



**KHNP**

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March 14, 2018  
Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

Attention: Mr. William Ward  
Division of New Reactor Licensing

Docket No. 52-046  
MKD/NW-18-0037L

**Subject: Submittal of Revised Technical Reports on HFE and SAA**

**Reference: KHNP Letter MKD/NW-17-0071L, Submittal of Revised Technical Reports for APR1400, dated March 17, 2014**

The purpose of this letter is to transmit eleven (11) sets of revised technical reports regarding human factors engineering (HFE) design and severe accident analysis (SAA) for APR1400 Design Certification. The prior versions of them had been submitted under the Reference. All the responses to relevant RAIs, officially transmitted before December 31, 2017, have been incorporated into these revised reports.

Enclosure 1 contains a copy of the associated affidavit. Enclosures 2 to 23 provide electronic copies of either proprietary or non-proprietary version of each set of the revised technical reports.

If additional information or clarification required, please contact Daegeun Ahn, Director of KHNP Washington DC Center, at [ahn.daegeun@khnp.co.kr](mailto:ahn.daegeun@khnp.co.kr) or 703-388-0592.

Sincerely,

Han-gon Kim  
Project Manager  
Advanced Reactors Development Laboratory  
Korea Hydro and Nuclear Power Co., Ltd

Enclosures:

1. Affidavit KAW-18-0037
2. Human Factors Engineering Program Plan (Proprietary) (APR1400-E-I-NR-14001-P, Rev.2)
3. Human Factors Engineering Program Plan (Non-Proprietary) (APR1400-E-I-NR-14001-NP, Rev.2)
4. Operating Experience Review Implementation Plan (Proprietary) (APR1400-E-I-NR-14002-P, Rev.2)
5. Operating Experience Review Implementation Plan (Non-Proprietary) (APR1400-E-I-NR-

14002-NP, Rev.2)

6. Functional Requirements Analysis and Function Allocation Implementation Plan (Proprietary) (APR1400-E-I-NR-14003-P, Rev.2)
7. Functional Requirements Analysis and Function Allocation Implementation Plan (Non-Proprietary) (APR1400-E-I-NR-14003-NP, Rev.2)
8. Task Analysis Implementation Plan (Proprietary) (APR1400-E-I-NR-14004-P, Rev.2)
9. Task Analysis Implementation Plan (Non-Proprietary) (APR1400-E-I-NR-14004-NP, Rev.2)
10. Treatment of Important Human Actions Implementation Plan (Proprietary) (APR1400-E-I-NR-14006-P, Rev.2)
11. Treatment of Important Human Actions Implementation Plan (Non-Proprietary) (APR1400-E-I-NR-14006-NP, Rev.2)
12. Human-System Interface Design Implementation Plan (Proprietary) (APR1400-E-I-NR-14007-P, Rev.2)
13. Human-System Interface Design Implementation Plan (Non-Proprietary) (APR1400-E-I-NR-14007-NP, Rev.2)
14. Human Factors Verification and Validation Implementation Plan (Proprietary) (APR1400-E-I-NR-14008-P, Rev.2)
15. Human Factors Verification and Validation Implementation Plan (Non-Proprietary) (APR1400-E-I-NR-14008-NP, Rev.2)
16. Human Factors Verification and Validation Scenarios (Proprietary) (APR1400-E-I-NR-14010-P, Rev.2)
17. Human Factors Verification and Validation Scenarios (Non-Proprietary) (APR1400-E-I-NR-14010-NP, Rev.2)
18. Basic Human-System Interface (Proprietary) (APR1400-E-I-NR-14011-P, Rev.2)
19. Basic Human-System Interface (Non-Proprietary) (APR1400-E-I-NR-14011-NP, Rev.2)
20. Style Guide (Proprietary) (APR1400-E-I-NR-14012-P, Rev.2)
21. Style Guide (Non-Proprietary) (APR1400-E-I-NR-14012-NP, Rev.2)
22. Severe Accident Analysis Report (Proprietary) (APR1400-E-P-NR-14003-P, Rev.2)
23. Severe Accident Analysis Report (Non-Proprietary) (APR1400-E-P-NR-14003-NP, Rev.2)

## Enclosure 1

### Affidavit KAW-18-0037

I, Yun-ho Kim, state the following:

