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SUBJECT: Discusses 10CFR50.46, "Acceptance Criteria for ECCS in Light Water Power Reactors."

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**FPL**

DEC 15 1994

L-94-301  
10 CFR 50.46

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

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 Power Reactors"

Gentlemen:

Title 10 CFR 50.46 (a)(3)(ii) requires that licensees report to the Commission each change to or error discovered in an acceptable emergency core cooling system (ECCS) evaluation model, or in the application of such model, that affects the peak clad temperature calculation, and its effect on the limiting ECCS analysis. If the change results in a peak clad temperature (PCT) difference of more than 50°F, the licensee is required to provide the NRC with a report within 30 days and include with the report the actions required to show compliance with 10 CFR 50.46 requirements.

By letter L-94-073, dated April 11, 1994, Florida Power and Light Company (FPL) transmitted to the NRC the annual report of the ECCS analysis for Turkey Point Units 3 and 4. On November 7, 1994, Westinghouse transmitted to FPL the results of a recent reanalysis of the worst case large and small break Loss of Coolant Accident (LOCA) transients for Turkey Point. The Westinghouse letter identified a reduction in the PCT limit of 12°F for the large break LOCA (LBLOCA) analysis and an increase in the PCT limit of 130°F for the small break LOCA (SBLOCA) analysis. For Turkey Point, the LBLOCA analysis remains the limiting ECCS analysis. Since the change in PCT for the limiting LBLOCA analysis is less than 50°F, FPL is not required to make this submittal. However, since the change in the PCT for the small break LOCA results exceeds 50°F, although not required by the regulations, FPL is providing the enclosed response for your information.

In accordance with 10 CFR 50.46 (a)(3)(ii), this transmittal satisfies the annual reporting requirements for FPL Turkey Point Units 3 and 4.

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an FPL Group company

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Should there be any questions, please contact us.

Very truly yours,



T. F. Plunkett  
Vice President  
Turkey Point Plant

TFP/RJT/rt

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

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"

Large Break LOCA (LBLOCA)

By letter L-94-073 dated April 11, 1994, Florida Power and Light Company (FPL) reported a peak clad temperature (PCT) of 2098°F for the worst case LBLOCA transient analysis. This value included a calculated peak temperature of 2082°F plus a 16°F penalty as reported by FPL in letter L-94-073.

The recent discharge of fuel assemblies with stainless steel fuel rods and the transition to a full core of optimized fuel assemblies have resulted in a decrease in the peak clad temperature for the worst case LBLOCA of 12°F for a total PCT of 2086°F.

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

Small Break LOCA (SBLOCA)

By letter L-94-073, FPL reported a peak clad temperature of 1687°F for the worst case SBLOCA transient analysis. 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 plus a 62°F benefit as reported by FPL in letter L-94-073.

The recent discharge of fuel assemblies with stainless steel fuel rods, correction to the Boiling Heat Transfer correlation, Steam Line Isolation Logic, Axial Nodalization, Rod Internal Pressure Model Revision, Burst and Blockage - Time in Life and corrections to SBLOCA computer model have resulted in an increase in the peak clad temperature for the worst case SBLOCA of 130°F for a total PCT of 1817°F.

L-94-3Q1  
Attachment  
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Summary

The revised peak clad temperatures of 2086°F for the worst case LBLOCA and 1817°F for the worst case SBLOCA, correcting for the effects discussed above and summarized in the enclosed Tables 1 and 2, are below the 10 CFR 50.46 acceptance limit of 2200°F. Turkey Point Units 3 and 4 remain in compliance with the Emergency Core Cooling System (ECCS) performance criteria specified in 10 CFR 50.46(b).

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
Total LBLOCA PCT specified in FPL Letter L-94-073	2098°F
<u>Evaluations since issuance of FPL letter L-94-073</u>	
Discharged Fuel Assemblies with Stainless Steel Fuel Rods	-2°F
Eliminate Transition Core Penalty	-10°F
Total Estimated LBLOCA PCT	2086°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
Total SBLOCA PCT specified in FPL Letter L-94-073	1687°F
<u>Evaluations since issuance of FPL letter L-94-073</u>	
Discharged Fuel Assemblies with Stainless Steel	
Fuel Rods	-2°F
Boiling Heat Transfer Correlation Error	-6°F
Steam Line Isolation Logic Error	18°F
Axial Nodalization, Rod Internal Pressure	
Model Revision, and SBLOCTA Error	
Corrections Analysis	105°F
Burst and Blockage/Time in Life	15°F
Total Estimated SBLOCA PCT	1817°F