



Serial: NPD-NRC-2009-164  
July 22, 2009

10 CFR 52.79

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

**LEVY NUCLEAR PLANT, UNITS 1 AND 2  
DOCKET NOS. 52-029 AND 52-030  
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 059 RELATED TO  
REGIONAL CLIMATOLOGY**

Reference: Letter from Brian C. Anderson (NRC) to Garry Miller (PEF), dated June 24, 2009,  
"Request for Additional Information Letter No. 059 Related to SRP Section 02.03.01  
for the Levy Nuclear Plant Units 1 and 2 Combined License Application"

Ladies and Gentlemen:

Progress Energy Florida, Inc. (PEF) hereby submits our response to the Nuclear Regulatory Commission's (NRC) request for additional information provided in the referenced letter.

A response to the NRC request is addressed in the enclosure. The enclosure also identifies changes that will be made in a future revision of the Levy Nuclear Plant Units 1 and 2 application.

If you have any further questions, or need additional information, please contact Bob Kitchen at (919) 546-6992, or me at (919) 546-6107.

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

Executed on July 22, 2009.

Sincerely,

A handwritten signature in black ink, appearing to read 'Garry D. Miller', written over a horizontal line.

Garry D. Miller  
General Manager  
Nuclear Plant Development

Enclosure

cc: U.S. NRC Region II, Regional Administrator  
Mr. Brian Anderson, U.S. NRC Project Manager

*DO94  
NRC*

**Levy Nuclear Plant Units 1 and 2  
Response to NRC Request for Additional Information Letter No. 059 Related to  
SRP Section 2.3.1 for the Combined License Application, dated June 24, 2009**

<u>NRC RAI #</u>	<u>Progress Energy RAI #</u>	<u>Progress Energy Response</u>
02.03.01-12	L-0512	Response enclosed – see following pages
02.03.01-13	L-0513	Response enclosed – see following pages
02.03.01-14	L-0514	Response enclosed – see following pages
02.03.01-15	L-0515	Response enclosed – see following pages
02.03.01-16	L-0516	Response enclosed – see following pages

**NRC Letter No.:** LNP-RAI-LTR-059

**NRC Letter Date:** June 24, 2009

**NRC Review of Final Safety Analysis Report**

**NRC RAI NUMBER:** 02.03.01-12

**Text of NRC RAI:**

This RAI is in regards to the last two paragraphs in FSAR Section 2.3.1.2.2.

The term "sustained wind speeds" is used to describe the peak observed wind speeds. The National Weather Service defines the term sustained wind as, "Wind speed determined by averaging observed values over a two-minute period." FSAR Table 2.3.1-202 lists these values as Fastest Mile/Peak Gust Speed (mph), with a footnote explaining that these are the higher or either a 3-second or 5-second gust.

Please explain this apparent discrepancy in using the term "sustained wind speeds" to describe the peak observed wind speeds and make any necessary changes to FSAR Section 2.3.1.2.2.

**PGN RAI ID #:** L-0513

**PGN Response to NRC RAI:**

In FSAR Subsection 2.3.1.2.2, the term "sustained wind speeds" was used incorrectly and should read "maximum observed wind speeds" for the region.

FSAR Subsection 2.3.1.2.2 will be revised to refer to "maximum observed wind speeds" in a future revision of the FSAR.

**References:**

None

**Associated LNP COL Application Revisions:**

The text in the second to the last paragraph of FSAR Subsection 2.3.1.2.2, "Tornadoes and Severe Winds," will be changed from:

Peak observed wind speeds at the Gainesville, Jacksonville, Orlando, Tallahassee, and Tampa stations were previously identified in Table 2.3.1-202. As indicated in the table, the peak observed wind speeds at the stations were 103 km/h (64 mph), 124 km/h (77 mph), 169 km/h (105 mph), 134 km/h (83 mph), and 98 km/h (61 mph), respectively. An importance factor of 1.15 is applied to this wind speed in the design of safety-related structures (Reference 2.3-216). Therefore, the maximum sustained wind speeds for the design-basis tornado would be 119 km/h (74 mph), 143 km/h (89 mph), 195 km/h (121 mph), 153 km/h (95 mph), and 113 km/h (70 mph) for Gainesville, Jacksonville, Orlando, Tallahassee, and Tampa, respectively.

