Draft

Request for Additional Information No. 95 (1088), Revision 0

10/6/2008

U. S. EPR Standard Design Certification
AREVA NP Inc.
Docket No. 52-020
SRP Section: 03.09.04 - Control Rod Drive Systems

Application Section: FSAR Ch. 3

QUESTIONS for EMB1 Branche

03.09.04-1

a. The control rod drive mechanism (CRDM) equipment is designed and qualified to operate in reactor vessel environment. Please provide reference(s) that document CRDM qualification to operate in RPV environment for 60 years plant life.

b. Section 3.9.4.4 of the FSAR: Confirm that for mechanical adequacy of CRDS, a prototype testing program comprised of performance, stability and endurance tests was created. Provide status and results of the prototype testing program and the range of environmental conditions that supports it.

c. Section 4.6.4 states that mechanical overheating of the CRDM causes failure of only one RCCA from inserting into the core by gravity, while other CRDMs remain functional. Please provide the technical basis that supports this DCD statement.

d. Define "Hydrostatic Test Methods" for the CRDM housing. Is "Hydrostatic Test" for the connection of rod travel housing to the latch assembly housing done as part of the system hydrostatic test?”

e. The ability of the pressure housing components to perform throughout their design life, using the criteria of an operating life of 60 years, is confirmed by the primary stress analysis report required by the ASME Code, Section III. Please provide a reference(s) to primary stress analysis report for pressure housing components ability to perform their intended functions throughout the 60 years plant life.

f. The CRDMs are designed to withstand loading combinations and loading values, and meet the primary stresses stress limits of ASME Code, Section III, Division I, Subsection NB. The analyses for the loading combinations, in conjunction with the initial testing, verifies that the actual design conforms to the design criteria and that design limits have been met. In addition to the loading requirements, the CRDMs are designed with the ability to overcome a stuck rod condition. Please provide a reference(s) to loading combination analysis, in conjunction with testing, and confirm that CRDM design conforms to its design criteria and limits.

g. The FSAR states that in addition to the prototype testing program, tests are performed on the CRDMs to verify their function. These tests verify that the insertion and withdrawal times in the stepping mode, and the drop times, meet the design requirements. Please clarify, if all CRDMs do go through the function verification test, and at what stage.