

April 16, 2010

MEMORANDUM FOR: Joseph Colaccino, Chief
U.S. EPR Projects Branch
Division of New Reactor Licensing
Office of New Reactors

FROM: Edward, Roach, Chief */RA/*
Health Physics Branch
Division of Construction, Inspection & Operational Programs
Office of New Reactors

SUBJECT: U.S. EPR FSAR CHAPTER 11 CHPB AUDIT OF MARCH 24, 2010

The Health Physics Branch (CHPB) has conducted an audit of information and documents presented by Areva staff on March 24, 2010. The information was made available to support the staff's review of Areva's U.S. EPR Design Control Document (DCD) Revision 1, FSAR Sections 11.2 through 11.5. The attached enclosure presents the report documenting the conduct of the audit and material addressed in discussions with Areva's staff.

Should there be any questions, please do not hesitate to contact me or Mr. Jean-Claude Dehmel.

Enclosure: Audit report

Cc: Jason Jennings, Getachew Tesfaye

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OFFICE	NRO/DCIP/CHPB	NRO/DCIP/CHPB (BC)
NAME	JC. Dehmel	E. Roach
DATE	04/14/10	04/16/10

OFFICIAL RECORD

**U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF NEW REACTORS
DESIGN CERTIFICATION AUDIT**

Report No: 05200020-2010-(projects to insert no.)

Organization: AREVA NP Inc.

Applicant Contacts: Mr. Martin Bryan
Deputy Licensing Manager
AREVA NP Inc.
3315 Old Forrest Road
P.O. Box 10935
Lynchburg, VA, 24506-0935

Nuclear Industry: AREVA NP Inc., designs, builds, and starts up nuclear steam supply systems, and supplies fuel, engineering services, and replacement components to U.S. nuclear utilities. AREVA NP Inc. is one of the three major business entities under AREVA NP. The other major business entities are located in France (AREVA NP SAS) and Germany (AREVA NP GmbH).

Date: March 24, 2010

NRC Staff: Jason Jennings, U.S. EPR FSAR Chapter 11 Project Manager, DNRL/NRO
Jean-Claude Dehmel, Senior Health Physicist, DCIP/NRO

NRC Contractors: N/A

NRC Management: N/A

1.0 SUMMARY

U.S. Nuclear Regulatory Commission (NRC) staff audited supporting documents related to Chapter 11 of the AREVA NP Inc. (AREVA) U.S. EPR design certification (DC) application at the AREVA facility in Rockville, Maryland. The purpose of this audit is to review the open items addressed in the Safety Evaluation Report with Open Items which has been prepared by the staff and resolve the technical issues related to this subject area. The audit consisted of going over AREVA responses submitted to staff requests for additional information (RAI). This information and materials necessary to support the audit are contained in the SER (identified as open items), in RAI responses submitted to the NRC, and notes generated by the staff during its technical review. This information was used during the conduct of the audit. The audit provides the staff an opportunity to gain a better understanding of the basis underlying the application and identify areas where additional information should be submitted to allow a licensing decision on the application.

Enclosure

The regulatory basis for the audit is listed in the SER for the U.S. EPR, FSAR Chapter 11 for each system evaluated in the SER and subject to this audit. No new regulatory requirements were introduced during the conduct of this audit. The key regulatory requirements forming the technical bases of the audit are contained in:

- Title 10 of the *Code of Federal Regulations* (10 CFR 20), “Standards for Protection Against Radiation”
- 10 CFR 50.34a, “Design Objectives for Equipment to Control Releases of Radioactive Material in Effluents - Nuclear Power Reactors”
- 10 CFR Part 50, “Appendix I to Part 50 - Numerical Guides for Design Objectives and Limiting Conditions for Operation to Meet the Criterion “As Low As is Reasonably achievable” (ALARA) for Radioactive Material in Light-Water-Cooled Nuclear Power Reactor Effluents.
- CFR 52.47(b)(1), “Contents of Applications; Technical Information”
- Regulatory Guide 1.206, “Combined License Applications for Nuclear Power Plants (LWR Edition),” Section C.I.11, “Radioactive Waste Management”
- NUREG-0800, “Standard Review Plan,” Section 11 “Radioactive Waste Management”

As a result of the staff ongoing review of RAI responses and information and clarifications obtained during the audit, the staff will submit supplemental RAIs to ensure that information needed for the staff’s safety decision is properly included in the U.S. EPR docket file. The staff will refer to the FSAR, RAI responses, and the enclosed report, but not to the detailed documents reviewed at AREVA’s site, in its safety evaluation of the U.S. EPR.

