

**Regulatory Audit Plan for
Environmental Report APR1400-K-X-ER-14001-NP, "Applicant's Environmental Report -
Standard Design Certification," and Related Technical Reports**

September 9, 2015 - September 30, 2015

**Korea Hydro and Nuclear Power, Ltd
Docket No. 52-046**

Location: Westinghouse Electric Company
11333 Woodglen Drive, Suite 202
Rockville, MD 20852

Applicant Contact: Jiyong Oh, KHNP
Harry Chang, KHNP
James Ross, AECOM

Purpose:

The purpose of the audit is for the staff to review the calculations and other supporting documentation used by Korea Hydro and Nuclear Power, Ltd (KHNP) in preparation of the environmental report (ER) and supporting technical reports. The review is intended to ensure that the input and assumptions adequately reflects the Advanced Power Reactor 1400 (APR1400) design and that assumptions made are consistent with the regulations.

The expected outcome of the audit is for the staff (1) to gain a better understanding of how the APR1400 design meets U.S. Nuclear Regulatory Commission (NRC) regulations, including margins to account for uncertainties; and (2) to develop requests for additional information in areas not adequately covered in the environmental report and related documentation which the staff will rely on to make its finding.

This audit follows the guidelines in Office of New Reactors (NRO) Office Instruction NRO-REG-108 (Revision 0), "Regulatory Audits."

Background:

By letter dated December 23, 2014, Korea Hydro and Nuclear Power Co., LTD (KHNP) submitted for U.S. Nuclear Regulatory Commission (NRC) staff review the Environmental Report APR1400-K-X-ER-14001-NP, "Applicant's Environmental Report - Standard Design Certification," (ML15006A038) and related technical reports. On March 5, 2015, the NRC accepted the design certification application for docketing of the APR1400 submitted by Korea Electric Power Corporation (KEPCO) and KHNP. The NRC staff initiated Phase A of the application design certification review of the environmental report on March 9, 2015.

Regulatory Audit Scope:

The primary scope of this audit is to review and discuss design calculations and other supporting documents that form the basis of the applicant's ER. The NRC staff must have sufficient information to ensure that environmental impacts can be documented in the NRC staff's

Enclosure

environmental assessment including Severe Accident and Severe Accident Mitigation Design Alternatives (SAMDA).

Regulatory Basis:

Staff activities will be based on NRO-REG-108 and “Standard Review Plans for Environmental Reviews for Nuclear Power Plants: Environmental Standard Review Plan for New Site/Plant Applications” (NUREG-1555, ML071690007), Sections 7.2 and 7.3.

The ER should provide an evaluation of SAMDAs for the APR1400 design. The evaluation was performed to address the potential costs and benefits of SAMDAs for the APR1400 design. Consideration of SAMDAs includes identifying a broad range of potential alternatives and then determining whether implementation of the alternative would be feasible and beneficial on a cost-risk reduction basis.

Audit Team:

The NRC Office of New Reactors staff from the Division of New Reactor Licensing (DNRL), Division of Site Safety and Environmental Analysis (DSEA), and Division of Safety Systems and Risk Assessment (DSRA) will comprise the audit team.

- Don Palmrose, Technical Reviewer, NRO/DSEA/RPAC
- Michelle Hart, Technical Reviewer, NRO/DSEA/RPAC
- Hanh Phan, Technical Reviewer, NRO/DSRA/SPRA
- Henry Wagage, Technical Reviewer, NRO/DSRA/SCVB
- Patricia Vokoun, Project Manager, NRO/DNRL/EPB

Information and Other Materials Necessary for the Audit:

The ER references which are not available to the NRC are needed.

The document, “Information Needs for the Environmental Audit Advanced Power Reactor 1400 (APR1400) Design Certification Application Review,” (ML15198A023) was previously published and provided for audit preparation. It includes a list of audit information and materials requirements.

Logistics:

The audit will consist of three parts: 1) review of the documentation placed in the electronic reading room; 2) face-to-face meeting at Westinghouse’s Rockville, Maryland office; and 3) additional teleconference meetings if needed. The staff requests that the applicant identify the primary and supporting documents prior to the audit and make it available for NRC review at least one week prior to the face-to-face meeting. The NRC requests that the documentation remain available for access until the summary report is issued.

The face-to-face audit will be scheduled for an agreed upon number of days within the September 9, 2015, through September 30, 2015, audit duration, and between 9:00 a.m. and 5:00 p.m. It will conclude with a 30 minute exit briefing prior to the each day’s end to provide the

applicant with a summary of the preliminary audit findings. The NRC staff plans an internal meeting for 30 minutes before the exit briefing to summarize the preliminary findings.

Any supporting information that addresses the issues should be made available for review in the electronic reading room, so that the face-to-face discussions can be most effective.

Deliverables:

A summary report of the audit will be prepared and issued in accordance with NRO-REG-108 (Reference 1) within 45 days following completion of the audit.

References:

1. NRO Office Instruction NRO-REG-108 (Revision 0), "Regulatory Audits."
2. Letter dated December 23, 2013, Korea Hydro & Nuclear Power Co., LTD (KHNP), submitted for U.S. Nuclear Regulatory Commission (NRC) staff review APR1400-K-X-ER-14001-NP, "Applicant's Environmental Report - Standard Design Certification." (ML15006A038).
3. "Information Needs for the Environmental Audit Advanced Power Reactor 1400 (APR1400) Design Certification Application Review" (ML15198A023).
4. "Standard Review Plans for Environmental Reviews for Nuclear Power Plants: Environmental Standard Review Plan for New Site/Plant Applications" (NUREG-1555, ML071690007).

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