



February 11, 2013
L-2013-032
10 CFR 50.46

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555-0001

Re: Turkey Point Unit 4
Docket No. 50-251
10 CFR 50.46, "Acceptance Criteria for
Emergency Core Cooling Systems in Light Water
Nuclear Power Reactors" – 30 Day Special Report

References:

1. FPL letter L-2012-204 from Michael Kiley to US Nuclear Regulatory Commission, "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' – 2011 Annual Report," April 30, 2012.
2. FPL letter L-2012-355 from Michael Kiley to US Nuclear Regulatory Commission, "Turkey Point Unit 4, Docket No. 50-251, Nuclear Fuel Pellet Thermal Conductivity Degradation Impact on current Turkey Point Unit 4 Cycle 26 BE LBLOCA Analysis using the 1996 CQD Methodology 10 CFR 50.46 30-Day Special Report," October 3, 2012.
3. FPL letter L-2010-113 from Michael Kiley to US Nuclear Regulatory Commission, "Florida Power & Light Company, Turkey Point Units 3 and 4, Docket Nos. 50-250 and 50-251, License Amendment Request for Extended Power Uprate (LAR 205)," October 21, 2010.
4. FPL letter L-2012-019 from Michael Kiley to US Nuclear Regulatory Commission, "Turkey Point Units 3 and 4, Docket Nos. 50-250 and 50-251, Response to NRC Reactor Systems Branch Request for Additional Information Regarding Extended Power Uprate License Amendment Request No. 205 and Thermal Conductivity Degradation," January 16, 2012.
5. NRC Letter from Jason Paige to Mano Nazar (FPL), "Turkey Point Units 3 and 4 – Issuance of Amendments Regarding Extended Power Uprate (TAC Nos. ME4907 and ME4908)," June 15, 2012.

10 CFR 50.46(a)(3)(ii) requires that changes to the Large Break Loss of Coolant Accident (LBLOCA) Evaluation Model (EM) and Small Break LOCA (SBLOCA) EM peak clad temperature (PCT) exceeding 50°F have to be reported to the NRC within 30 days. This letter meets this requirement.

FPL letter L-2012-204 (Reference 1), submitted the Turkey Point Units 3 and 4 10 CFR 50.46 2011 annual report. The LBLOCA PCT reported was 1998 °F, and the SBLOCA PCT reported was 1689 °F.

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FPL letter L-2012-355 (Reference 2), submitted the Turkey Point Unit 4 10 CFR 50.46 30-day special report documenting the impact of the nuclear fuel pellet thermal conductivity degradation (TCD) on the Cycle 26 BE LBLOCA. Fuel pellet TCD was not explicitly considered in the CQD Methodology used in the Cycle 26 LBLOCA Analysis of Record (AOR). The revised LBLOCA PCT reported in Reference 2 was 1917 °F. The SBLOCA model and AOR were not affected by the nuclear fuel pellet TCD.

By letter L-2010-113 (Reference 3), FPL requested a License Amendment for EPU for Turkey Point Units 3 and 4 (LAR 205). References 3 and 4 documented the SBLOCA and LBLOCA EPU EM PCTs for Turkey Point Units 3 and 4 for the EPU conditions, respectively. The LBLOCA analysis in support of EPU operation explicitly accounts for the effects of TCD (Reference 4). On June 15, 2012, the NRC issued Amendments 249 and 245 (Reference 5) approving the EPU for Turkey Point Units 3 and 4. Turkey Point Unit 4 is implementing the approved EPU during the current Unit 4 Cycle 27 refueling outage. Therefore, the new reference LBLOCA EPU EM PCT is 2152 °F and the new reference SBLOCA EPU EM PCT is 1231°F.

In support of the EPU, Turkey Point Unit 4 started implementing new 15x15 Upgrade fuel assemblies in Cycle 26. Cycle 27 is the last reload with a mix of 15x15 Upgrade fuel assemblies and 15x15 DRFAs. As per Reference 4, Westinghouse identified a mixed core penalty for the Turkey Point Units 3 and 4 LBLOCA PCT of 12°F due to the presence of the new 15x15 Upgrade fuel assemblies and the old 15x15 DRFAs in the same core. The mixed core penalty is applicable only for Unit 4 Cycle 27 and any future cycles during which 15x15 DRFAs and 15x15 Upgrade fuel assemblies are both present in the core. The SBLOCA PCT is not affected by the mixed core effects.

Table 1 below provides a summary of the new LBLOCA and SBLOCA PCTs for the EPU conditions. The LBLOCA PCT for Unit 4 is 2164 °F with a cumulative change of 12°F due to the mixed core penalty. This is a change of 247 °F in PCT from the LBLOCA PCT of 1917 °F reported in Reference 2, the 10 CFR 50.46 30-day special report. The new SBLOCA PCT is 1231°F. This is a change of 458 °F in PCT from the SBLOCA PCT of 1689 °F reported in Reference 1, the 2011 annual report.

Table 1
Turkey Point Unit 4 SBLOCA and BE LBLOCA EPU PCT Summary

	<u>Peak Cladding Temperature</u>	<u>Cumulative Change</u>
<u>LBLOCA</u>		
EPU EM (Ref. 4)	2152 °F	0 °F
Mixed Core Penalty* (Ref. 4)	12 °F	12 °F
Mixed Core EPU PCT	2164 °F	12 °F
	<u>Peak Cladding Temperature</u>	<u>Cumulative Change</u>
<u>SBLOCA</u>		
EPU EM (Ref. 3)	1231 °F	0 °F

* The mixed core penalty is only applicable to mixed cores with 15x15 Upgrade and DRFA fuel.

Should there be any questions, please contact Robert Tomonto, Licensing Manager, at 305-246-7327.

Very truly yours,



Michael Kiley
Vice President
Turkey Point Nuclear Plant

cc: Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, Turkey Point Plant