## ArevaEPRDCPEm Resource

**From:** Tesfaye, Getachew
**Sent:** Wednesday, August 31, 2011 12:28 PM
**To:** 'usepr@areva.com'
**Cc:** ODriscoll, James; Jackson, Christopher; McKirgan, John; Clark, Phyllis; Colaccino, Joseph; ArevaEPRDCPEm Resource
**Subject:** Draft - U.S. EPR Design Certification Application RAI No. 509 (6011), FSAR Ch. 9
**Attachments:** Draft RAI_509_SPCV_6011.doc

Attached please find draft RAI No. 509 regarding your application for standard design certification of the U.S. EPR. If you have any question or need clarifications regarding this RAI, please let me know as soon as possible, I will have our technical Staff available to discuss them with you.

Please also review the RAI to ensure that we have not inadvertently included proprietary information. If there are any proprietary information, please let me know within the next ten days. If I do not hear from you within the next ten days, I will assume there are none and will make the draft RAI publicly available.

Thanks,
Getachew Tesfaye
Sr. Project Manager
NRO/DNRL/NARP
(301) 415-3361

**Hearing Identifier:** AREVA_EPR_DC_RAIs
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**Created By:** Getachew.Tesfaye@nrc.gov

**Recipients:**
"ODriscoll, James" <James.ODriscoll@nrc.gov>
Tracking Status: None
"Jackson, Christopher" <Christopher.Jackson@nrc.gov>
Tracking Status: None
"McKirgan, John" <John.McKirgan@nrc.gov>
Tracking Status: None
"Clark, Phyllis" <Phyllis.Clark@nrc.gov>
Tracking Status: None
"Colaccino, Joseph" <Joseph.Colaccino@nrc.gov>
Tracking Status: None
"ArevaEPRDCPEm Resource" <ArevaEPRDCPEm.Resource@nrc.gov>
Tracking Status: None
"'usepr@areva.com'" <usepr@areva.com>
Tracking Status: None

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Request for Additional Information No. 509(6011), Revision 0

8/31/2011

U. S. EPR Standard Design Certification
AREVA NP Inc.
Docket No. 52-020
SRP Section: 09.04.01 - Control Room Area Ventilation System
Application Section: 9.4.1

QUESTIONS for Containment and Ventilation Branch 1 (AP1000/EPR Projects) (SPCV)

09.04.01-6

Clarify the FSAR Tier 1 markup provided in response to RAI 277, Question 09.04.01-1:

With regard to the response of the CRACS to a high radiation condition, the FSAR Tier 1 markup provided in response to RAI 277 Question 09.04.01-1, page 2.6-2, show a deletion of the words "or high radiation alarm signal in the intake duct." This markup conflicts with the discussion on page 2.6-1 of the same markup which does not delete these words. FSAR Revision 2 Tier 2 page 6.5-5 also discusses isolation on high radiation alarm signal. Please clarify Tier 1. The staff understands that the CRACS will automatically align to maintain a positive pressure in the CRE relative to adjacent areas upon receipt of either a containment isolation signal or a high radiation alarm signal sensed from the intake ducts.

09.04.01-7

Confirm the accident response and function of the low volume purge system for the rod ejection accident:

In your response to RAI 277, Question 09.04.03-3, you provided markups of FSAR Tier 1 and 2 to claim a safety-related function of the CBVS. In the Tier 1 markup on page 2.6-104 you state the CBVS filters exhaust from the containment atmosphere upon receipt of the containment isolation signal until the containment isolation valves close. The staff understands that these CIVs should close automatically within 5 seconds (FSAR Tier 2 paragraph 9.4.7.3). Therefore the staff is unclear if the CBVS tier 1 filtering safety function, as described, is able to reduce off site dosage. In the tier 2 markup on page 9.4-92, you state the safety-related function of the CBVS as, "provides containment isolation and low-flow purge exhaust from the containment isolation valves during a postulated rod ejection accident." Is there a requirement for a containment purge operation using these valves in this particular accident? If so the staff is concerned that the configuration of the low volume purge penetrations do not support operation with a single active failure, since only one containment penetration with two valves in series are supplied. A configuration which is not susceptible to single failure (failure to isolate containment on demand or failure open to purge containment on demand) would necessitate two containment penetrations, with two valves in series.

The staff believes that there is no credited role for containment filtration via the CBVS low volume purge trains in the accident analyses, and that the intent of the design is for

the CBVS low accident exhaust filter trains to be optionally aligned and utilized as a back-up to the SBVS safety-related functions. The staff notes that one SBVS safety related function is the establishment of a negative pressure in the Fuel Building and the radiological controlled areas of the Safeguard Building in order to ensure that potentially contaminated air does not escape to the environment (Reference Tier 2 FSAR table 14.3-2). If the CBVS is to act as a backup system for this function, please clarify the safety-related function of the CBVS trains, and propose Technical Specification operability and surveillance requirements to verify operability of the CBVS accident exhaust trains (i.e. provide surveillance requirements to operate the train, do the filter testing, verify system actuation, verify system alignment in accident mode). Propose additional ITACC for the CBVS accident exhaust filter trains in order to test the drawdown time and the negative pressure of the Fuel Building and the Safeguard Building. Alternatively, if filtration via the CBVS filter trains is required to function in a specific DBA, please clarify this function and the accident scenario, and propose technical specification requirements for the CBVS accident exhaust trains. If filtration of containment is required for a specific DBA, include a discussion on how the system meets single failure criteria for this DBA function.