**To Read:**

Peak observed wind speeds at the Gainesville, Jacksonville, Orlando, Tallahassee, and Tampa stations were previously identified in Table 2.3.1-202. As indicated in the table, the peak observed wind speeds at the stations were 103 km/h (64 mph), 124 km/h (77 mph), 169 km/h (105 mph), 134 km/h (83 mph), and 98 km/h (61 mph), respectively. An importance factor of 1.15 is applied to this wind speed in the design of safety-related structures (Reference 2.3-216). Therefore, the maximum observed wind speeds for the design-basis tornado would be 119 km/h (74 mph), 143 km/h (89 mph), 195 km/h (121 mph), 153 km/h (95 mph), and 113 km/h (70 mph) for Gainesville, Jacksonville, Orlando, Tallahassee, and Tampa, respectively.

**Attachments/Enclosures:**

None

**NRC Letter No.:** LNP-RAI-LTR-059

**NRC Letter Date:** June 24, 2009

**NRC Review of Final Safety Analysis Report**

**NRC RAI NUMBER:** 02.03.01-13

**Text of NRC RAI:**

Address, in FSAR Section 2.3.1, the extreme frozen winter precipitation event and extreme liquid winter precipitation event as site characteristics in accordance with the Interim Staff Guidance (ISG) DC/COLISG-07, "Interim Staff Guidance on Assessment of Normal and Extreme Winter Precipitation Loads on the Roofs of Seismic Category I Structures" (ML081990438) and provide a discussion for the site characteristic values chosen, or explain why such an analysis is not necessary.

**PGN RAI ID #:** L-0513

**PGN Response to NRC RAI:**

Progress Energy (PE) agrees with the methodology presented in Interim Staff Guidance (ISG) DC/COL ISG-07, "Interim Staff Guidance on Assessment of Normal and Extreme Winter Precipitation Loads on the Roofs of Seismic Category I Structures." The document provides guidance for determining the normal and extreme winter precipitation events and the resulting normal and extreme winter precipitation roof loads (Reference RAI 02.03.01 13 01).

FSAR Subsection 2.3.1.2.3, "Heavy Snow and Severe Glaze Storms," states that "The record snowfall in the region was at Jacksonville, where 3.81 cm (1.5 in.) of snow fell in February of 1958. The 50-year recurrent Ground Snow Load for the Gainesville, Jacksonville, Orlando, Tallahassee, and Tampa stations is reported by the EWD data as zero (Reference 2.3-217). Therefore, estimations of the weight of 100-year return period snowpack and probable maximum winter precipitation are not necessary for the LNP site." The record snowfall of 3.81 cm (1.5 in.) in combination with a zero 50-year recurrent Ground Snow Load suggests that the determination of normal and extreme winter precipitation events and the resulting normal and extreme winter precipitation roof loads is not warranted for the LNP site because those values are essentially insignificant when compared with design values for the AP1000.

The FSAR will be revised to include a discussion of ISG-07.

**References:**

RAI 02.03.01-13 01, U.S. Nuclear Regulatory Commission, "Interim Staff Guidance on Assessment of Normal and Extreme Winter Precipitation Loads on the Roofs of Seismic Category I Structures," DC/COL ISG-07, NRC

**Associated LNP COL Application Revisions:**

The second paragraph of FSAR Subsection 2.3.1.2.3, "Heavy Snow and Severe Glaze Storms" will be revised from:

