L-93-267 1703°F

Evaluations since issuance of FPL letter L-93-267

Vessel and Steam Generator calculational errors in LUCIFER model	-16°F
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Total Estimated SBLOCA PCT 1687°F