ArevaEPRDCPEm Resource

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Sent: Friday, January 22, 2010 2:59 PM
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Subject: Draft - U.S. EPR Design Certification Application RAI No. 360 (4132), FSAR Ch. 12 - PHASE 4 RAI
Attachments: Draft RAI_360_CHPB_4132.doc

Attached please find draft RAI No. 360 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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Request for Additional Information No. 360 (4132), Revision 1

1/22/2010

U. S. EPR Standard Design Certification
AREVA NP Inc.
Docket No. 52-020
SRP Section: 12.03-12.04 - Radiation Protection Design Features
Application Section: 12.03-12.04 - Radiation Protection Design Features

QUESTIONS for Health Physics Branch (CHPB)

12.03-12.04-20

This is a follow-up to OPEN ITEM RAI 228, Question No. 12.3-12.4-10

In response to RAI 12.3-12.4-10, the applicant stated that the demineralized water distribution system would have no buried piping associated with its connections to contaminated systems. However, the applicant did not address this system's connection with the condensate storage and transfer system, which can also become contaminated over time due to steam generator tube leaks and tritium diffusion. Recent operating experience from several operating reactors has demonstrated that buried condensate piping can corrode and leak to the ground, resulting in environmental contamination. These leaks have then become the focus of NRC oversight and public concern. Therefore provide the following information to demonstrate compliance with 10 CFR 20.1406:

1. Tier 2, Section 9.2.6, “Condensate Storage Facilities,” of the EPR FSAR states that the EPR stores condensate in the condenser hotwell and in the demineralized water storage tank. Given that the demineralized water storage tanks are located outdoors, provide information on whether there is any buried piping connecting these tanks to the condensate system. If there is buried piping describe how the piping will allow for inspection and/or monitoring to prevent unmonitored releases to the environment, or justify an alternative methodology for demonstrating compliance with 10 CFR 20.1406.

2. Describe whether the EPR design will have buried piping connected to any contaminated or potentially contaminated systems (such as condensate/feedwater storage and transfer systems). If so, describe how this piping will allow for inspection and/or monitoring to prevent unmonitored releases to the environment.

3. Update the FSAR to include an overview of the EPR's use of buried piping for any contaminated and potentially contaminated systems, including discussion on how this buried piping complies with 10 CFR 20.1406, as provided in the answers to questions 1 and 2 above.

4. Describe design features of the condensate/feedwater storage and transfer system as well as the main steam and auxiliary steam systems which demonstrate compliance with 10 CFR 20.1406. If these design features are not already in the FSAR, update the FSAR sections for the system.

12.03-12.04-21

This is a follow-up to OPEN ITEM RAI 228, Question No. 12.3-12.4-9

1. A review of Areva's response to RAI 228, Question 12.03-12.04-9, part 3, indicates that much of the information presented is a recap of system features and operational concepts already described in the FSAR. However, one aspect that is not well discussed for Section 11.5 are 10 CFR 20.1406 design features associated with process and effluent monitoring and sampling systems. There is a need to expand the discussion on design features of the process and effluent monitoring and sampling systems and their interconnections to non-radioactive systems. Subsystem interconnections to non-radioactive systems include purge air, purge water, instrument air, and makeup water for filling loop seals. The design features should describe how these non-radioactive system interconnections are protected from contamination due to leakage, spillage, valving errors, or other operating conditions. For example, for equipment requiring the use of purge air, the air should be taken from ambient or room atmosphere where the sampling subsystem is located, passed through prefilters, and then, upon demand, made available for purging, with the purged flow not returned to its supply source. For liquid process or effluent rad monitors that require flush water, the design of these interconnections should confirm that flush water supply is either temporarily connected during maintenance and then completely removed upon termination of the flush, or, if permanently connected, protected by backflow preventers and pressure differentials. Again, the purge flow should be forwarded to the most appropriate radioactive system and not returned to its supply source. Where loop seals are utilized, the loop seals should be isolated from the makeup water source by use of isolation valves and backflow preventers. Similar design features should be described for instrument air. This expanded discussion should be presented in FSAR Section 12.3.6.5.2 or 12.3.6.5.4, with internal cross-referencing. If, as part of this response, new or additional design features are described, then they should all be incorporated into the relevant FSAR sections where the systems are described.

2. In response to RAI 228, Question 12.03-12.04-9 part 4, the applicant provided an FSAR mark up showing the addition of text in FSAR Sections 11.2 to 11.4 which references information presented in FSAR Section 12.3.6.5.4 for details on compliance with 10 CFR Part 20.1406. However, no similar insert was suggested for Section 11.5. As with FSAR Sections 11.2 to 11.4, the following insert should be added to FSAR Section 11.5:

"Refer to Sections 12.3.6.5.2 and 12.3.6.5.4 for process and effluent monitoring and sampling systems design features which demonstrate compliance with the requirements of Part 20.1406 and guidance of IE Bulletin 80-10."