ArevaEPRDCPEm Resource

From: Tesfaye, Getachew
Sent: Wednesday, April 20, 2011 9:31 AM
To: 'usepr@areva.com'
Cc: DeMarshall, Joseph; Kowal, Mark; Hearn, Peter; Canova, Michael; Colaccino, Joseph; ArevaEPRDCPEm Resource
Subject: Draft - U.S. EPR Design Certification Application RAI No. 484 (5724), FSAR Ch. 16, NEW PHASE 4 RAI
Attachments: Draft RAI_484_CTSB_5724.doc

Attached please find draft RAI No. 484 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:
"DeMarshall, Joseph" <Joseph.DeMarshall@nrc.gov>
Tracking Status: None
"Kowal, Mark" <Mark.Kowal@nrc.gov>
Tracking Status: None
"Hearn, Peter" <Peter.Hearn@nrc.gov>
Tracking Status: None
"Canova, Michael" <Michael.Canova@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

Post Office: HQCLSTR02.nrc.gov

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Request for Additional Information No. 484(5724), Revision 0

4/20/2011

U. S. EPR Standard Design Certification
AREVA NP Inc.
Docket No. 52-020
SRP Section: 16 - Technical Specifications
Application Section: SRP 16

QUESTIONS for Technical Specification Branch (CTSB)

16-322

NEW PHASE 4 RAI

OPEN ITEM

The U.S. EPR Technical Specifications (TS) do not include a Limiting Condition for Operation (LCO) for the Diverse Actuation System (DAS) in the Instrumentation section of the TS. FSAR Section 7.8.1.1.3, “Diverse Actuation System,” states that the DAS executes manual functions initiated from the Process Information and Control System (PICS) and automatic functions to mitigate an anticipated transient without scram (ATWS) or software common cause failure (SWCCF) of the protection system (PS). Section 7.8.1.1.3 also states that the DAS is diverse from the PS. In addition, FSAR Section 15.8.1.3 states that the DAS includes logic that fulfills the ATWS requirements of 10 CFR 50.62 and that the DAS logic is independent from sensor output to the final actuation device from the primary safety-related TXS protection system (PS) design features, and provides a diverse means to trip the reactor, trip the turbine, and initiate emergency feedwater (EFW) on conditions indicative of an ATWS. It also states that these diverse functions provided by the DAS provide reasonable assurance that a pressure increase does not exceed the ASME Service Level C limit of 3200 psig or does not exceed containment safety parameters.

The staff concludes that the DAS, upon postulated failure of the PS or the Control Rod Drive Control System, contains:

a. Installed instrumentation that is used to detect and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary (10 CFR 50.36 (c)(2)(ii)(A)).
b. Design features (diversity) that are an initial condition of a transient analysis (ATWS) that presents a challenge to the integrity of a fission product barrier (10 CFR 50.36 (c)(2)(ii)(B)).

Therefore, the staff requests the applicant to explain how the Instrumentation section of the U.S. EPR TS meets the requirements of Criterion A and B of 10 CFR 50.36 (c)(2)(ii) with respect to the DAS/ATWS system.

The staff also requests the applicant to explain how the Instrumentation section of the U.S. EPR TS meets the requirements of Criterion D of 10 CFR 50.36 (c)(2)(ii) with respect to the DAS/ATWS system. Criterion D states “A structure, system, or component

which operating experience or probabilistic risk assessment has shown to be significant to public health and safety."