

## AP1000DCDFileNPEm Resource

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**From:** Michael Miernicki  
**Sent:** Monday, June 09, 2008 9:02 AM  
**To:** Perry Buckberg; Rhonda Carmon  
**Subject:** FW: Chapter 19 RAIs  
**Attachments:** RAI-SRP 19 0-SPLA-12.doc; RAI-SRP 19 0-SPLA-13 (2).doc

FYI. Westinghouse receipt acknowledgement.

Mike

Michael J. Miernicki  
Project Manager  
NRC/NRO/DNRL/NWE2  
301-415-2304

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**From:** Adams II, Samuel L. [mailto:adamssl@westinghouse.com]  
**Sent:** Sunday, June 08, 2008 12:06 PM  
**To:** Michael Miernicki  
**Cc:** Lindgren, Donald A.  
**Subject:** FW: Chapter 19 RAIs

Hi Mike,

I acknowledge receipt of the attached RAIs on SRP19. These are the third set of RAIs from the same branch on the same SRP section. Please advise if and how many more iterations can be expected.

I will let you know as soon as possible if a clarification call is necessary.

Thanks.

Sam

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**From:** Michael Miernicki [mailto:Michael.Miernicki@nrc.gov]  
**Sent:** Wednesday, June 04, 2008 3:04 PM  
**To:** Adams II, Samuel L.  
**Cc:** Perry Buckberg; Rhonda Carmon  
**Subject:** Chapter 19 RAIs

Sam, please see attached RAIs and let me know as soon as possible whether Westinghouse understands these questions or if a conference call is necessary for any clarifications. Thanks.

Mike

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**Hearing Identifier:** AP1000\_DCD\_Review  
**Email Number:** 80

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**Subject:** FW: Chapter 19 RAIs  
**Sent Date:** 6/9/2008 9:01:39 AM  
**Received Date:** 6/9/2008 9:01:40 AM  
**From:** Michael Miernicki

**Created By:** Michael.Miernicki@nrc.gov

**Recipients:**  
"Perry Buckberg" <Perry.Buckberg@nrc.gov>  
Tracking Status: None  
"Rhonda Carmon" <Rhonda.Carmon@nrc.gov>  
Tracking Status: None

**Post Office:** HQCLSTR01.nrc.gov

<b>Files</b>	<b>Size</b>	<b>Date &amp; Time</b>
MESSAGE	1151	6/9/2008 9:01:40 AM
RAI-SRP 19 0-SPLA-12.doc	37442	
RAI-SRP 19 0-SPLA-13 (2).doc	22594	

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

## RAI-SRP 19.0-SPLA-12

The interim staff guidance on **Seismic Issues Associated with High Frequency Ground Motion** defines ground motion response spectra (GMRS) as site-specific. For this reason, the generic hard-rock high-frequency (HRHF) ground motion spectra provided in Figures 5.0-3 and 5.0-4 (added to DCD Revision 16, Tier 1) are considered design basis spectra for hard rock sites. SECY-93-087, "Policy, Technical, and Licensing Issues Pertaining to Evolutionary and Advanced Light-Water Reactor (ALWR) Designs," states:

PRA insights will be used to support a margins-type assessment of seismic events. A PRA-based seismic margins analysis will consider sequence-level HCLPFs and fragilities for all sequences leading to core damage or containment failures up to approximately twice the magnitude of the SSE.

Please clarify the basis proposed for the seismic margins analysis of plants at hard rock sites given that the SSE is now taken as the HRHF GMRS (defined at the foundation level for 5% damping) as shown in Figure 5.0-3 and Figure 5.0-4 of the DCD (Tier 1). If other sections of the DCD are affected, please revise them.

Please clarify the COL information items either by amending COL information item 19.59.10-1 or by adding an item to make it clear that each COL **applicant** should identify the GMRS for each proposed site. The applicant should confirm that the GMRS to which the plant may be subjected is bounded by the appropriate generic GRMS from the DCD (Tier 1, Chapter 5) or otherwise demonstrate that the plant has adequate margin with respect to the site-specific GMRS. It will remain for each COL holder to confirm that the as-built plant conforms to the both the seismic design and the seismic margins analysis described in DCD Section 19.55.

## **RAI-SRP 19.0-SPLA-13**

The staff compared the results of the shutdown PRA as seen in the current model with the results reported in Revision 16 of the DCD. Many of the results are now significantly different from those reported in Chapter 19 of the DCD Section 19.59.5.1, "Summary of Shutdown Level 1 Results."

For example, in Section 19.59.5.1 the dominant sequences and key contributors to risk are discussed. The staff compared this documentation with the top 15 cutsets and the top 20 component basic events ranked by risk achievement worth (RAW) from the CAFTA results. Loss of component cooling (CWS) or service water (SWS) during drained conditions contributes at least 73% to the CDF as seen in the CAFTA results versus 64% as reported in the DCD. Loss of the RNS initiating event during drained conditions contributes at least 10% to the CDF as compared to 6% reported in the DCD. Inadvertent draining through V-24 (IEV-LOCA24ND) contributes more to CDF than the risk of RCS overdraining as seen in the CAFTA results. However, this event is not reported in the DCD.

Please update DCD Table 19.59-15, "Summary of AP1000 Results" and provide the following information:

1. a list of cutsets for the AP1000 Shutdown PRA that contribute to 95% of total shutdown CDF and any that contribute as much as 1% of total shutdown CDF.
2. a list of all SSCs in the shutdown PRA with their RAWs (if RAW > 2)
3. a list of all human actions modeled in the shutdown PRA with their RAW
4. a list of all CCFs in the shutdown PRA with their RAW (if RAW > 2) (or confirm that all are described in WCAP-16555)

Also, please confirm that the list of major contributors to risk for each sequence that contributes more than 1% to shutdown CDF remains consistent with the cutset results.

Finally, please revise the DCD as necessary to ensure that all such sequences are described.