

December 28, 2015

MEMORANDUM TO: Jennifer L. Dixon-Herrity, Chief
Environmental Projects Branch
Division of New Reactor Licensing
Office of New Reactors

FROM: Patricia J. Vokoun, Project Manager /RA/
Environmental Projects Branch
Division of New Reactor Licensing
Office of New Reactors

SUBJECT: SUMMARY REPORT FOR THE AUDIT RELATED TO THE
ADVANCED POWER REACTOR 1400 DESIGN CERTIFICATION
APPLICATION ENVIRONMENTAL REVIEW

A team of U.S. Nuclear Regulatory Commission (NRC) staff performed an audit of Environmental Report APR1400-K-X-ER-14001-NP, "Applicant's Environmental Report - Standard Design Certification," and related Technical Reports provided by Korea Hydro & Nuclear Power Co., LTD (KHNP) related to the Advanced Power Reactor 1400 design environmental review. The audit was conducted by NRC staff from the Office of New Reactors (NRO), Division of New Reactor Licensing, Division of Site Safety and Environmental Analysis, and Division of Safety Systems and Risk Assessment on September 9 - 30, 2015, in the electronic reading room and at the Westinghouse Electric Company's offices in Rockville, Maryland. The results of the audit are presented in enclosure. The NRC staff performed the audit in accordance with the Audit Plan (ML15239A774). The audit summary report was developed in accordance with NRO-REG-108, "*Regulatory Audits.*"

CONTACT: Patricia J. Vokoun, DNRL/EPB
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Docket No: 52-046

Enclosure:
As stated

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ADAMS ACCESSION NUMBER: ML15327A376

NRO-002

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DATE	12/07/15	12/07/15	12/16/15	12/28/15

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SUMMARY REPORT FOR THE AUDIT RELATED TO THE APR-1400 DESIGN CERTIFICATION APPLICATION ENVIRONMENTAL REVIEW

Background

A team of U.S. Nuclear Regulatory Commission (NRC) staff performed an audit of Environmental Report APR1400-K-X-ER-14001-NP, "Applicant's Environmental Report - Standard Design Certification," and Related Technical Reports provided by Korea Hydro & Nuclear Power Co., LTD (KHNP) related to the Advanced Power Reactor 1400 (APR1400) design environmental review in accordance with the Audit Plan. The audit was conducted by NRC staff from the Office of New Reactors (NRO), Division of New Reactor Licensing (DNRL), Division of Site Safety and Environmental Analysis (DSEA), and Division of Safety Systems and Risk Assessment (DSRA) during September 9 - 30, 2015, in the electronic reading room and at the Westinghouse Electric Company's (WEC) offices in Rockville, MD. The NRC staff performed the audit in accordance with the Audit Plan (ML15239A774). The audit summary report was developed in accordance with NRO-REG-108, "Regulatory Audits."

Objectives

The objectives of the audit were to determine if the input and assumptions adequately reflect the APR1400 design, if the assumptions made are consistent with the regulations, and if the applicant's information was adequately supported by documentation to allow NRC to find that the applicant meets Title 10 of the *Code of Federal Regulations* CFR, Part 51.30 and 51.31, and related rules. The NRC staff must have sufficient information to ensure that environmental impacts can be documented in the NRC staff's environmental assessment, including severe accident and severe accident mitigation design alternatives (SAMDA).

Audit Location and Dates

The audit was held at the offices of Westinghouse Electric Company, 11333 Woodglen Drive, Suite 202, Rockville, Maryland, 20852, on Thursday, September 10, 2015, from 9:00 am until 4:00pm. The audit was held in the electronic reading room on September 9, 2015, and September 11 - 30, 2015.

Audit Team Members

The NRC staff attending the audit and their areas of responsibility are as follows:

Name	Area of Responsibility
Patricia Vokoun	Environmental Project Manager, NRO/DNRL/EPB
Donald 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

Applicant Audit Team Members

The applicant's audit team members attending the audit and their affiliations were as follows:

Name	Affiliation
Rob Sisk	Westinghouse Electric Company
Ray Dremel	ENERCON
Daegeun Ahn	KHNP Washington DC Center Director
James Ross	AECOM
Ji Yong Oh	KHNP Washington DC Center
Young H. In	ENERCON
Steve Phillippi*	ENERCON

* Attendance by conference bridge line only

Documents that were Audited

The audit focused on the KHNP's supporting documentation for information found in publicly available reports, publicly available web pages, and previously issued documents such as the environmental report. KHNP also described the methodology used in their development of portions of the environmental report and related technical reports.

Audit Activities

The audit was performed in accordance with the Audit Plan (ML15239A774). The face-to-face audit began with an opening statement and safety briefing by Rob Sisk (Westinghouse). Ray Dremel then described the information that was available to the NRC audit team. Patricia Vokoun (NRC) followed this with thanks to KHNP for coordinating the logistics of the meeting and for providing the information for NRC review and discussion. Ms. Vokoun described the objectives of the audit, stated that the meeting was an early step in the environmental review process, and that follow up activities were likely to occur. The NRC audit team then introduced themselves and their areas of responsibilities.

The document, "Information Needs for the Environmental Audit Advanced Power Reactor 1400 (APR1400) Design Certification Application Review," (ML15198A023) was discussed. It includes a list of information and materials requirements needed to complete the environmental review of the application. The NRC audit team reviewed and discussed the information provided by KHNP and supporting documentation.

As the NRC audit team members concluded their activities, they were debriefed as a group by the NRC Environmental Project Manager (EPM) on their findings and assessments.

Exit Briefing

The NRC EPM called the exit briefing to order. The issue that was consistently expressed by the NRC audit team during their debriefing, and subsequently relayed to KHNP, was the need to review additional supporting information to determine if the information was adequate to ensure that environmental impacts can be documented in the NRC staff's environmental assessment. In some instances, the NRC audit team felt comfortable accepting KHNP's analysis but the NRC audit team felt more investigation was needed for the majority of the information.

Potential for Requests for Additional Information

The NRC audit team discussed issuing requests for additional information (RAI) during the audit. Depending on further assessment of supporting information, the NRC audit team may need to issue RAIs.

Open Items and Proposed Closure Paths

The primary open item from the audit is the need to have detailed responses to its Information Needs. The proposed closure path is for KHNP to provide a detailed plan of how and when it intends to provide the detailed information alluded to in the information needs, and to provide the information on the docket according to the schedule therein.

Deviations from the Audit Plan

There were no deviations from the audit plan