

September 27, 2016

Dr. Jae Yong Lee  
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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. Lee:

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 (KEPCO) for reviewing the Advanced Power Reactor 1400 (APR1400) Design Certification (DC) application (see ADAMS Accession Number ML15041A348). By letter dated March 7, 2016 (see ML16067A165), the NRC staff provided a review update informing you of the successful completion of Phase 1 of the review, and advising you of several issues of concern that could affect completion of Phase 2 of the review by the November 2016 milestone. This letter is to inform you of the current status of the review.

The NRC staff has made significant progress towards completion of Phase 2 of the DC review. We have scheduled the Phase 3 Advisory Committee for Reactor Safeguards (ACRS) meetings on the Safety Evaluation Reports (SERs) with Open Items. As of the date of this letter, the SERs with Open Items for Chapters 2, 5, 10, and 11 of the APR1400 application have been issued to the ACRS for review.

However, as stated in our March 7, 2016, letter, and acknowledged by you in your May 23, 2016 (see ML16144A862), letter to the NRC, several unresolved technical issues had the potential to challenge the ability of KHNP to submit the information needed by the staff to complete its review and meet the established Phase 2 schedule. These issues were in the areas of radiation protection, seismic and structural analysis, fuel seismic response, and probabilistic risk assessment. While progress has been made on these and other issues and we project that we will issue about half of the Phase 2 Chapter SERs by the current Phase 2 milestone, the pace of receiving information that would resolve the existing outstanding review questions does not permit us to issue all of the Chapter SERs with Open Items by November 2016, as originally planned. As a result, the NRC staff now plans to issue each Phase 2 Chapter SER with Open Items approximately four weeks before its corresponding scheduled ACRS meeting.

The resulting staggered schedule for completion of Phase 2 SERs with Open Items results in revised milestone date for Phase 2 of March 2017, but more importantly it allows the maximum time to resolve technical issues before the ACRS meetings. The issue resolution process will continue following the completion of each Phase 2 Chapter SER to resolve the Open Items through the end of Phase 4. This strategy continues to support the overall completion goal of reviewing the APR1400 DC application within a 42-month timeframe, contingent upon timely and satisfactory resolution of the Open Items.

Looking beyond Phase 3, your schedule for resolving the fuel seismic technical concerns remains a substantial challenge to meeting the current Phase 4 milestone. In order to assure success on the current overall schedule, NRC and KHNP should meet to discuss opportunities KHNP may have to accelerate completion of the fuel testing program as well as opportunities for the staff to be more efficient in its review of the final technical materials. We continue to believe that additional KHNP and NRC management attention will be necessary to assure the timely completion of an accelerated effort to submit the end-of-life testing and seismic analysis and the focused review so that the project can remain on schedule. As we have done throughout this review, the NRC staff will continue to interact with KHNP to resolve the outstanding technical issues.

If you have any questions, please contact Jeff Ciocco, the Lead Project Manager for this review, at (301) 415-6391 or via e-mail at [Jeff.Ciocco@nrc.gov](mailto:Jeff.Ciocco@nrc.gov).

Sincerely,

*/RA/*

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

Docket No. 52-046

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Sincerely,

**/RA/**

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

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\*Sign by email

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