Request for Additional Information No. 41, Revision 0

7/30/2008

U. S. EPR Standard Design Certification
AREVA NP Inc.
Docket No. 52-020
SRP Section: 05.02.01.01 - Compliance With the Codes and Standards Rule, 10 CFR 50.55a
SRP Section: 05.02.01.02 - Applicable Code Cases
Application Section: FSAR Ch 5
CIB1 Branch

Question 05.02.01.01-1:

Clarify the statement in the EPR FSAR that the Combined License (COL) applicant will identify subsequent ASME Code editions or addenda that may be used and will determine the consistency of the EPR design with construction practices.

Section 5.2.1.1, "Compliance with 10 CFR 50.55a," in the EPR FSAR Tier 2 states that the code of record for the design of the U.S. EPR is the 2004 edition of the ASME *Boiler & Pressure Vessel Code* (BPV Code), which the NRC is considering for incorporation by reference in the regulations. EPR FSAR Tier 2 Section 5.2.1.1 then states that a COL applicant that references the U.S. EPR design certification will identify subsequent ASME Code editions or addenda that may be used and will determine the consistency of the EPR design with construction practices (including inspection and examination methods) reflected within the subsequent code editions and addenda identified in the COL application. NRC Standard Review Plan (SRP) Section 5.2.1.1, "Compliance with the Codes and Standards Rule, 10 CFR 50.55a," states that the NRC staff review will consider compliance of components with 10 CFR 50.55a, and will evaluate where alternatives are proposed. AREVA is requested to clarify the need for the COL applicant to obtain NRC approval of the use of ASME Code editions or addenda other than the code of record for the EPR design certification.

Response to Question 05.02.01.01-1:

AREVA NP will delete the Combined License (COL) information item in U.S. EPR FSAR Tier 2 Section 5.2.1.1 and FSAR Tier 2 Table 1.8-2. As noted in U.S. EPR FSAR Tier 2 Section 5.2.1.1, the code of record for the design of the U.S. EPR is the 2004 edition of the ASME Boiler and Pressure Vessel Code (no addenda). If a COL applicant decides to use a different code edition, the COL applicant would have to take a departure from the U.S. EPR FSAR and justify the use of the different code edition in the COL application.

FSAR Impact:

U.S. EPR FSAR Tier 2 Section 5.2.1.1 and FSAR Tier 2 Table 1.8-2 will be revised as described in the response and indicated in the enclosed markup.

Question 05.02.01.02-1:

Identify any ASME Code Cases to be used in the EPR design applicable to ASME BPV Code, Section XI, and ASME OM Code.

Section 5.2.1.2, "Compliance with Applicable Code Cases," in EPR FSAR Tier 2 discusses the use of ASME Code Cases listed in FSAR Table 5.2-1, "ASME Section III Code Cases." EPR FSAR Tier 2 Section 5.2.1.2 states that the ASME BPV Code Section XI Code Cases acceptable for use are listed in RG 1.147, "Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1." EPR FSAR Tier 2 Section 5.2.1.2 states that the ASME OM Code Cases acceptable for use are listed in RG 1.192, "Operation and Maintenance Code Case Acceptability, ASME OM Code." SRP Section 5.2.1.2, "Applicable Code Cases," indicates that the NRC staff should check the list of ASME Code Cases provided by the applicant for compliance with acceptable Code Cases in RGs 1.84, 1.147, and 1.192. AREVA is requested to identify (or have the COL applicant identify) any ASME Code Cases applicable to the ASME BPV Code, Section XI, and ASME OM Code to be used in the EPR design.

Response to Question 05.02.01.02-1:

U.S. EPR FSAR Tier 2 Section 5.2.1.2 states "ASME Section XI Code Cases acceptable for use for inservice inspection (ISI), subject to the limitations specified in 10 CFR 50.55a, are listed in RG 1.147 and described in Section 5.2.4 and Section 6.6."

U.S. EPR FSAR Tier 2 Section 5.2.4.1.6, Code Exemptions, states "No exceptions from code required examinations for Class 1 PSI or ISI are required for the U.S. EPR." U.S. EPR FSAR Tier 2 Section 5.2.4.1.8, Code Cases, states "No code cases applicable to Class 1 PSI or ISI requirements are invoked for U.S. EPR design." Additionally, U.S. EPR FSAR Tier Section 6.6 states "No exemptions to or relief from code requirements are requested, or code cases invoked, for Class 2 or Class 3 preservice or inservice inspection requirements for the U.S. EPR."

