



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

June 5, 2018

MEMORANDUM TO: Andrea Veil, Executive Director  
Advisory Committee on Reactor Safeguards

FROM: Anna H. Bradford, Deputy Director **/RA Andy Campbell for/**  
Division of Licensing, Siting, and Environmental Analysis  
Office of New Reactors

SUBJECT: TOPICAL REPORT SAFETY EVALUATION FOR TOPICAL REPORT  
APR1400-F-A-TR-12004, "REALISTIC EVALUATION  
METHODOLOGY FOR LARGE-BREAK LOSS OF COOLANT  
ACCIDENT OF THE APR1400"

By letter dated December 23, 2014, as supplemented by letters dated March 10, 2017, and March 8, 2018, Korea Electric Power Corporation (KEPCO) and Korea Hydro & Nuclear Power Co (KHNP), Ltd. submitted an application to the U.S. Nuclear Regulatory Commission (NRC) for a design certification of the Advanced Power Reactor 1400 (APR1400) Standard Design, pursuant to Title 10 of the *Code of Federal Regulations* Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants." By letter dated January 7, 2013, KHNP submitted, for the staff's review, Topical Report APR1400-F-A-TR-12004, Revision 0, "Realistic Evaluation Methodology for Large-Break Loss of Coolant Accident of the APR1400" (Agencywide Documents Access and Management System (ADAMS) Accession No. ML130230128). Proprietary Revision 1 of the Topical Report was submitted on August 11, 2017 (ML17240A229) and Non-Proprietary Revision 1 was submitted on August 25, 2017 (ML17250A233).

The initial version of this TRSE was issued on March 23, 2018 (ML17265A104). However, on April 25, 2018 (ML18115A426), KHNP submitted a letter providing additional information related to condition (1) in the TRSE. The staff reviewed the letter and revised the TRSE to remove condition (1) and re-word condition (4), based on the additional information.

Based on our review of the application, the staff is providing the Advisory Committee on Reactor Safeguards (ACRS) its Topical Report Safety Evaluation (TRSE) with no Open Items for Topical Report APR1400-F-A-TR-12004, ([ML18156A043](#)). Unless otherwise stated in the TRSE, the staff's review was based on Revision 1 of the Topical Report. The TRSE is being provided to support a meeting of the full committee of the ACRS scheduled for June 6, 2018.

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The staff concludes that the TRSE does contain information exempt from public disclosure. However, the U.S. Nuclear Regulatory Commission will withhold the SE from public disclosure for ten business days to allow KHNP the opportunity to verify the staff's conclusion that the SE contains exempt information. Therefore, the staff requests that the ACRS withhold the SE from public disclosure unless the information can be released publicly in the ADAMS.

The staff will inform the ACRS immediately if KHNP requests that any of the information in the SE be released for public disclosure.

Docket No.: 52-046

SUBJECT: TOPICAL REPORT SAFETY EVALUATION FOR TOPICAL REPORT APR1400-F-A-TR-12004, "REALISTIC EVALUATION METHODOLOGY FOR LARGE-BREAK LOSS OF COOLANT ACCIDENT OF THE APR1400"  
 DATED: JUNE 5, 2018

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**ADAMS Accession Nos.:**

**PKG: ML18156A042**

**MEMO: ML18156A046**

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**\*via email**

**NRO-002**

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| <b>NAME</b>   | JSteckel            | CSmith               | WWard               | MMcCoppin<br>(WWard for) | ABradford<br>(ACampbell for) |
| <b>DATE</b>   | 06/4/2018           | 06/05/2018           | 06/4/2018           | 06/4/2018                | 06/5/2018                    |

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