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## 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.: 374-8481  
SRP Section: 18 – Human Factors Engineering  
Application Section:  
Date of RAI Issue: 01/22/2016

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### **Question No. 18-100**

NUREG-0711, Criterion 8.4.4.1(6), states in part that for the local control stations, the applicant's HFE design should consider the ambient environment (e.g., noise, temperature, contamination) and the need for and type of protective clothing.

APR1400-E-I-NR-14004-P, Rev. 0, "Task Analysis Implementation Plan" (TA IP), Section 4.2.1, "Task Narratives," provides guidance for the SMEs to identify protective clothing that may be required during task performance. The HD IP, Section 4.2.9, "Local Control Stations" (LCS), Item 2b, identifies how some input from task analysis is used in the HSI design process for LCSs, and Item 1a identifies a starting point for the LCS design. However, it's not clear to the staff how these items in the HD IP, Section 4.2.9 will ensure that the need for protective clothing is considered in the design of LCSs used for important human actions (IHAs).

Please clarify how the need for and type of protective clothing will be considered for tasks associated with IHAs at LCSs.

### **Response**

Section 4.2.1, "Task Narrative," Item 19 of the Task Analysis Implementation Plan (TA IP) will be revised to state the following:

19. Support: Task support requirements, such as drawings, documents, special tools, protective clothing and job aides. If protective clothing is required, specify the type of protective clothing, since this is an important consideration for the HSI design. For example, conventional controls and touch screens would need to accommodate protective gloves, if applicable.

Section 4.2.9, "Local Control Stations and Facilities," Item 2 of the HSI Design IP will be revised to state the following:

2. Inputs from previous APR1400 HFE PEs
    - a. The TIHA defines HSI characteristics for any IHAs that are taken from the LCS
    - b. The TA defines HSI inventory requirements and task support requirements, including the need for protective clothing, for tasks requiring local control. Protective clothing, such as gloves, are accommodated in the HSI design.
    - c. The S&Q defines staffing for personnel normally residing outside MCR
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**Impact on DCD**

There is no impact on the DCD.

**Impact on PRA**

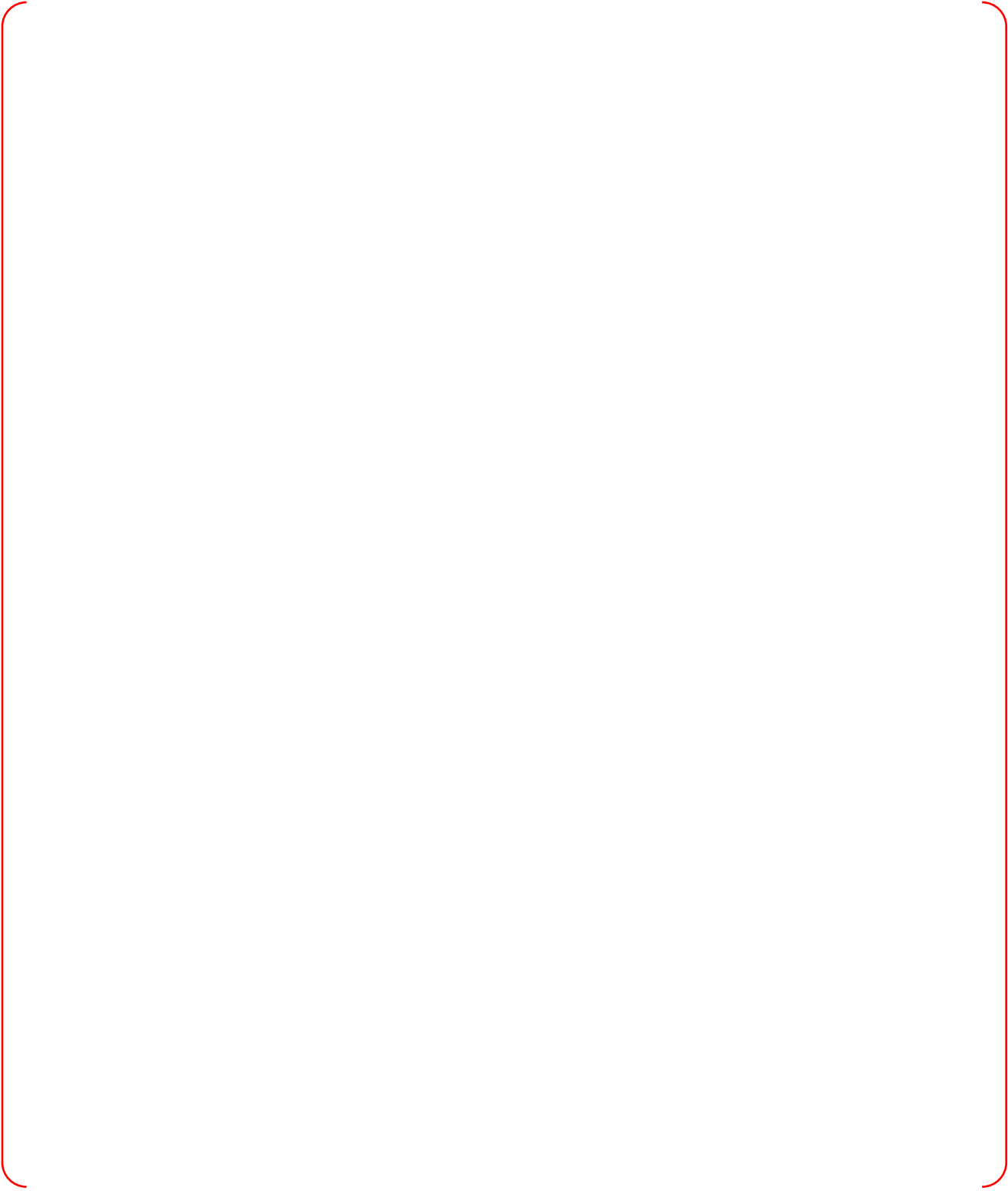
There is no impact on the PRA.

**Impact on Technical Specifications**

There is no impact on the Technical Specifications.

**Impact on Technical/Topical/Environmental Reports**

Technical report APR1400-E-I-NR-14004-NP, Rev.0, "Task Analysis Implementation Plan," Section 4.2.1 and technical report APR1400-E-I-NR-14007-NP, Rev.0, "HSI Design Implementation Plan," Section 4.2.9 will be revised, as indicated in the attachment associated with this response.



4.2.2. Human-System Interface Inventory



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**4.2.9 Local Control Stations and Facilities**

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