U.S. EPR FSAR Tier 2 Section 5.2.1.2 states "ASME Section OM Code Cases acceptable for use for inservice inspection (ISI), subject to the limitations specified in 10 CFR 50.55a, are listed in RG 1.192 and described in Section 3.9.6."

FSAR Impact:

The FSAR will not be changed as a result of this question.

U.S. EPR Final Safety Analysis Report Markups

Table 1.8-2—U.S. EPR Combined License Information Items
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Item No.	Description	Section	Action Required by COL Applicant	Action Required by COL Holder
3.12-1	A COL applicant that references the U.S. EPR design certification will perform a review of the impact of contributing mass of supports on the piping analysis following the final support design to confirm that the mass of the support is no more than ten percent of the mass of the adjacent pipe span.	3.12.4.2		Y
3.12-2	As indicated in Section 5.3 of topical report ANP-10264(NP), pipe and support stress analysis will be performed by the COL applicant that references the U.S. EPR design certification. If the COL applicant that references the U.S. EPR design certification chooses to use a piping analysis program other than those listed in Section 5.1 of the topical report, the COL applicant will implement a benchmark program using models specifically selected for the U.S. EPR.	3.12.4.3		Y
3.13-1	A COL applicant referencing the U.S. EPR design certification will submit the inservice inspection plan for ASME Code Class 1, Class 2, and Class 3 threaded fasteners, to the NRC prior to performing the first inspection.	3.13.2		Y
3E-1	A COL applicant that references the U.S. EPR design certification will address critical sections relevant to site-specific Seismic Category I structures.	3E	Y	
5.2-1	~~A COL applicant that references the U.S. EPR design certification will identify subsequent ASME Code editions or addenda that may be used and will determine the consistency of the U.S. EPR design with construction practices (including inspection and examination methods) reflected within the subsequent code editions and addenda identified in the COL application.~~Deleted	~~5.2.1.1~~	~~Y~~	
5.2-2	A COL applicant that references the U.S. EPR design certification will identify additional ASME code cases to be used.	5.2.1.2	Y	

05.01.01.01-1

5.2 Integrity of the Reactor Coolant Pressure Boundary

This section describes the measures employed to provide and maintain the integrity of the reactor coolant pressure boundary (RCPB) for the plant design lifetime. Consistent with the definition in 10 CFR 50.2, the U.S. EPR RCPB includes all pressure-containing components, such as pressure vessels, piping, pumps, and valves which are part of the reactor coolant system (RCS) or connected to the RCS, up to and including these:

- The outermost containment isolation valve in system piping which penetrates primary reactor containment.
- The second of two valves normally closed during normal reactor operation in system piping which does not penetrate primary reactor containment.
- The RCS safety and relief valves.

Section 3.9 presents the design transients, loading combinations, stress limits, and evaluation methods used in the design analyses of RCPB components and supports to demonstrate that RCPB integrity is maintained.

5.2.1 Compliance with Codes and Code Cases

5.2.1.1 Compliance with 10 CFR 50.55a

The RCPB components are designed and fabricated as Class 1 components in accordance with Section III of the ASME Boiler and Pressure Vessel Code (Reference 1), except for components that meet the exclusion requirements of 10 CFR 50.55a(c) which are designed and fabricated as Class 2 components. The RCPB component classification complies with the requirements of GDC 1 and 10 CFR 50.55a. Table 3.2.2-1—Classification Summary lists the RCPB components, including pressure vessels, piping, pumps, and valves, along with the applicable component codes. Other safety-related plant components are classified in accordance with RG 1.26, as specified in Section 3.2.

05.01.01.01-1

The code of record for the design of the U.S. EPR is the 2004 edition of the ASME Boiler and Pressure Vessel Code (no addenda).

~~A combined license (COL) applicant that references the U.S. EPR design certification will identify subsequent ASME Code editions or addenda that may be used and will determine the consistency of the U.S. EPR design with construction practices (including inspection and examination methods) reflected within the subsequent code editions and addenda identified in the COL application.~~

The application of Section XI of the 2004 edition of the ASME Boiler and Pressure Vessel Code to the U. S. EPR is described in Section 5.2.4 and Section 6.6 The