

Request for Additional Information No. 52 (950), Revision 0

8/15/2008

U. S. EPR Standard Design Certification

AREVA NP Inc.

Docket No. 52-020

SRP Section: 03.09.02 - Dynamic Testing and Analysis of Systems Structures and Components

Application Section: 3.9.2.2

EMB2 Branch

QUESTIONS

03.09.02-1

In EPR FSAR, Tier 2, Section 3.9.3, AREVA incorporates by reference the Topical Report (identified as Reference 2), ANP-10264NP, "U.S. EPR Piping Analysis and Pipe Support Design Topical Report," AREVA NP Inc., September 2006, Rev. 0. Based on a previous safety evaluation report issued by NRC on the Topical Report, with all comments resolved, AREVA should properly revise the reference (i.e., Rev. 1) of the Topical Report in the application.

03.09.02-2

In EPR FSAR Tier 2, Section 3A.2.4.4, AREVA states that the methods for the seismic analysis of HVAC ductwork and supports are provided in FSAR Tier 2, Section 3.7. Similar statement is also made in Section 3A.3.6 for cable tray, conduit, and supports. The staff found the above description for the seismic analysis methodology to be too general. The staff requests AREVA to provide on an item by item basis all the pertinent methods and criteria that are presented in FSAR Tier 2, Section 3.7, for the seismic analysis of HVAC ductwork and cable tray, conduit, and their supports.

03.09.02-3

For the references provided in Section 3A.4, confirm that all the codes and standards (including the editions) have been approved by NRC for the use on the design analysis of HVAC ductwork and cable tray, conduit, and their supports.

03.09.02-4

EPR FSAR Tier 2, Tables 3A-1 and 3A-2, list the loading combinations for the HVAC ductwork and the HVAC supports, respectively. The staff requests AREVA to explain why loading and loading combinations for Service Levels B are not required. For Service Level D, explain why it is not required unless a design pressure differential (DPD) load is applicable. Discuss what would be the required loadings and loading combinations to be considered with DPD. The staff also requests AREVA to discuss the methods of combining the dynamic loads (including seismic loads), and the bases of the combinations.

03.09.02-5

In EPR FSAR Section 3A.2.4.1, AREVA states that the combined membrane and bending stress for Service Level A does not exceed $1.5 \times 0.6 F_y$. AREVA also states that the combined membrane and bending stress for Service Level C does not exceed $0.9 F_y$. Explain why the same stress criteria are specified for Service Level A and Service Level C loading conditions.

03.09.02-6

For HVAC ductwork and cable trays supported in different buildings, discuss the design analysis provisions for differential motions experienced by the component supports. Discuss how the provisions meet the guidance of SRP 3.9.2.