

September 18, 2013

PRE-APPLICANT: KOREA HYDRO AND NUCLEAR POWER CO. LTD. (KHNP)
PROJECT: APR1400 DESIGN CERTIFICATION PRE-APPLICATION
SUBJECT: SUMMARY OF THE AUGUST 12-13, 2013, PUBLIC MEETINGS WITH KOREA HYDRO AND NUCLEAR POWER CO. LTD. TO DISCUSS THE TOPICAL REPORTS, RADIATION PROTECTION, AND HUMAN FACTORS ENGINEERING

On August 12 – 13, 2013, three public meetings were held between the U.S. Nuclear Regulatory Commission (NRC or staff) and Korea Hydro and Nuclear Power Co. Ltd. (KHNP) at the NRC offices in Rockville, Maryland. The public meetings were closed to the public due to the proprietary presentation materials. The meeting notice was issued on July 31, 2013, and was documented in the Agencywide Documents Access and Management System (ADAMS) under accession number ML13212A09. The notice included the meeting agendas. The purpose of the meetings were to discuss the topical reports on the fuel design, critical heat flux correlation, fluidic device, and the large break loss-of-coolant-accident analysis methodology; and radiation protection and human factors engineering (HFE). The non-proprietary meeting presentations are publicly available in ADAMS under accession numbers ML13239A347, ML13239A350, ML13239A348, ML13239A349, ML13239A343, ML13239A346, and ML13239A345. Lists of attendees are provided in Enclosures 1, 2, and 3.

On August 12, 2013, KHNP provided informational proprietary presentations on the topical reports accepted for technical review by the NRC. KHNP also presented the improvements made to the fuel design topical report which KHNP plans to submit in September 2013. The following were the main topics that were discussed:

- PLUS7 Fuel Design for the APR1400.
- The Effect of Fuel Thermal Conductivity Degradation on APR1400 Safety Analyses.
- KCE-1 Critical Heat Flux Correlation for PLUS7 Thermal Design.
- Performance Verification of APR1400 Safety Injection Tank-Fluidic Device.
- CAREM for Large Break Loss-of-Coolant-Accident (LBLOCA) Analysis of APR1400.

The NRC and KHNP agreed on a path forward of future submittals to address the thermal conductivity degradation in the fuel design technical and topical reports.

On August 13, 2013, KHNP, in a closed proprietary public meeting, discussed responses to the NRC pre-application audit recommendations and the revisions made to the HFE program. NRC and KHNP also discussed KHNP's documentation as contained in the Design Control Document (DCD), Chapter 18, and the HFE Implementation Plans.

In a separate closed proprietary public meeting held on August 13, 2013, KHNP discussed revisions, based on the NRC pre-application audit recommendations, to the radiation program as contained in several chapters of the DCD.

KHNP

- 2 -

At the conclusion of the meetings, NRC staff stated improvements were made in radiation protection and HFE. KHNP stated they would continue to address Staff comments and improve the DCD.

Please direct any inquiries to me at 301-415-6391, or via e-mail to Jeff.Ciocco@nrc.gov.

/RA/

Jeffrey Ciocco, Lead Project Manager
Environmental Projects Branch 2
Division of New Reactor Licensing
Office of New Reactors

Project No.: 0782

Enclosures:
Lists of Attendees

cc w/enclosure: See next page

KHNP

- 2 -

At the conclusion of the meetings, NRC staff stated improvements were made in radiation protection and HFE. KHNP stated they would continue to address Staff comments and improve the DCD.

Please direct any inquiries to me at 301-415-6391, or via e-mail to Jeff.Ciocco@nrc.gov.

/RA/

Jeffrey Ciocco, Lead Project Manager
Environmental Projects Branch 2
Division of New Reactor Licensing
Office of New Reactors

Project No.: 0782

Enclosures:
Lists of Attendees

cc w/enclosure: See next page

DISTRIBUTION:

| | | |
|-------------------|------------------------|-------------|
| PUBLIC | RidsAcrsAcnwMailCenter | BOlson, NRO |
| EPB2 R/F | RidsOgcMailCenter | SLee, NRO |
| D101 | RidsNroDnrlEPB2 | |
| RidsNroLAMBrownd | WWard, NRO | |
| RidsOpaMailCenter | RidsNroDnrl | |

ADAMS Accession No.: ML13259A196

NRC-001

| | | | |
|---------------|---------------|---------------|---------------|
| OFFICE | DNRL/EPB2: PM | DNRL/EPB2: LA | DNRL/EPB2: PM |
| NAME | JCiocco | MBrown | JCiocco |
| DATE | 9/18/2013 | 9/18/2013 | 9/18/2013 |

OFFICIAL RECORD COPY

LIST OF ATTENDEES

Topical Report Closed Public Meeting with Korea Hydro and Nuclear Power Co. Ltd. (KHNP) on August 12, 2013.