Trace amounts of snowfall do occur in Florida, but measurable snowfalls are extremely rare (typically less than a quarter of an inch) and occur only a few times in most locations in Florida, as indicated in Table 2.3.1-202. The record snowfall in the region was at Jacksonville, where 3.81 cm (1.5 in.) of snow fell in February of 1958. The 50-year recurrent Ground Snow Load for the Gainesville, Jacksonville, Orlando, Tallahassee, and Tampa stations is reported by the EWD data as zero (Reference 2.3-217). Therefore, estimations of the weight of 100-year return period snowpack and probable maximum winter precipitation are not necessary for the LNP site.

to:

Trace amounts of snowfall do occur in Florida, but measurable snowfalls are extremely rare (typically less than a quarter of an inch) and occur only a few times in most locations in Florida, as indicated in Table 2.3.1-202. The record snowfall in the region was at Jacksonville, where 3.81 cm (1.5 in.) of snow fell in February of 1958. The 50-year recurrent Ground Snow Load for the Gainesville, Jacksonville, Orlando, Tallahassee, and Tampa stations is reported by the EWD data as zero (Reference 2.3-217).

The following paragraph will be inserted at the end of FSAR Subsection 2.3.1.2.3:

Subsection C.1.2.3.1.2 of NRC Regulatory Guide 1.206 and Interim Staff Guidance (ISG) DC/COL ISG-07, "Interim Staff Guidance on Assessment of Normal and Extreme Winter Precipitation Loads on the Roofs of Seismic Category I Structures" suggests that applicants identify winter precipitation events as site characteristics and site parameters for determining normal and extreme winter precipitation loads on roofs of Seismic Category I structures. Based on the historical record snowfall for the region and the estimated 50-year recurrent Ground Snow Loads (which are essentially zero), the estimations of normal and extreme winter precipitation events and the resulting normal and extreme winter precipitation roof loads are not necessary for the LNP site since they are not considered to be significant.

**Attachments/Enclosures:**

None

**NRC Letter No.:** LNP-RAI-LTR-059

**NRC Letter Date:** June 24, 2009

**NRC Review of Final Safety Analysis Report**

**NRC RAI NUMBER:** 02.03.01-14

**Text of NRC RAI:**

FSAR Table 2.3.1-202 (Sheet 2 of 3) labels a parameter as both fastest mile and peak gust. The fastest mile wind speed is defined as the fastest speed, in miles per hour, of any "mile" of wind. The peak gust is defined as the highest "instantaneous" wind speed recorded at a station during a specified period.

The fastest mile wind speed is generally slower than the peak wind gust and can be converted by using the Durst Curve in Figure C6-4 of ASCE/SEI 5-07.

Please clarify which of these wind speeds is being used in FSAR Table 2.3.1-202 and make any necessary changes to the FSAR.

**PGN RAI ID #:** L-0514

**PGN Response to NRC RAI:**

The parameter provided in FSAR Table 2.3.1-202 is the "peak gust" wind speed, reported as the higher value of the peak gust, 3-second gust, or 5-second gust wind speeds as provided in the referenced material.

FSAR Table 2.3.1-202 will be revised to provide clarification of the peak gust wind speed parameter in a future revision of the FSAR.

**References:**

None

**Associated LNP COL Application Revisions:**

The text in FSAR Table 2.3.1-202 (Sheet 2 of 3) will be revised from:

Fastest mile/Peak gust Speed (mph)

to:

Peak Gust Speed (mph)

This same revision will be made to ER Table 2.7-2 (Sheet 2 of 3) in a future revision of the ER.

In ER Subsection 2.7.1.1, the third sentence of the first paragraph will be revised from:

The highest recorded fastest mile/peak gust of wind was 103 km/h (64 mph [September of 2004]), 124 km/h (77 mph [July of 1998]), 169 km/h (105 mph [August of 2004]), 134 km/h (83 mph [September of 1993]), and 98 km/h (61 mph [June of 1988]) for the Gainesville, Jacksonville, Orlando, Tallahassee, and Tampa meteorological observation stations, respectively (Reference 2.7-002).

to:

The highest recorded peak gust of wind was 103 km/h (64 mph [September of 2004]), 124 km/h (77 mph [July of 1998]), 169 km/h (105 mph [August of 2004]), 134 km/h (83 mph [September of 1993]), and 98 km/h (61 mph [June of 1988]) for the Gainesville, Jacksonville, Orlando, Tallahassee, and Tampa meteorological observation stations, respectively (Reference 2.7-002).

