

## PSEGSPeRAIPEm Resource

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**From:** Chowdhury, Prosanta  
**Sent:** Thursday, April 14, 2011 9:05 AM  
**To:** 'PSEGRAIResponses@pseg.com'  
**Cc:** PSEGSPeRAIPEm Resource; 'David.Lewis2@pseg.com'; 'James.Mallon@pseg.com'; 'David.Robillard@pseg.com'; Colaccino, Joseph; Silvia, Andrea; Clark, Phyllis; McLellan, Judith; Quinlan, Kevin; Harvey, Brad; Brown, David; Schaaf, Robert  
**Subject:** PSEG Site ESPA FINAL RAI 14 (eRAI 5483) SRP-02.03.01 (RSAC)  
**Attachments:** PSEG Site ESPA Final RAI 14 (eRAI 5483).pdf

Please find attached RAI 14 for the PSEG Site ESP application. Following issuance of the first draft of RAI 14 on February 25, 2011, a telecon was held on March 3, 2011, to provide clarification on Questions 02.03.01-1 and 02.03.01-5, as requested by PSEG. During the clarification discussion on Question 02.03.01-5, the staff felt that rewriting Questions 02.03.01-5 and also Question 02.03.01-4 with additional clarity was necessary to communicate staff's expectation of the needed information. Subsequently, on April 4, 2011, revised draft RAI 14 was issued containing re-written Questions 02.03.01-4 and 02.03.01-5; no other changes were made in the revised draft RAI.

On April 13, 2011, a telecon was held to provide clarification on revised draft RAI 14, Questions 02.03.01-4 and 02.03.01-5, as requested by PSEG. As a result of the discussion, two changes were made to Question 02.03.01-5 as follows: (i) one minor grammatical edit was made in the last sentence of the first paragraph; and (ii) the last sentence of the second paragraph, cited from SRP but does not actually constitute a question, was deleted to avoid confusion with the actual question asked in the first paragraph. No other changes were necessary, and therefore, we are issuing this RAI as final.

The schedule we have established for review of your application assumes technically correct and complete responses within 30 calendar days of receipt of RAIs. For any RAIs that cannot be responded to within 30 calendar days, it is expected that a date for receipt of this information will be provided to the staff within the 30-calendar day period so that the staff can assess how this information will impact the published schedule.

If you have any questions, please contact me.

Prosanta Chowdhury  
Project Manager  
EPR Projects Branch  
Division of New Reactor Licensing  
Office of New Reactors  
301-415-1647

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Request for Additional Information No. 14  
Application Revision 0

FINAL

4/14/2011

PSEG Site ESP  
PSEG Power LLC, PSEG Nuclear LLC  
Docket No. 52-043  
SRP Section: 02.03.01 - Regional Climatology  
Application Section: Regional Climatology

QUESTIONS for Siting and Accident Conseq Branch (RSAC)

02.03.01-1

10 CFR 52.17(a)(1)(vi) states, in part, that an application must contain the meteorological characteristics of the proposed site with appropriate consideration of the most severe of the natural phenomena that have been historically reported for the site and surrounding area and with sufficient margin for the limited accuracy, quantity, and time in which the historical data have been accumulated. NUREG-0800, Standard Review Plan (SRP), Section 2.3.1, Regional Climatology, establishes criteria that the NRC staff intends to use to evaluate whether an applicant meets the NRC's regulations.

PSEG ESP Application SSAR Subsection 2.3.1.5.2, "Tornadoes," states that the "site design basis tornado (DBT) characteristics (Table 2.3-5) are from RG 1.76, Revision 1, March 2007." The staff finds and maintains that the wind speeds provided in RG 1.76, Revision 1 are not design-basis tornado wind speeds. The design-basis tornado wind speeds for the reactor designs being considered are found in Tier 2, Section 3.3.2.1 of the respective DCDs.

Please update PSEG ESP Application SSAR Subsection 2.3.1.5.2 to correct this error, or provide justification to substantiate the statement in the application.

02.03.01-2

10 CFR 52.17(a)(1)(vi) states, in part, that an application must contain the meteorological characteristics of the proposed site with appropriate consideration of the most severe of the natural phenomena that have been historically reported for the site and surrounding area and with sufficient margin for the limited accuracy, quantity, and time in which the historical data have been accumulated. NUREG-0800, Standard Review Plan (SRP), Section 2.3.1, Regional Climatology, establishes criteria that the NRC staff intends to use to evaluate whether an applicant meets the NRC's regulations.

Address, in SSAR Section 2.3.1, the extreme frozen winter precipitation event in accordance with the 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" (ML081990438) and, provide a discussion for the site characteristic values chosen.

The ISG states that the extreme frozen winter precipitation event should be the higher ground-level weight (in lb/ft<sup>2</sup>) between: (1) the 100-year return period snowfall event; and (2) the historical maximum snowfall event in the site region.

Please update Subsection 2.3.1.5.4 of the PSEG ESP SSAR to include this information, or provide justification as to why it is not necessary.

