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Request for Additional Information No. 46 (481), Revision 0

8/01/2008

U. S. EPR Standard Design Certification

AREVA NP Inc.

Docket No. 52-020

SRP Section: 14.02 - Initial Plant Test Program - Design Certification and New License Applicants

Application Section: 14.2.12.12

CQVP Branch

## QUESTIONS

14.02-18

SRP 14.2 states that applicants should provide abstracts of planned tests to verify the performance capabilities. Appendix A.1.j of RG 1.68 states that the initial test program should include in its preoperational phase the testing of instrumentation and control (I&C) systems whose functions include the following:

- (1) control normal operation of the facility,
- (2) provide information and alarms in the control room to monitor the operation and status of the facility,
- (3) establish that the facility is operating within design and license limits,
- (4) permit or support the operation of engineered safety features, and
- (5) monitor and record important parameters during and following postulated accidents.

Since postulated accident assumptions are often explicitly or implicitly bounded by the design of I&C systems, operation of I&C systems over the design range should be demonstrated, and the effects of limiting malfunctions or failures should be simulated to demonstrate the adequacy of design and installation and the validity of accident analysis assumptions. In addition, tests should be conducted, as appropriate, to verify redundancy and electrical independence.

Section 14.2.12.12 of the U.S. EPR FSAR contains test abstracts related to I&C safety systems. The acceptance criteria of these systems refer to the description of the system in the specific Chapter of the U.S. EPR FSAR and/or Chapter 7. Section 7.1.1 of the U.S. EPR FSAR discusses the I&C architecture of the U.S. EPR design and refers to the Teleperm XS (TXS) platform design. Since TXS will be used in applications that include reactor protection functions and engineered safety features functions, please provide the test acceptance criteria consistent with the guidance contained in Appendix 1.j of RG 1.68 for each I&C system described in Section 14.2.12.12.