

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.: 518-8654
SRP Section: 18 – Human Factors Engineering
Application Section: 18
Date of RAI Issued: 08/24/2016

Question No. 18-128

Title 10 of the Code of Federal Regulations (10CFR) Section 52.47(a)(8) requires an applicant for a design certification to provide an FSAR which includes the information necessary to demonstrate compliance with any technically relevant portions of the Three Mile Island requirements set forth in 10 CFR 50.34(f), with certain exceptions. Section 10 CFR 50.34(f)(2)(ii) requires an applicant to "Establish a program, to begin during construction and follow into operation, for integrating and expanding current efforts to improve plant procedures. The scope of the program shall include.....human factors engineering..." The current NRC guidance for developing a human factors engineering (HFE) program is NUREG-0711, Rev 3, "Human Factors Engineering Program Review Model." The applicant stated in the FSAR, Tier 2, Chapter 18 "Human Factors Engineering," that it was working in accordance with the criteria of NUREG-0711 in establishing its HFE program. This regulatory basis applies to all questions in this Request for Additional Information (RAI).

NUREG-0711, Criterion 8.4.4.2(15), "Computer-Based Procedure Platform," states that the applicant's computer-based procedures should be consistent with the design review guidance in NUREG-0700, Section 8, and DI&C-ISG-5, "Highly-Integrated Control Rooms - Human Factors issues (HICR - HF)," Section 1 (NRC, 2008).

Item #22 of DI&C-ISG-5 states, "The computer-based procedure system should not change the approved procedure." The response to RAI 383-8458, Question 18-105 (ADAMS Accession No. ML16142A045) states, "CBP consists of Editor, CP, and Executor. Editor is a tool to write CP. Executor is a tool to execute CP, which is written by Editor. Executor does not have the capability to change a CP."

Please state whether Editor can change a procedure after it has been approved. If Editor can change the procedure, please explain how Item #22 is satisfied.

Response

The CP(Computerized procedure) editor is installed on a separated secured development location and is not linked with the data communication network-information (DCN-I). The CBP(Computer based procedure) server and client is linked with the DCN-I. The CBP server and client have no function to change the approved CP.

A CP written by the editor is reviewed and approved according to the PGP (procedure generating package). The approved CP is stored in the procedure repository in a separated secured development location. A CP in the procedure repository is manually copied to the CBP server. The CBP server stores approved CPs and distributes CPs when requested by CBP clients. The configuration of CPs in procedure repository and CPs in the CBP server is managed according to the plant's configuration management program.

Therefore, The CBP server and client cannot change the approved procedure as required by Item #22 of DI&C-ISG-5.

Impact on DCD

There is no impact on the PRA.

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 the Technical/Topical/environmental Reports.