



April 29, 2013
L-2013-108
10 CFR 50.46

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

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" – 2012 Annual Report

References:

1. Letter from Michael Kiley to US NRC Document Control Desk, "Turkey Point Unit 3, Dockets No. 50-250, 10 CFR 50.46, Acceptance Criteria for Emergency Core Cooling Systems in Light Water Nuclear Power Reactors – 30 Day Special Report," L-2012-263, July 3, 2012.
2. Letter from Michael Kiley to US NRC Document Control Desk, "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," L-2012-355, October 3, 2012.
3. Letter from Michael Kiley to US NRC Document Control Desk, "Turkey Point Units 3 & 4, Dockets 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," L-2012-204, April 30, 2012.
4. Letter from Michael Kiley to US NRC Document Control Desk, "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," L-2013-032, February 11, 2013.

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 (EM), or in the application of such models that affect the peak clad temperature calculation and their effect on the limiting ECCS analysis. Attachments 1 and 2 to this letter provide the Florida Power and Light Company (FPL) 10 CFR 50.46 Peak Cladding Temperature (PCT) 2012 reports for Turkey Point Units 3 and 4, respectively.

Reference 1 reported the implementation of revised approved EMs for the Turkey Point Unit 3 Large Break LOCA (LBLOCA) and Small Break LOCA (SBLOCA) in support of an Extended Power Uprate (EPU). Attachment 1 reports the 2012 changes to, or errors discovered in the revised approved EMs for Turkey Point Unit 3 not previously reported in Reference 1.

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Reference 2 reported all the changes to, or errors discovered in the current approved Large Break LOCA (LBLOCA) EM for Turkey Point Unit 4, including the impact of Thermal Conductivity Degradation (TCD) on PCT. Attachment 2 reports the changes and errors for 2012 in the LBLOCA evaluation model for Turkey Point Unit 4 not previously reported in Reference 2.

Reference 3 reported the changes and errors for 2011 in the SBLOCA EM for Turkey Point Unit 4. Attachment 2 reports the 2012 changes and errors in the SBLOCA evaluation model for Turkey Point Unit 4 not previously reported in Reference 3.

Based on Attachment 1, the 2012 Turkey Point Unit 3 EPU LBLOCA and SBLOCA PCTs are 2164 °F and 1231 °F, respectively. The cumulative changes are 12 °F and 0 °F, respectively.

Based on Attachment 2, the 2012 Turkey Point Unit 4 pre-EPU LBLOCA and SBLOCA PCTs are 1917 °F and 1689 °F, respectively. The cumulative changes are 811 °F and 105 °F, respectively. The Unit completed its last cycle (Cycle 26) at pre-EPU conditions in 2012 and has started Cycle 27 at EPU conditions in April 2013.

10 CFR 50.46(a)(3)(ii) also requires that a schedule for reanalysis be provided or compliance with the requirements of the regulation be shown if the error is significant. For Unit 4 compliance with 10 CFR 50.46 requirements is demonstrated by total estimated LBLOCA and SBLOCA PCTs of 1917 °F and 1689 °F, respectively, both remaining below the limit of 2200 °F. However, revised approved EMs for the Turkey Point Units 3 and 4 LBLOCA and SBLOCA in support of an EPU have already been implemented (References 1 and 4).

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

**ATTACHMENT 1
TURKEY POINT UNIT 3
2012 ANNUAL SUMMARY**

EPU SBLOCA AND LBLOCA PCT RACK-UPS

	<u>Peak Cladding Temperature</u>	<u>Cumulative Change</u>
<u>SBLOCA</u>		
EPU New Evaluation Model ^(A1)	1231 °F	0 °F
<u>Evaluations</u> ^(A1)		
- Thermal Conductivity Degradation	0 °F	0 °F
<u>Plant Modifications</u> ^(A1)		
- Increased Maximum Containment Spray Flow	0 °F	0 °F
2012 10 CFR 50.46 Annual Report	1231 °F	0 °F

	<u>Peak Cladding Temperature</u>	<u>Cumulative Change</u>
<u>LBLOCA</u>		
EPU New Evaluation Model ^(A1)	2152 °F	0 °F
<u>Evaluations & Assessments</u> ^(A1)		
- HOTSPOT Burst Temperature Zirlo Cladding	0 °F	0 °F
- HOTSPOT Calculation of Initial Pellet Temperature	0 °F	0 °F
- WCOBRA/TRAC Automated Restart Logic Error	0 °F	0 °F
- Rod Internal Pressure Calculation	0 °F	0 °F
<u>Plant Modifications</u> ^(A1)		
- Final EPU Containment Heat Sinks Evaluation	0 °F	0 °F
- Increased Maximum Containment Spray Flow	0 °F	0 °F
<u>Mixed Core Penalty</u> ^(A1, A2)	12 °F	12 °F
2012 10 CFR 50.46 Annual Report	2164 °F	12 °F

REFERENCES

- A1. Letter from R. Kerr to R. Klein, "Turkey Point Units 3 & 4 - 10 CFR 50.46 Report 2012," NF-FP-13-44, March 5, 2013.
- A2. Letter from M. Kiley to US NRC Document Control Desk, "Turkey Point Units 3 & 4, Dockets Nos. 50-250 and 50-251, 10 CFR 50.46, 'Acceptance Criteria for Emergency Core Cooling Systems in Light Water Nuclear Power Reactors' – 30 Day Special Report," L-2010-231, October 19, 2010.

**ATTACHMENT 2
TURKEY POINT UNIT 4
2012 ANNUAL SUMMARY**

PRE-EPU SBLOCA AND LBLOCA PCT RACK-UPS

	<u>Peak Cladding Temperature</u>	<u>Cumulative Change</u>
<u>SBLOCA</u>		
2011 10 CFR 50.46 Annual Report ^(A1)	1689 °F	105 °F
<u>Evaluations</u> ^(A2)		
- Thermal Conductivity Degradation	0 °F	0 °F
 2012 10 CFR 50.46 Annual Report	 1689 °F	 105 °F

	<u>Peak Cladding Temperature</u>	<u>Cumulative Change</u>
<u>LBLOCA</u>		
2012 TCD Impact Update ^(A3)	1917 °F	811 °F
<u>Evaluations & Assessments</u> ^(A2)		
- HOTSPOT Burst Temperature Zirlo Cladding	0 °F	0 °F
- HOTSPOT Calculation of Initial Pellet Temperature	0 °F	0 °F
- WCOBRA/TRAC Automated Restart Logic Error	0 °F	0 °F
- Rod Internal Pressure Calculation	0 °F	0 °F
 2012 10 CFR 50.46 Annual Report	 1917 °F	 811 °F

REFERENCES

- A1. Letter from M. Kiley to the U.S. 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," L-2012-204, April 30, 2012.
- A2. Letter from R. Kerr to R. Klein, "Turkey Point Units 3 & 4 - 10 CFR 50.46 Report 2012," NF-FP-13-44, March 5, 2013.
- A3. Letter from M. Kiley to the U.S. 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," L-2012-355, October 3, 2012.