

## ArevaEPRDCPEm Resource





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**From:** Snyder, Amy  
**Sent:** Thursday, March 14, 2013 9:03 AM  
**To:** usepr@areva.com  
**Cc:** Pohida, Marie; Mrowca, Lynn; Ford, Tanya; Segala, John  
**Subject:** U.S. EPR Design Certification Application FINAL RAI No. 572, FSAR Ch. 19  
**Attachments:** FINAL RAI\_572\_SPRA\_6971.doc

Attached, please find the subject requests for additional information (RAI). An advanced RAI was provided to you on February 8, 2013, and discussed with your staff on March 1, 2013. The advanced RAI was modified as a result of that discussion. On March 8, 2013, you informed us that the advanced RAI is clear and no further clarification is needed and that the RAI does not contain any proprietary information. The schedule we have established for review of your application assumes technically correct and complete responses within 30 days of receipt of RAIs. For any RAIs that cannot be answered **within 30 days or April 12, 2013**, it is expected that a date for receipt of this information will be provided to the staff within the 30-day period so that the staff can assess how this information will impact the published schedule.”

Thank You,

Amy

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## Request for Additional Information 572

Issue Date: 3/12/2013

Application Title: U. S. EPR Standard Design Certification - Docket Number 52-020

Operating Company: AREVA NP Inc.

Docket No. 52-020

Review Section: 19 - Probabilistic Risk Assessment and Severe Accident Evaluation

Application Section: 19

### QUESTIONS

19-364

The staff has reviewed the applicant's response to RAI 19-348 and 19-349 containment closure during Modes 5 and 6 with low water level. The staff has reviewed the new containment closure TS during Modes 5 and 6 which significantly reduces LRF. However, this statement in the Rev 4 TS, it states, "The other containment penetrations that provide direct access from containment atmosphere to outside atmosphere must be isolated on at least one side. Isolation may be achieved by an OPERABLE automatic isolation valve, or by a manual isolation valve, blind flange, or equivalent. Equivalent isolation methods must be approved and may include use of a material that can provide a temporary, atmospheric pressure, ventilation barrier for the other containment penetrations during reduced inventory conditions with fuel in the reactor vessel."

The staff requests information regarding the definition of the word, "equivalent". The staff is concerned that the use of equivalent methods may permit containment penetrations that would not keep the containment closed as defined in GL 88-17. As stated in GL 88-17 Enclosure 3, definition of closed containment, "... that a barrier to the escape of radioactive material is reasonably expected to remain in place following a core melt accident...".

The staff read the Westinghouse Improved TS basis that AREVA submitted regarding "equivalent isolation methods" for containment closure to limit radioactive releases. In this context, Westinghouse's use of "equivalent isolation methods" are intended to limit releases following a postulated **fuel handling accident during core alterations** occur when vessel level is > 23 feet above the reactor vessel flange not a postulated core melt accident.

19-365

The staff understands that during maintenance activities in the direct environment to the passive autocatalytic recombiners (PARs), which mainly occurs during an outage, the housing will be covered by a blanket. The blanket overlaps the entire PAR housing and will be tied at the lower end. The PARs will be tested to verify their function and required performance at the end of the outage. U.S. EPR FSAR Tier 2, Section 6.2.5.4 will be revised to describe the PAR covering during outage work.

The staff reviewed the applicant's response to RAI 19-298. With 25% availability (equivalent to 75 percent unavailability), the hydrogen mass in containment is determined to be smaller than 940kg for a transient and LOCA scenario. A containment hydrogen mass of 940kg was used as the deflagration load calculations in the shutdown Level 2 analysis. The staff noted that uncertainty in the MAAP results was not addressed in the RAI response.

Considering MAAP code uncertainty, the staff is requesting AREVA to add a risk insight to Table 19.1-108, the US EPR Risk Insights, and FSAR Section 19.1.6.3 documenting how many PARs units should be functional and available during shutdown. This risk insight should include information concerning containment locations that are sensitive to high hydrogen

concentrations such as the IRWST volume.