



L-2010-192
10 CFR 52.3

August 30, 2010

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

Re: Florida Power & Light Company
Proposed Turkey Point Units 6 and 7
Docket Nos. 52-040 and 52-041
Response to Request for Additional Information Letter No. 001 (eRAI 4759)
Standard Review Plan Section 03.03.01 - Wind Loading Review

References:

1. NRC Letter to FPL dated July 29, 2010, Request for Additional Information Letter No. 001 Related to SRP Section 03.03.01 - Wind Loading for the Turkey Point Nuclear Plant Units 6 and 7 Combined License Application (ML102100598)

Florida Power and Light Company (FPL) provides, as an attachment to this letter, its response to the Nuclear Regulatory Commission's (NRC) request for additional information provided in the referenced letter. The attachment identifies changes that will be made in a future revision of the Turkey Point Units 6 and 7 Combined License application (if applicable).

If you have any questions, or need additional information, please contact me at 561-691-7490.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on August 30, 2010

Sincerely,

A handwritten signature in black ink, appearing to read 'William Maher', is written over a horizontal line.

William Maher
Senior Licensing Director – New Nuclear Projects

Attachment: FPL Response to Question No. 03.03.01-1 (eRAI 4759)

cc:
PTN 6 & 7 Project Manager, AP1000 Projects Branch 1, USNRC DNRL/NRO
Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, Turkey Point Plant 3 & 4

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NRO

Proposed Turkey Point Units 6 and 7
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NRC RAI Letter No.: PTN-RAI-LTR-001

SRP Section: NUREG-0800 Section 3.3.3 – Wind and Tornado Loadings

Question from Structural Engineering Branch 1 (AP1000/EPR Projects) (SEB1)

Question Number: 03.03.01-1 (eRAI 4759)

Per 10 CFR Part 50, GDC2; safety-related structures shall reflect: (1) Appropriate consideration of the most severe of the natural phenomena that have been historically reported for the site and surrounding area, with sufficient margin for the limited accuracy, quantity, and period of time in which the historical data have been accumulated, (2) appropriate combinations of the effects of normal and accident conditions with the effects of the natural phenomena and (3) the importance of the safety functions to be performed.

The second paragraph in FSAR section 3.3.3 states that the site wind velocity characteristics exceed the design wind velocity values given in DCD Subsection 3.3.1.1 for the AP1000 plant. It also states that the higher wind velocity will not have an adverse impact on safety-related structures and components.

1 - Provide a technical justification, which could include, but not be limited to, an engineering evaluation, with structural calculations or analyses performed, to support the statement above that the higher wind velocity will not have an adverse impact on safety-related structures and components.

2 - Explain how the safety-related structures of Turkey Point Units 6 and 7 comply with GDC 2 which requires appropriate consideration of the most severe natural phenomena historically reported, with sufficient margin. This explanation should include, and not be limited to, a comprehensive engineering evaluation of the strongest winds over the safety related structures and whether these structures will remain functional, as required by GDC 2.

FPL RESPONSE

1- The Turkey Point site characteristic for the operating basis wind speed is 150 mph (130 knots) 50-year return, 3-second gust. This exceeds the value of 145 mph (126 knots) in the Design Control Document. An analysis was performed considering this increase in wind speed against the site characteristic. The analysis determined that the increase in wind speed has no impact on the safety-related structures design.

2 - Based on the guidance provided in SRP Section 3.3.1 and 10 CFR 50, Appendix A, FPL has identified 167 mph (145 knots), 1-minute sustained wind speed as the historical maximum reported wind speed for the Turkey Point Units 6 & 7 site. The highest reported wind speed associated with any individual storm event was associated with Hurricane Andrew in 1992. The maximum wind speed for this storm was reported as 167 mph (145 knots), 1-minute sustained at its Atlantic Coast landfall (Reference 1). FPL acknowledges that this value exceeds the design basis wind speeds for the 50 and 100-year, 3-second gust, recurrence intervals as determined in accordance with the acceptance criteria provided in SRP Sections 2.3.1 and 2.3.2.

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However, the AP1000 safety-related structures are designed to meet the various load combinations that include wind, hurricane, and tornado. In particular, the design of the AP1000 structures envelopes the requirements of 10 CFR Part 50, GDC 2. Hurricanes and tornados have the same load factors; therefore, the AP1000 tornado design wind speed controls the design. The AP1000 Nuclear Island and Seismic Category II structures are designed for a maximum reported wind speed of 300 mph. The historical maximum reported wind speed of 167 mph (145 knots), 1-minute sustained does not exceed the design wind speed of 300 mph providing sufficient margin for the structures protecting safety-related features.

The Turkey Point site characteristic for the operating basis wind speed is 150 mph (130 knots) 50-year return, 3-second gust. The 150 mph (130 knots) wind speed is a departure from the 145 mph (126 knots) in the Design Control Document. An evaluation determined there was no impact to safety related structures. The 150 mph (130 knots) 50-year return, 3-second gust wind speed was selected as the operating basis wind speed for the Turkey Point Units 6 & 7 site based on the methodology used to determine the site characteristic 'basic' wind speed as defined in Rev 17 of the AP1000 DCD and as provided in ASCE 7-05, "Minimum Design Loads for Building and Other Structures." The use of ASCE 7-05 guidance is consistent with the basis and intent of the DCD and provides site-specific estimates of the 3-second wind speed for the 50 and 100-year recurrence intervals.

FPL believes that the method of determining the operating basis wind speed is consistent with the statistical methodology described in the AP1000 DCD and representative of long-term site conditions. Given that the DCD statistical methodology provides site-specific wind speed gust information that is based on long-term historical data, this methodology is the most appropriate for use in determining the design basis wind speed for the Turkey Point Units 6 & 7 site.

Reference:

1. Landsea, C.W., J. L. Franklin, C. J. McAdie, J. L. Beven II, J. M. Gross, B.R. Jarvinen, R. J. Pasch, E. N. Rappaport, J. P. Dunion, and P. P. Dodge, 2004: A Reanalysis of Hurricane Andrew's Intensity, Bull. Amer. Meteor. Soc. Vol. 85, No. 11, pp. 1699–1712.

This response is PLANT SPECIFIC.

ASSOCIATED COLA REVISIONS

No COLA changes have been identified as a result of this response.