**Attachments/Enclosures:**

None



**NRC Letter No.:** LNP-RAI-LTR-059

**NRC Letter Date:** June 24, 2009

**NRC Review of Final Safety Analysis Report**

**NRC RAI NUMBER:** 02.03.01-15

**Text of NRC RAI:**

Please correct the typo in FSAR Table 2.3.1-207 provided in response to NRC RAI 02.03.01-9 (March 4, 2009). The 30-day average wet bulb temperature for Tallahassee currently reads 248 degrees Celsius.

**PGN RAI ID #:** L-0515

**PGN Response to NRC RAI:**

The value provided for the 30-day average wet bulb temperature for Tallahassee in the proposed change to FSAR Table 2.3.1-207 provided in response to NRC RAI 02.03.01-9 (March 4, 2009) should read 24.8 degrees Celsius.

**References:**

None

**Associated LNP COL Application Revisions:**

The following revision will be made to the change proposed for FSAR Table 2.3.1-207 in response to NRC RAI 02.03.01-9 (dated March 4, 2009).

The 30-day average wet bulb temperature for Tallahassee will be revised from:

“248”

to:

“24.8”

**Attachments/Enclosures:**

None

**NRC Letter No.:** LNP-RAI-LTR-059

**NRC Letter Date:** June 24, 2009

**NRC Review of Final Safety Analysis Report**

**NRC RAI NUMBER:** 02.03.01-16

**Text of NRC RAI:**

SRP 2.3.1 Acceptance Criteria #2 states, in part, the applicability of severe weather phenomena data to represent site conditions during the expected period of reactor operation should be substantiated. SRP 2.3.1 Review Procedure #3 states, in part, that current literature on possible changes in the weather in the site region should be reviewed to be confident that the methods used to predict weather extremes are reasonable.

Please include in FSAR Section 2.3.1.3, "Effects of Global Climate Change on Regional Climatology", a brief discussion on the potential effects of global climate change on the future regional conditions near the site or explain why such a discussion is not necessary. Include in any such discussion any proposed site characteristics that may be altered or affected due to the potential of climate change.

**PGN RAI ID #:** L-0516

**PGN Response to NRC RAI:**

Progress Energy believes that this issue has already been addressed in FSAR Subsection 2.3.1.3. The following text is provided in FSAR Subsection 2.3.1.3:

"Global trends in various meteorological and geophysical parameters are currently the subject of much discussion in both the scientific community and in the media. While it may be evident (and expected) that changes in the averages of certain meteorological parameters are occurring over time (i.e., such as temperature and precipitation), it is also evident and generally acknowledged that the prediction of any such changes are difficult if not impossible to reliably predict. Even the most reliable climate change models are not capable of accurately predicting design basis extremes in weather patterns. A discussion of public concerns or speculations about climate change would not add to the resolution of these issues, nor would a discussion of changes in average global trends, because these data cannot be reviewed on a site-specific basis with any degree of accuracy or reliability. It is relatively easy to demonstrate that an increase in the average value of temperature (or precipitation) at a given location is much more likely to be a result of numerous increases in temperatures (or precipitation) in the "normal range" rather than increases in extreme values, because a change in a select number of extreme values will essentially have no measurable effect on longer term average values. Therefore, the information presented in this subsection of the FSAR is focused on the extreme meteorological conditions that will facilitate a plant design that will operate within these safety margins throughout the projected plant life of 40 to 60 years. This is accomplished by identifying historical extremes and projecting, in a scientifically defensible manner, the potential effects weather will have on the safety and operation of the LNP."

**References:**

None

**Associated LNP COL Application Revisions:**

None

**Attachments/Enclosures:**

None