Request for Additional Information No. 71 (1055), Revision 0

10/15/2008

U. S. EPR Standard Design Certification
AREVA NP Inc.
Docket No. 52-020
SRP Section: 03.02.01 - Seismic Classification
Application Section: 3.2.1
EMB1 Branch

QUESTIONS

03.02.01-1

FSAR Subsection 3.2.1.1 in combination with Subsection 3.1.1.2.1 identify that safety-related SSCs are designed either to withstand the effects of natural phenomena, including the SSE, without loss of capability to perform their safety-functions, or to fail in a safe condition. GDC 2 actually applies to all important to safety SSCs and not only SSCs that are considered safety-related. As defined in 10 CFR 50 Appendix A, important to safety SSCs are those that provide reasonable assurance that the facility can be operated without undue risk to the health and safety of the public.

The applicant is requested to expand FSAR Subsections 3.2 and 3.1.1.2.1 to clarify how GDC 2 is satisfied relative to SSCs that are not identified as safety-related, but are considered important to safety and have augmented seismic requirements, such as the non-safety-related fire protection system or any SSC that is classified as Seismic Category II.

03.02.01-2

It is not clear that all structures, systems and components (SSCs) that are within scope of the FSAR and are not site-specific are included within scope of Table 3.2.2-1. Items such as the intake structure & screens, reactor vessel insulation and underground piping/tunnel do not appear to be specifically identified in Table 3.2.2-1.

The applicant is requested to include any missing items in Table 3.2.2-1 or clarify that these are considered site-specific and are the responsibility of the COL applicant with an appropriate COL item for the applicant to classify. Also, it is recommended that Table 3.2.2-1 be revised to clarify that the Table includes structures by changing the second column heading to read “Structure, System or Component Description” rather than “System or Component Description.”

03.02.01-3

The seismic classification of each SSC depends on the safety function and classification as safety-related or non-safety-related. FSAR Subsection 3.2 does not clearly define the safety function of SSCs that are important to safety, but are classified as non-safety-related. For example, certain components considered non-safety–related that are internal to the reactor vessel, or part of the control

rod drive system, accident monitoring functions, severe accident instrumentation and control and the core melt stabilization system appear to be important to safety, but are not specifically identified as safety-related and seismic category I. It is presumed that these SSCs do not perform one of the three specific safety-functions defined as safety-related, but it is not clear if these SSCs are required to be or are credited to be functional during or following a seismic event.

For those SSCs that are important to safety and are classified as non-safety-related in FSAR Table 3.2.2-1, clarify the technical basis for each non-safety-related classification and identify if the seismic classification as seismic category II or other seismic classification is consistent with the PRA assumptions.

03.02.01-4

On the basis of FSAR Table 1.9-4 and Subsection 19.1.7.5, it is understood that the RTNSS process is not applicable to the US EPR design. However, risk insights can provide useful information in determining the safety significance and seismic classification of important to safety SSCs that are either considered safety-related or non-safety-related. SECY-95-132 identified that applications for new reactors would include a list of risk-significant SSCs. The list of risk-significant SSCs that are part of the reliability assurance program could not be located in either Subsection 17.4 or Section 19 of the FSAR.

The applicant is requested to advise if the PRA or other design documents identify the safety significance of each important to safety SSC when subjected to an SSE so that the seismic classification can be evaluated based on the specific safety function. If this design information and list of risk-significant SSCs is in a topical report or other auditable form, reference the appropriate documents.

03.02.01-5

10 CFR Part 52.47 identifies that the Commission will require prior to design certification, that information normally contained in certain procurement specifications and construction and installation specifications be completed and available for audit. FSAR Tier 1 Chapter 2 includes system based design descriptions including structures. This Chapter identifies that specifications exist for components, piping and supports shown as ASME Section III. It is understood that this information is based on the information included in FSAR Tier 2 and design specifications are required for ASME Section III systems and components, but it is not clear if specifications exist for structures and non-ASME systems and components. The applicant is requested to clarify if the design information on seismic classification for all important to safety SSCs within the scope of the FSAR, including structures, is included in specifications and if this information is now available for audit.

03.02.01-6

FSAR Tier 1 Chapter 2 and FSAR Tier 2 Subsection 14.3 describe various ITAAC to confirm that systems designated as ASME Section III have been

designed and tested in accordance with Code requirements. It is not clear if there is a proposed ITAAC or DAC to address the design and testing of other systems that may be important to safety that are not constructed to ASME Section III. The applicant is requested to identify if there is an ITAAC or DAC to address the design and analysis of other important to safety systems that are not designated as ASME Section III or explain why an ITAAC or DAC is not required.

03.02.01-7

GDC 2 identifies that SSCs that are important to safety are to be designed to withstand the effects of earthquakes. Certain electrical systems that are considered risk-significant are identified in Table 3.2.2-1 as non-safety-related and NSC (non-seismic). For example, portions of the PAS, PPS, NPSS, 12UPS and AAC electrical systems are identified as having a high review level in the NRC's risk insights document that is based on the applicant's Chapter 19 information, but these systems are identified as non-safety-related and are classified as NSC.

The applicant is requested to identify the basis for the NSC classification for these potentially risk-significant and important to safety electrical systems.