

Request for Additional Information No. 97 (1296, 1357, 1389), Revision 0

10/17/2008

U. S. EPR Standard Design Certification

AREVA NP Inc.

Docket No. 52-020

SRP Section: 19 - Probabilistic Risk Assessment and Severe Accident Evaluation

Application Section: 19.1.5

QUESTIONS for PRA Licensing, Operations Support and Maintenance Branch 1 (AP1000/EPR Projects) (SPLA)

19-215

FSAR Page 19.1-110 states that "Structures and other passive components not typically included in the internal events PRA were added to the SEL." Please identify the added structures and passive components.

19-217

FSAR Page 19.1-112 states that "since the HCLPF for the SLOCA initiating event is much higher than that for LOOP," please provide the SLOCA HCLPF and its basis.

19-218

FSAR Page 19.1-113 states that "Since seismic failures leading to ATWS have capacities greater than the RLE, these are not discussed further." Please provide the calculated HCLPF value and its basis for a seismically induced ATWS event. Additionally, justify why seismically induced binding of the control rods and channel deformation are not a concern for EPR design.

19-219

Please identify the safety-related SSCs with HCLPF values less than 0.5g PGA, if there are any.

19-220

According to NUREG-1407 and ANSI/ANS-58.21-2007, the effects of seismically induced fires and the impact of inadvertent actuation of fire protection systems on safety systems should be addressed during a plant walkdown. In addition, the effects of seismically induced external flooding and internal flooding on plant safety should also be addressed during a plant walkdown. Please ensure that these assessments will be addressed in COL action item 19.1-9.

19-221

According to FSAR Figure 19.1-10, Sequence 30, why isn't main steam relief (MSR) included in Table 19.1-37?

19-222

Please provide the HCLPF values for all events and cutsets identified in FSAR Table 19.1-37. Additionally, also provide the HCLPF values for medium head safety injection (MHSI) and low head safety injection (LHSI).

19-223

EPR FSAR Page 19.1-134 indicates that RES/OERAB/S02-01 was referenced as the basis for developing the fire ignition frequencies.

However, the estimated fire frequencies in this referenced report are based upon data solely from 1993 to 1999. Frequencies based only upon this data are much too limited since more years have passed than corresponds to the 1993 to 1999 period to which this data set pertains.

Frequencies developed from the state of art PRA methodology documented in NUREG/CR-6850 use a much more extensive fire event database, and supersede those from other sources. Only fire event data which have the potential to cause damage constitute fire frequencies in this methodology. In addition, the staff noted (Page 19.1-134) that the method described in NUREG/CR-6850, which is a preferable approach, was used for three PRA fire areas (PFAs), i.e., transformer yard, MS/MFW valve room, and containment pressurizer area. Sources of information for identifying the fire sources within these fire areas included: a) plant-specific spatial database, b) general arrangement drawings, and c) fire hazard analysis.

Accordingly, the staff has determined that fire frequencies developed from RES/OERAB/S02-01 are inappropriate for this application. Please explain why using RES/OERAB/S02-01 is appropriate for developing EPR fire ignition frequencies, especially since a plant-specific spatial database, general arrangement drawings, and fire hazard analyses were used in the development of fire ignition frequencies for some of the PFAs.

19-224

FSAR Page 19.1-139, Section 19.1.5.3.2.4, first sentence should be changed to "...important contributors to the internal fire CDF."

19-225

FSAR Page 1.8-44, Table 1.8-2 and Page 19.1-151, Section 19.1.5.4 state that "A COL applicant that references the U.S. EPR design certification will perform the site-specific external event screening analysis for external events applicable to their site." This COL action item should not be limited to the screening analysis to be performed by the applicant for external events. Where applicable to the site, COL applicant should perform a site-specific external events risk analysis to search for site-specific vulnerabilities. Please modify this COL action item to address this concern.

19-226

FSAR Page 19.1-152, second bullet, should "Safeguards Building" be changed to "all Safeguard Buildings," since they house safety-related equipment and should be designated as seismic Category 1?