

ArevaEPRDCPEm Resource

From: Tesfaye, Getachew
Sent: Monday, June 14, 2010 11:10 AM
To: 'usepr@areva.com'
Cc: Bongarra, James; Walker, Jacqwan; Marble, Julie; Junge, Michael; Eudy, Michael; Steckel, James; Colaccino, Joseph; ArevaEPRDCPEm Resource
Subject: Draft - U.S. EPR Design Certification Application RAI No. 419 (4727,4780), FSAR Ch. 18
Attachments: Draft RAI_419_COLP_4727_4780.doc

Attached please find draft RAI No. 419 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,
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Hearing Identifier: AREVA_EPR_DC_RAIs
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Request for Additional Information No. 419(4727, 4780), Revision 1

6/14/2010

U. S. EPR Standard Design Certification
AREVA NP Inc.
Docket No. 52-020
SRP Section: 18 - Human Factors Engineering
Application Section: Ch.18.0

QUESTIONS for Operating Licensing and Human Performance Branch (AP1000/EPR Projects) (COLP)

18-171

Follow-up to RAI 4016 (336), question 18-73 (15535):

The staff has determined that the applicant's response to parts (a.1) and (a.2) of this RAI acceptably addresses the staff's questions concerning defining and assessing a meaningful job and providing information related to assessing cognitive workload by providing a definition of meaningful job and describing the application of the GOMS technique to assess cognitive workload. This portion of the RAI question has been satisfactorily addressed and can be closed.

However, the staff has the following additional questions concerning the applicant's response to parts (b.1) and (b.2). While the applicant has provided a generic description of what a task timeline is, the response does not provide an explanation of how the technique is/will be used to develop the EPR task analysis (e.g., an example of a task timeline that is related to the EPR TA has not been provided). In addition, the applicant's response does not clearly explain how the timeline developed for the EPR TA will be used to address issues of workload and response timing related to EPR operators. The staff requests for the applicant to please explain how the task timeline technique is used to develop the EPR TA and how the timeline is used to address issues of workload and response timing related to EPR operators.

18-172

NUREG-0711, Criterion 8.4.5, "HSI Detailed Design and Integration," sub-criterion 8, states that HSI characteristics should support human performance under the full range of environmental conditions. In support of this criterion, AREVA submitted, as part of its HSI IP, a description for developing the minimum inventory of alarms, controls, and displays for the MCR and the RSS. With respect to the applicant's IP Rev 3., page 24, AREVA states that, "The minimum inventory development process, is iterative similar to the other U.S. EPR™ HFE program elements. Design inputs to MI development are revised as the design evolves and the MI list is re-evaluated and adjusted as necessary until the design is finalized." The staff requests for the applicant to please clarify what is meant by the last sentence, "Design inputs to MI development are revised as the design evolves and the MI list is re-evaluated and adjusted as necessary until the design is finalized."

Follow-up to RAI 322, Question 18-49

In RAI Letter 322, AREVA responded to question 18-49 as follows:

A physical verification is conducted along with verification of the as-built documentation. The following step for physical verification will be added to the U.S. EPR HFE Design Implementation Plan:

“Conduct a physical verification of all as-built HSIs including the control rooms and local control stations (LCSs) to verify that the design conforms to the design requirements and regulations. For any discrepancies identified, create an HED. Enter this into the HFE Issues Tracking System. Address and follow the same HED resolution process as outlined in Section 3.9.3.5 of Reference 4.”

The schedule for the revision to the U.S. EPR HFE Design Implementation Plan is provided in the Response to Question 18-47.

Information regarding physical verification will also be added to U.S. EPR FSAR Tier 2, Section 18.11.2.2.

The staff believes that the response does address the concern of adding an additional step for physical verification of control room HSIs. However, based on the response, the staff requests for the applicant to address additional items of concern as follows:

- a. The last sentence of the revised verification step states “Address and follow the same HED resolution process as outlined in Section 3.9.3.5 of Reference 4.” Reference 4 is the Procedure Development IP, and this IP does not have a section 3.9.3.5. If this is the intended reference, then please provide information describing the purpose for the reference. If this is not the intended reference, then please make the appropriate changes.
- b. The staff reviewed the revised Design Implementation IP (118-9047891-001) and did not find the additional step described above for physical verification of the as-built HSIs. Please clarify if this statement is to be included in a revised design implementation IP. If so, then please clarify when this will take place.
- c. The step instructs the Responsible HFE Engineer to conduct the physical verification of as-built HSIs but it does not give any acceptance criteria. Please clarify the method the R-HFE-E will be using to conduct their physical verification, and what standard documents are to be used during this activity.