#### 02.03.01-3

10 CFR 52.17(a)(1)(vi) states, in part, that an application must contain the meteorological characteristics of the proposed site with appropriate consideration of the most severe of the natural phenomena that have been historically reported for the site and surrounding area and with sufficient margin for the limited accuracy, quantity, and time in which the historical data have been accumulated. NUREG-0800, Standard Review Plan (SRP), Section 2.3.1, Regional Climatology, establishes criteria that the NRC staff intends to use to evaluate whether an applicant meets the NRC's regulations.

PSEG ESP Application SSAR Subsection 2.3.1.7 states that "Philadelphia is excluded for the same reasons as discussed above in Subsection 2.3.1.6." Please clarify the following inconsistencies:

1. The staff did not find a description in Subsection 2.3.1.6 as to why the Philadelphia IAP observation station was not included as part of the analysis provided in Subsection 2.3.1.6 or 2.3.1.7.  
In order to resolve this discrepancy, please include a description as to why this station was dismissed in the SSAR.
2. Explain why data from Philadelphia IAP was acceptable to be used in determining site characteristic temperatures using the EWD CD in Subsection 2.3.1.7 (third paragraph), but was deemed not acceptable for use in the ASHRAE method.
3. If Philadelphia IAP was excluded from the calculations to determine the site characteristic temperatures, please explain why the data was used in PSEG ESP Application SSAR Table 2.3-14 and Table 2.0-1
4. Explain why Philadelphia IAP data was used in PSEG ESP Application SSAR Table 2.3-14 to determine the annual exceedance temperature site characteristics, but was not included in the evaluation of the 100-year return period temperatures provided in PSEG ESP SSAR Table 2.3-13

#### 02.03.01-4

- A) Expand the list of site characteristics presented in SSAR Table 2.0-1 to include site characteristic values that correspond to the ambient air temperature and humidity site parameter values contained in the design control documents (DCDs) for the reactor designs that are referenced in SSAR Section 1.2.2 (i.e., the U.S. EPR, ABWR, US-APWR, and AP1000 reactor designs).

10 CFR 100.20(c)(2) states, in part, that in determining the acceptability of a site for a stationary power reactor, the meteorological characteristics of the site that are necessary for safety analysis or that may have an impact upon plant design must be identified and characterized. SSAR Table 2.0-1 presents a representative list of characteristics that describe the PSEG ESP Site. For a COL application that references the PSEG ESP, the COL applicant will need to demonstrate that the characteristics of the PSEG ESP site fall within the site parameters specified in the DC rule for the chosen reactor design pursuant to 10 CFR 52.79(b)(1). In this

context, the list of site characteristics provided in SSAR Table 2.0-1 should correspond to the site parameters for those reactor designs being considered for the PSEG ESP site.

- B) In order to be compliant with 10 CFR 52.17(a)(1)(vi), expand the list of ambient air temperature and humidity site characteristics presented in SSAR Table 2.0-1 to include both historic extreme and 100-year return period values.

10 CFR 52.17(a)(1)(vi) states, in part, that ESP applicants must identify the meteorological characteristics of the proposed site with appropriate consideration of the most severe of the natural phenomena that have been historically reported for the site and surrounding area and with sufficient margin for the limited accuracy, quantity, and period of time in which the historical data have been accumulated. Temperatures based on a 100-year return period are considered to provide sufficient margin for the limited accuracy, quantity, and period of time in which the historical data have been accumulated as required by the regulation. The PSEG ESP ambient air temperature and humidity site characteristic values should include both historic extreme and 100-year return period values for comparison with the DCD 0% exceedance air temperature and humidity site parameter values at the COL stage.

#### 02.03.01-5

SSAR Section 2.3.1.7 states that the maximum recorded dry bulb temperature (DBT) at the site and its surrounding climate area was 108 °F at the Marcus Hook COOP station. Because the Marcus Hook COOP station does not record wet bulb temperature (WBT), a coincident WBT of 79 °F was estimated using a graphical extrapolation of the DBT/WBT depression relationship. Please provide a detailed description of the graphical extrapolation technique that was used to determine the 79 °F coincident WBT, including the basis for using WBT data from a different site.

10 CFR 100.21(d) states, in part, that applicants for site approval for commercial nuclear power plants shall evaluate and establish meteorological site characteristics such that potential threats from such characteristics will pose no undue risk to the type of facility proposed to be located at the site. 10 CFR 52.17(a)(1)(vi) further states, in part, that an application must contain the meteorological characteristics of the proposed site with appropriate consideration of the most severe of the natural phenomena that have been historically reported for the site and surrounding area and with sufficient margin for the limited accuracy, quantity, and time in which the historical data have been accumulated. NUREG-0800, Standard Review Plan (SRP), Section 2.3.1, Regional Climatology, establishes criteria that the NRC staff intends to use to evaluate whether an applicant meets the NRC's regulations.