

## PMSTPCOL PEmails

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**From:** Govan, Tekia  
**Sent:** Thursday, November 17, 2011 4:28 PM  
**To:** 'Bense, Richard'  
**Cc:** Tonacci, Mark; Wunder, George; Tai, Tom; STPCOL; 'smhead@stpegs.com'; 'wemookhoek@stpegs.com'  
**Subject:** DRAFT RAI - Section 2.3  
**Attachments:** RAI 6204.doc

Dick:

Per our discussion attached please find RAI 6204 related to Section 2.3 of the STP Units 3 and 4 R-COLA. Please review and let me know when STP will be ready to discuss this RAI.

Thanks  
Tekia

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**Email Number:** 3134

**Mail Envelope Properties** (F5A4366DF596BF458646C9D433EA37D79FE5EB4AB9)

**Subject:** DRAFT RAI - Section 2.3  
**Sent Date:** 11/17/2011 4:27:39 PM  
**Received Date:** 11/17/2011 4:27:40 PM  
**From:** Govan, Tekia

**Created By:** Tekia.Govan@nrc.gov

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| <b>Files</b> | <b>Size</b> | <b>Date &amp; Time</b> |
|--------------|-------------|------------------------|
| MESSAGE      | 447         | 11/17/2011 4:27:40 PM  |
| RAI 6204.doc | 33274       |                        |

**Options**

**Priority:** Standard  
**Return Notification:** No  
**Reply Requested:** No  
**Sensitivity:** Normal  
**Expiration Date:**  
**Recipients Received:**

Request for Additional Information No. 6204 Revision 0

South Texas Project Units 3 and 4  
South Texas Project Nuclear Operating Co  
Docket No. 52-012 and 52-013  
SRP Section: 02.03.01 - Regional Climatology  
Application Section: FSAR 2.0, 2.3.1, 3.3.2, 3.5.3, 3.8

QUESTIONS for Siting and Accident Conseq Branch (RSAC)

02.03.01-\*\*\*

10 CFR 52.79(a)(1)(iii) states, in part, that the COL FSAR should include 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. 10 CFR 100.20(c)(2) states that 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 and 10 CFR 100.21(c)(d) states, in part, that the meteorological characteristics of the site must be evaluated and site parameters established such that potential threats from such physical characteristics will pose no undue risk to the type of facility proposed to be located at the site.

10 CFR Part 50, Appendix A, GDC 2 requires that SSCs that are important to safety be designed to withstand the effects of natural phenomena, such as tornadoes and hurricanes, without loss of the ability to perform their safety functions.

Nuclear power plants must be designed so that they remain in a safe condition under extreme meteorological events, including those that could result in the most extreme wind events (tornadoes and hurricanes) that could reasonably be predicted to occur at the site. Initially, the U.S. Atomic Energy Commission (predecessor to the NRC) considered tornadoes to be the bounding extreme wind events and issued RG 1.76, "Design-Basis Tornado for Nuclear Power Plants," in April 1974. The design-basis tornado wind speeds were chosen so that the probability that a tornado exceeding the design basis would occur was on the order of 10<sup>-7</sup> per year per nuclear power plant. In March 2007, the NRC issued Revision 1 of RG 1.76, "Design-Basis Tornado and Tornado Missiles for Nuclear Power Plants." Revision 1 of RG 1.76 relied on the Enhanced Fujita Scale, which was implemented by the National Weather Service in February 2007. The Enhanced Fujita Scale is a revised assessment relating tornado damage to wind speed, which resulted in a decrease in design-basis tornado wind speed criteria in Revision 1 of RG 1.76. Since design-basis tornado wind speeds were decreased as a result of the analysis performed to update RG 1.76, it was no longer clear that the revised tornado design basis wind speeds would bound design-basis hurricane wind speeds in all areas of the United States. This prompted an investigation into extreme wind gusts during hurricanes and their

relation to design basis hurricane wind speeds, which resulted in issuing RG 1.221, "Design-Basis Hurricane and Hurricane Missiles for Nuclear Power Plants," in October 2011.

a. Revise the FSAR to identify a site-specific hurricane wind speed and hurricane missile spectra (including missile mass and velocity) for the STP COL site using the guidance provided in RG 1.221; alternatively, provide a justification for why the meteorological information provided in the STP FSAR satisfies the requirements in 10 CFR 52.79(a)(1)(iii), 10 CFR 100.20(c)(2), and 10 CFR 100.21(c)(d).

b. Describe in FSAR Sections 3.3.2 and 3.5.3 how SSCs important to safety are protected from the combined effects of hurricane winds and missiles. The SSCs that should be protected against the effects of a design-basis hurricane should be the same SSCs that are protected against the effects of a design-basis tornado as identified in Revision 1 to RG 1.117.

c. Describe how the structural design presented in FSAR Section 3.8 is affected by considering RG 1.221.