2.0 STATUS OF PREVIOUS AUDITS

N/A

3.0 RESULTS OF AUDIT

3.1 Documents Audited

The audit consisted of going over AREVA responses submitted to staff RAIs, supporting system design information, calculations included in RAI responses, and assumptions and parameters used in computer code calculations also described in RAI responses. The proprietary calculation package is entitled: U.S. EPR Particulate Radiation Monitor Sensitivity Requirements for RCS Leakage (Document No. 32-7001512-000, Rev. 14, 4/13/2009). This information and materials necessary to support the audit are contained in the SER (identified as open items), in RAI responses submitted to the NRC, and notes generated by the staff during its technical review. Attachment A to this report presents the listing of Open Items and staff interim notes which were used as topics of discussion during the audit. The documents that were used as points of discussion during the audit were the draft and final AREVA responses to RAIs identified in Attachment A. AREVA staff presented technical details using internal documents in both final and draft forms to address specific discussion topics. No documents were submitted to NRC staff by AREVA staff during the audit.

3.2 Interaction with AREVA Staff

Besides the conduct of this audit, no other meetings concerning the audited materials were held with AREVA staff at the Rockville, Maryland, facility. Because the audit process was similar to that of previous audits, no formal entrance or exit briefings were held.

3.3 Issue Resolution

As a result of the audit, the staff identified various issues with information already provided in current AREVA responses to NRC staff RAIs, clarified information already contained in RAI responses as well as that contained in FSAR Chapter 11 of the U.S. EPR, and information useful for the staff in completing its technical evaluation of open RAIs. In ensuring that the docketed material supporting the U.S. EPR DC application is complete, the staff will prepare supplemental RAIs using results of staff technical reviews completed to date, and clarifications provided during the conduct of this audit. The staff will refer to the FSAR, RAI responses, and this report, but not to the draft and final documents viewed at AREVA's site, in its safety evaluation of the U.S. EPR.

3.4 Conclusions

The audit of supporting documents for the U.S. EPR Chapter 11 allowed the staff to conduct its review of the U.S. EPR FSAR more efficiently. Specifically, the staff gained a better understanding of the basis underlying the application and identified areas where additional information should be submitted to allow a licensing decision on the application.

4.0 APPLICANT STAFF PARTICIPATING IN SUBSTANTIVE DISCUSSIONS

None

Attachment A

NRC Audit of March 24, 2010 U.S. EPR FSAR Tier 2, Sections 11.2 to 11.5, Rev. 1 RAI Open Items Used as Topics for Discussion

A. FSAR Chapter 11.2:

RAI 273, Supp. 1, Q11.02-5
RAI 273, Supp. 1, Q11.02-14
RAI 273, Supp. 1, Q11.02-15
RAI 299, Q11.02-16
RAI 299, Q11.02-16
RAI 299, Q11.02-16j
RAI 299, Q11.02-16. Items 11.02-16.b, 16.e, and 16.i are now confirmatory items).
RAI 301, Q11.02-17
RAI 359, Q11.02-18 - Response is pending from applicant.

B. FSAR Chapter 11.3:

RAI 273, Supp. 1, Q11.03-12
RAI 273, Supp. 1, Q11.03-1
RAI 299, Q11.03-14
RAI 301, Q11.03-15

C. FSAR Chapter 11.4:

RAI 273, Supp. 1, Q11.04-8
RAI 273, Supp. 1, Q11.04-10 Open pending staff review with resolution of RAI 11.02-15.
RAI 273, Q11.04-11
RAI 273, Q11.04-12. Confirmatory since issuance of draft SER.
RAI 273, Q11.04-13. Confirmatory since issuance of draft SER.
RAI 273, Supp. 1, Q11.04-15

D. FSAR Chapter 11.5:

RAI 273, Q 11.05-1
RAI 273, Q11.05-2
RAI 276, Supp. 2, Q11.05-13
RAI 276, Supp. 1, Q11.05-14
RAI 290, Supp. 2, Q11.05-15

RAI 276, Q11.05-20. Response pending from applicant.