
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

APR1400 Design Certification

Korea Electric Power Corporation / Korea Hydro & Nuclear Power Co., LTD

Docket No. 52-046

RAI No.: 348-8279
SRP Section: 07.09 – Data Communication Systems
Application Section:
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Question No. 07.09-16

Identify whether there are any data communication failures that are APR1400 architecture specific.

10 CFR 50.55a(h) requires compliance to IEEE Std 603-1991. IEEE Std 603-1991, Clause 5.6.1, states, in part, "Redundant portions of a safety system provided for a safety function shall be independent of and physically separated from each other to the degree necessary to retain the capability to accomplish the safety function during and following any design basis event requiring that safety function," and Clause 5.6.3, states, in part, "The safety system design shall be such that credible failures in and consequential actions by other systems, as documented in 4.8 of the design basis, shall not prevent the safety systems from meeting the requirements of this standard." Digital I&C Interim Staff Guidance (DI&C-ISG)-04 provides guidance for meeting the communications independence requirements of IEEE Std. 603-1991, Clause 5.6.

Sections C.5.1.1, C.5.1.2, C.5.1.3, and C.5.1.4 of Technical Report APR1400-Z-J-NR-14001-P state, "The compliance of the platform is provided in Reference 12 [Common Qualified Platform Topical Report.]" for DI&C-ISG-04, Section 1, Position 12. Identify and discuss if there by any data communication failures that are APR1400 architecture specific or related to the APR1400 application (including the APR1400 software).

Response

In the design of the serial data links (SDL) between the bistable processor (BP) and the local coincidence logic (LCL), the LCL and the group controller (GC), the control element assembly position processor (CPP) and the control element assembly calculator (CEAC)/CPP, and the integrated test processors (ITPs), as stated in Section C.5.1.1, C.5.1.2, C.5.1.3, and C.5.1.4 of APR1400-Z-J-NR-14001-P, "Safety I&C System," there are no data communication failures, except those platform specific failures discussed in WCAP-16097-P-A, "Common Qualified Platform Topical Report".

Impact on DCD

There is no impact on the DCD.

Impact on PRA

There is no impact on the PRA.

Impact on Technical Specifications

There is no impact on the Technical Specifications.

Impact on Technical/Topical/Environmental Reports

There is no impact on any Technical, Topical, or Environmental Report.