



**UNITED STATES
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SUBJECT: REVIEW UPDATE OF THE KOREA HYDRO AND NUCLEAR POWER CO., LTD., AND KOREA ELECTRIC POWER CORPORATION APPLICATION FOR STANDARD DESIGN CERTIFICATION OF THE ADVANCED POWER REACTOR 1400

Dear Dr. Kim:

By letter dated June 2, 2015, the U.S. Nuclear Regulatory Commission (NRC) issued a schedule to Korea Hydro and Nuclear Power Co., Ltd., (KHNP) and Korea Electric Power Corporation for reviewing the Advanced Power Reactor 1400 (APR1400) Design Certification (DC) application (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15091A241). By letters dated March 7, 2016 (ML16067A165), September 27, 2016 (ML16245A847), March 21, 2017 (ML17058A100), and October 31, 2017 (ML17303B206) the NRC staff provided review updates. This letter is to inform you of the current status of the review.

KHNP and the NRC staff have made substantial progress toward completing both the remaining Phase 4 Advanced Safety Evaluation Reports (ASERs) with no Open Items and the Phase 5 Advisory Committee on Reactor Safeguards (ACRS) meeting milestones. As of the date of this letter, we have completed 10 of the planned 22 DC Chapter presentations to the ACRS subcommittee. Another four will be presented on February 21. The remaining eight have been scheduled along with the last Topical Report to be presented to the ACRS. We have also scheduled the ACRS Full Committee meetings.

However, as discussed in our letter dated October 31, 2017, the NRC had concerns regarding the technical quality, completeness, or timeliness of your submittals in several areas which potentially would affect the estimated dates for completion of Phase 4 and Phase 5. The most significant example of such issues is the updated probabilistic risk assessment (PRA). Since that letter, NRC and KHNP management and staff have discussed options to complete the review in a timely manner. One option presented by the NRC¹ was to remove the PRA-based Seismic Margins Analysis (SMA) insights from the review. This portion of the application appeared to be the most likely cause of further delays and the easiest to exclude such that the review could be completed within the 42-month schedule while still being able to determine whether there is reasonable assurance of adequate protection.

¹ E-mail from William Ward (Lead Project Manager for the APR1400 safety review) to Daegeun Ahn (Director of the KHNP Washington DC Center) dated January 11, 2018 (ML18011B064).

Mr. Ahn replied to Mr. Ward on January 16, 2018 (ML18016A332), and KHNP followed up with a letter dated January 23, 2018 (ML18023B082). In the letter, you stated that the effort to remove the SMA insights would reduce the overall time saved to a minimal amount and that KHNP would retain the SMA insights in the DC application. In addition, you committed to a new PRA review schedule to meet the overall 42-month schedule by providing the NRC with the revised SMA, including insights, and all supporting documentation and responses to Requests for Additional Information by February 14, 2018. To facilitate the new schedule, you committed to locating your SMA subject matter experts locally to rapidly and more effectively respond to NRC comments. Lastly, you acknowledged that the Phase 4 and Phase 5 milestones will need to be changed.

We appreciate the enhanced effort to assist the NRC staff in completing the PRA review. However, given the recent history regarding timely submittals in support of the PRA review, we are not certain that the original 42-month review schedule can still be maintained.

The PRA review has NRC management's full attention. We are focusing our resources and considering all our available tools to complete the review within the original 42-month schedule. As stated previously, the ability of staff to complete the overall review in a period on or as close as possible to the original 42-month schedule will be significantly affected by the acceptability of KHNP's submittals by the committed date. Therefore, the staff has revised the Phase 4 public milestone date from March 2018 to May 2018, and the Phase 5 public milestone date from June 2018 to July 2018. The Phase 6 public milestone date of September 2018 remains unchanged. KHNP must recognize the potential for additional delays to these three phases should the submittals not resolve the issues known at this time.

The NRC acknowledges KHNP's feedback that the existing guidance related to performing an SMA could be improved and the NRC will be performing a self-assessment of our guidance on SMAs, using the lessons learned in this review, upon completion of the APR1400 review.

As we have done throughout this review, the staff will continue to interact with KHNP to resolve any issues which may arise as we work to complete the review, issue the Final Safety Evaluation Report, and execute the rulemaking. If you have any questions, please contact William Ward, the Lead Project Manager for this review, at (301) 415-7038 or via e-mail at William.Ward@nrc.gov.

Sincerely,

/RA Anna Bradford for/

Frank Akstulewicz, Director
Division of New Reactor Licensing
Office of New Reactors

Docket No.: 52-046

cc: See next page

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*via email

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