1. I am the General Manager of Korea Hydro & Nuclear Power Co., Ltd. (KHNP), and as such I am authorized to request withholding the information transmitted with this letter from public disclosure and to execute this affidavit.
2. I am familiar with the criteria applied by KHNP to determine whether certain information is proprietary, and with the policies established by KHNP to ensure the proper application of these criteria.
3. The information, APR1400-E-I-NR-14001-P, APR1400-E-I-NR-14002-P, APR1400-E-I-NR-14003-P, APR1400-E-I-NR-14004-P, APR1400-E-I-NR-14006-P, APR1400-E-I-NR-14007-P, APR1400-E-I-NR-14008-P, APR1400-E-I-NR-14010-P, APR1400-E-I-NR-14011-P, APR1400-E-I-NR-14012-P, and APR1400-E-P-NR-14003-P, transmitted with this letter has been classified by KHNP as proprietary in accordance with the policies for the control and protection of proprietary and confidential information. The information regarded as proprietary is identified and marked consistent with the requirements of 10 CFR 2.390, § (b)(1)(i). Accordingly, the proprietary information is enclosed within brackets and the right-hand bracket carries a notation of “TS” to indicate that the trade secret nature of the information claimed to be proprietary is the basis for proposing that the information so identified be withheld from public disclosure.
4. Pursuant to the considerations set forth in 10 CFR Section 2.390(a), KHNP considers the information classified as proprietary to be “trade secret” information since it is design, analysis, or test information that would be difficult for a competitor to reproduce and hence provides an economic and competitive advantage to KHNP.
5. The need for designating the information as proprietary has been raised within KHNP. The information is being treated proprietary and confidential and has not been disclosed by KHNP to the public.
6. Nondisclosure of the proprietary information transmitted with this letter is vital to the competitiveness held by KHNP and, hence, disclosure of the proprietary information transmitted in with this letter would have negative commercial impacts on the competitive position of KHNP in the U.S. nuclear market.
7. In accordance with KHNP policy, proprietary information contained in this document may be, or may have been, made available on a limited basis to regulatory bodies,



customers, potential customers, and their agents, suppliers, and licensees, and others under suitable agreements providing for nondisclosure and limited use of the information.

I declare that the foregoing statements are true and correct to the best of my knowledge, information and belief.

Executed on March 14, 2018

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Yun-ho Kim  
General Manager  
APR1400 Licensing Team  
Central Research Institute  
Korea Hydro and Nuclear Power Co., Ltd

**Enclosure 2**

APR1400-E-I-NR-14001-P, Rev.2

Human Factors Engineering Program Plan

(Proprietary)

**Enclosure 3**

APR1400-E-I-NR-14001-NP, Rev.2

Human Factors Engineering Program Plan

(Non-proprietary)

**Enclosure 4**

APR1400-E-I-NR-14002-P, Rev.2

Operating Experience Review Implementation Plan

(Proprietary)

**Enclosure 5**

APR1400-E-I-NR-14002-NP, Rev.2

Operating Experience Review Implementation Plan

(Non-proprietary)



## **Enclosure 6**

APR1400-E-I-NR-14003-P, Rev.2

Functional Requirements Analysis and Function Allocation  
Implementation Plan

(Proprietary)

**Enclosure 7**

APR1400-E-I-NR-14003-NP, Rev.2

Functional Requirements Analysis and Function Allocation  
Implementation Plan

(Non-proprietary)

**Enclosure 8**

APR1400-E-I-NR-14004-P, Rev.2

Task Analysis Implementation Plan

(Proprietary)

**Enclosure 9**

APR1400-E-I-NR-14004-NP, Rev.2

Task Analysis Implementation Plan

(Non-proprietary)

**Enclosure 10**

APR1400-E-I-NR-14006-P, Rev.2

Treatment of Important Human Actions Implementation Plan

(Proprietary)

**Enclosure 11**

APR1400-E-I-NR-14006-NP, Rev.2

Treatment of Important Human Actions Implementation Plan

(Non-proprietary)

**Enclosure 12**

APR1400-E-I-NR-14007-P, Rev.2

Human-System Interface Design Implementation Plan

(Proprietary)

## **Enclosure 13**

APR1400-E-I-NR-14007-NP, Rev.2

Human-System Interface Design Implementation Plan

(Non-proprietary)



## **Enclosure 14**

APR1400-E-I-NR-14008-P, Rev.2

Human Factors Verification and Validation Implementation Plan

(Proprietary)

## **Enclosure 15**

APR1400-E-I-NR-14008-NP, Rev.2

Human Factors Verification and Validation Implementation Plan

(Non-proprietary)

**Enclosure 16**

APR1400-E-I-NR-14010-P, Rev.2

Human Factors Verification and Validation Scenarios

(Proprietary)

## **Enclosure 17**

APR1400-E-I-NR-14010-NP, Rev.2

Human Factors Verification and Validation Scenarios

(Non-proprietary)

**Enclosure 18**

APR1400-E-I-NR-14011-P, Rev.2

Basic Human-System Interface

(Proprietary)

**Enclosure 19**

APR1400-E-I-NR-14011-NP, Rev.2

Basic Human-System Interface

(Non-proprietary)

**Enclosure 20**

APR1400-E-I-NR-14012-P, Rev.2

Style Guide

(Proprietary)

**Enclosure 21**

APR1400-E-I-NR-14012-NP, Rev.2

Style Guide

(Non-proprietary)



**Enclosure 22**

APR1400-E-P-NR-14003-P, Rev.2

Severe Accident Analysis Report

(Proprietary)

**Enclosure 23**

APR1400-E-P-NR-14003-NP, Rev.2

Severe Accident Analysis Report

(Non-proprietary)