PMLevyCOLPEm Resource

From: Anderson, Brian
Sent: Monday, October 18, 2010 9:02 AM
To: 'robert.kitchen@pgnmail.com'; 'david.waters@pgnmail.com'; 'tillie.wilkins@pgnmail.com'; Pilo, Tony
Cc: PMLevyCOLPEm Resource
Subject: DRAFT RAIs - SRP sections 2.3.1 and 2.3.4 - Levy County Units 1 and 2 Combined License Application
Attachments: LNP Draft RAI 5145 - 2.3.1.doc; LNP Draft RAI 5146 - 2.3.4.doc

Importance: High

Attached are three draft RAIs related to SRP sections 2.3.1 and 2.3.4 for the Levy County Units 1 and 2 Combined License Application. Please let me know if you would like to schedule a conference call to discuss these RAIs.

Thank you,
Brian

Brian Anderson
301-415-9967
Senior Project Manager, AP1000 Projects Branch 1
Office of New Reactors
U.S. Nuclear Regulatory Commission

Hearing Identifier: Levy_County_COL_Public
Email Number: 693

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Recipients:
"PMLevyCOLPEm Resource" <PMLevyCOLPEm.Resource@nrc.gov>
Tracking Status: None
"'robert.kitchen@pgnmail.com'" <robert.kitchen@pgnmail.com>
Tracking Status: None
"'david.waters@pgnmail.com'" <david.waters@pgnmail.com>
Tracking Status: None
"'tillie.wilkins@pgnmail.com'" <tillie.wilkins@pgnmail.com>
Tracking Status: None
"Pilo, Tony" <tony.pilo@pgnmail.com>
Tracking Status: None

Post Office: HQCLSTR01.nrc.gov

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Request for Additional Information No. 5145
Levy County, Units 1 and 2
Progress Energy Florida, Inc.
Docket No. 52-029 and 52-030
SRP Section: 02.03.01 - Regional Climatology
Application Section: Regional Climatology

QUESTIONS for Siting and Accident Conseq Branch (RSAC)

02.03.01-***

The staff has indentified apparent inconsistencies in FSAR Section 2.3.1.2.2, "Tornadoes and Severe Winds." Please clarify the following and make any necessary changes to the FSAR:

- The second to last paragraph in FSAR Section 2.3.1.2.2, Revision 1, states that "[a]n importance factor of 1.15 is applied to this wind speed in the design of safety related functions." The staff finds two errors with this statement:

  1. The design (operating basis) wind speed for the AP1000 standard plant is 145 mph, as indicated in the AP1000 DCD Tier 2, Section 3.3.1.1, not the site characteristic wind speeds listed in FSAR Section 2.3.1.2.2.

  2. The importance factor of 1.15 is applied to the velocity pressure, not the wind speed. An importance factor of 1.15 correlates to a wind speed conversion factor of 1.07.

- The following sentence in the paragraph states, "Therefore, the maximum sustained winds 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." The staff finds two errors with this statement:

  1. The values listed are not "maximum sustained winds" (2-min average), but are instead 3-second gust speeds.

  2. These wind speeds are not design-basis tornado wind speeds. The design-basis tornado wind speed for the AP1000 standard plant is 300 mph as indicated in AP1000 DCD Tier 2, Section 3.3.2.1.

02.03.01-***

Supplemental response to RAI 2.3.1-8 provided update information on operating basis wind speeds. There appear to be inconsistencies within the response and the context of FSAR Section 2.3.1.2.2, "Tornadoes and Severe Winds." Please clarify the following:

- The first sentence in the second to last paragraph in FSAR Section 2.3.1.2.2 states that "a site characteristic 3-second gust wind speed that represents a 100-year return period for the LNP site has been established at 224 km/h (139 mph)." According to the supplemental response to RAI 2.3.1-8, this sentence is not going to be updated in the next revision of the FSAR. The current sentence in the FSAR conflicts with the RAI response that states that the operating basis (3-second gust 100-year) wind speed site characteristic value in FSAR Table 2.0-201 will be changed to 128 mph.

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- The supplemental response to RAI 2.3.1-8 stated that the FSAR text would be changed to read, “The maximum published 3-second gust wind speed based on tornado events and severe winds for these stations is 209 km/h (130 mph) (Orlando and Tampa) and is represented as the 50-year return 3-second gust at 10 m (33 ft) above the ground.

    1. The maximum published 3-second gust wind speed is not based on tornado wind speeds.

    2. The proposed change of the 3-second gust wind speed site characteristic to 130 mph appears to conflict with following proposed paragraph (in the RAI response) that states that the 50-year return period wind speed will be 120 mph.

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Request for Additional Information No. 5146
Levy County, Units 1 and 2
Progress Energy Florida, Inc.
Docket No. 52-029 and 52-030
SRP Section: 02.03.04 - Short Term Atmospheric Dispersion Estimates for Accident Releases
Application Section: Short Term Atmospheric Dispersion Estimates for Accident Releases

QUESTIONS for Siting and Accident Conseq Branch (RSAC)

02.03.04-***

FSAR Table 2.3.2-207 shows that there were 2303 hours of calm data recorded during G stability for the period February 2007 through January 2009. Given that FSAR Table 2.3.2-208 shows a total of 17,301 (14,078 non-calm and 3223 calm) hours of data were recorded during this same period, this means that 13.3 percent of the data recorded during this two-year period were calm conditions during G stability. RG 1.145 states that if the wind instrumentation conforms to RG 1.23, calms should be assigned a wind speed equal to the vane or anemometer starting speed, whichever is higher. FSAR Table 2.3.3-202 shows that the LNP wind speed and wind direction sensors meet the RG 1.23 starting thresholds of less than 0.45 m/s.

FSAR Section 2.3.4 states that the wind speed categories used as input to PAVAN are the same as recommended in RG 1.23, Revision 1, with the exception that the first two non-calm categories (i.e., less than or equal to 0.5 and 0.5 – 1.0 m/s) were combined and assigned to a category of 1.0 – 1.05 m/s. This means all wind speeds below the manufacturer's stated instrument threshold wind speed were assigned a wind speed of 1.0 m/s, instead of 0.45 m/s as suggested in RG 1.145.

The applicant should justify this deviation from the guidance provided in RG 1.145.

02.03.04-***

It appears to the staff that FSAR Table 2.0-201 was not updated in Revision 1 of the FSAR to include the updated EAB and LPZ χ/Q values. As a result the EAB and LPZ X/Q site characteristic values listed in FSAR Table 2.3.4-201 differ from those listed in FSAR Table 2.0-201.

Please update FSAR Table 2.0-201 to include the revised site characteristic EAB and LPZ χ/Q values.

02.03.04-***

The staff was unable to confirm the 50% χ/Q values presented in FSAR Table 2.3.4-205 for the 0-2 hour EAB, 0-2 hour LPZ, and Annual Average LPZ values. The staff reviewed the PAVAN output provided by the applicant and was unable to confirm the applicant's results.

Please provide an explanation as to how the values in FSAR Table 2.3.4-205 were calculated.

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