| <u>NAME</u> | <u>AFFILIATION</u> |
|------------------------------|--------------------|
| 1. Jeff Ciocco | NRC |
| 2. Mark Delligatti | NRC |
| 3. Samuel Lee | NRC |
| 4. Matt Thomas | NRC |
| 5. Shanlia Lu | NRC |
| 6. Y. Gene Hsii | NRC |
| 7. Diego Saenz | NRC |
| 8. James Gilmer | NRC |
| 9. Chris Van Wert | NRC |
| 10. Sang Jong Lee | KEPCO NF |
| 11. Seung Jong Oh | KHNP |
| 12. Myung Ki Kim | KHNP |
| 13. Yun Ho Kim | KHNP |
| 14. Rob Sisk | Westinghouse |
| 15. Young Ki Jang | KEPCO NF |
| 16. Jae Hoon Jeong | KEPCO NF |
| 17. Kee Yil NAHM | KEPCO NF |
| 18. Woo Chong Chon | KEPCO NF |
| 19. Hong Jin Kim | KEPCO NF |
| 20. Oh Kwan Kim | KEPCO NF |
| 21. Kang Hoon Kim | KEPCO NF |
| 22. Tae Han Kim | KEPC E&C |
| 23. Jae Don Choi | KEPCO NF |
| 24. Suk Ho Lee | KHNP |
| 25. Joon Seok Kang | KHNP |
| 26. Harry (Hyun Seung) Chang | KHNP |
| 27. In Cheol Chu | KAERI |

LIST OF ATTENDEES

Radiation Protection Closed Public Meeting with Korea Hydro and Nuclear Power Co. Ltd. (KHNP) on August 13, 2013.

| <u>NAME</u> | <u>AFFILIATION</u> |
|---------------------|---------------------|
| 1. Jeff Ciocco | NRC |
| 2. Samuel Lee | NRC |
| 3. Ron LaVera | NRC |
| 4. Ed Stutzcage | NRC |
| 5. Steve Williams | NRC |
| 6. Zachary Gran | NRC |
| 7. Donald Palmrose | NRC |
| 8. Myung Ki Kim | KHNP |
| 9. Yun Ho Kim | KHNP |
| 10. Tae Han Kim | KEPCO E&C |
| 11. Myeong Hoon Lee | KEPCO E&C |
| 12. Ki Hyung Kim | KEPCO E&C |
| 13. Irving Tsang | Consultant (DCRADS) |
| 14. Sang Ho Kang | KEPCO E&C |
| 15. Sang Yeol Kang | KEPCO E&C |
| 16. Hee Geun Kim | KHNP |

LIST OF ATTENDEES

Human Factors Engineering Closed Public Meeting with Korea Hydro and Nuclear Power Co. Ltd. (KHNP) on August 13, 2013.

| <u>NAME</u> | <u>AFFILIATION</u> |
|----------------------|--------------------|
| 1. William Ward | NRC |
| 2. Jacqwan Walker | NRC |
| 3. Jim Bongarra | NRC |
| 4. Brian Green | NRC |
| 5. Paul Pieringer | NRC |
| 6. Samuel Lee | NRC |
| 7. Robert Hall | RTS/KHNP/KEPCO |
| 8. Ho Khan Hwang | KEPCO E&C |
| 9. Seung Jong Oh | KHNP |
| 10. Eung Se Oh | KHNP |
| 11. Jin Ku Kim | KEPCO E&C |
| 12. Seong Hwan Hwang | KEPCO E&C |
| 13. Suk Ho Lee | KHNP |
| 14. Jae Hyuk Park | KEPC E&C |

KHNP Mailing List

6/28/2013

Harry (Hyun Seung) Chang
Senior Manager
KHNP Washington DC Center
8100 Boone Blvd, Suite 620
Vienna, VA 22182

Myung-Ki Kim
Project Manager
APR1400 Design Certification
Korea Hydro and Nuclear Power Co.
70-1312-gil, Yuseong-daero, Yuseong-gu,
Daejeon, 305-343, Korea

Jung-Ho Kim
Senior Manager
Technology Policy & Planning Dept.
KHNP Headquarters
512 Yeongdong-daero Gangnam-gu
Seoul, 135-791, Korea

Yun Ho Kim
Director
KHNP Washington DC Center
8100 Boone Blvd, Suite 620
Vienna, VA 22182

Email

kimmk89@khnp.co.kr [Myung-Ki Kim]
jhi6118@khnp.co.kr [Hae-In Jeong]
sj.oh@kings.ac.kr [Seung J Oh]
dhsmf@khnp.co.kr [Do-Hwan Lee]
hchang@khnp.co.kr [Harry (Hyun Seung) Chang]
nuclearjho@khnp.co.kr [Jung-Ho Kim]
yunhokim@khnp.co.kr [Yun-Ho Kim]