
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

APR1400 Design Certification

Korea Electric Power Corporation / Korea Hydro & Nuclear Power Co., LTD

Docket No. 52-046

RAI No.: 262-8296
SRP Section: 11.05 Process and Effluent Radiological Monitoring Instrumentation and Sampling Systems
Application Section:
Date of RAI Issue: 10/22/2015

Question No. 11.05-5

In DCD section 11.5.1.2.I, the applicant provides information concerning the offsite dose calculation manual (ODCM). In the discussion the applicant references COL item 11.5(5) when discussing the ODCM requirements. However upon review of the COL action items provided in 11.5.5 the staff finds that COL 11.5(4) discusses the ODCM. The staff requests the applicant to address the discussion pertaining to the ODCM as seen in COL 11.5(4) in the text of section 11.5 and confirm the appropriate reference of COL 11.5(5) in DCD section 11.5.1.2.I.

Please address this item and provide a markup for the proposed DCD changes.

Response

DCD Subsection 11.5.1.2.I will be revised to correct the COL item numbering. KHNP also confirms the other COL items in the text of Subsection 11.5.1.2.I are appropriately referenced.

Impact on DCD

DCD Tier 2 Section 11.5.2.I will be updated as indicated in Attachment.

Impact on PRA

There is no impact on the PRA.

Impact on Technical Specifications

There is no impact on the Technical Specifications.

Impact on Technical/Topical/Environmental Reports

There is no impact on any Technical, Topical or Environmental Report.

APR1400 DCD TIER 2

1. The COL applicant is to prepare an offsite dose calculation manual (ODCM) that contains a description of the methodology and parameters for calculation of the offsite doses for the gaseous and liquid effluents (COL 11.5 (5)). NEI 07-09A (Reference 21) is an alternative and provides a radiological and environmental monitoring program. The ODCM is to be in accordance with NRC RGs 1.109 (Reference 22), 1.111 (Reference 23), and 1.113 (Reference 24). The COL applicant is to provide analytical procedures and sensitivity for selected radio-analytical methods and type of sampling media for site-specific matter (COL 11.5 (5)).

- m. The COL applicant is to develop a radiological and environmental monitoring program in accordance with NUREG-1301 and also NUREG-0133, which describes the scope of the program, taking into account local and land use census data in identifying all potential radiation exposure pathways, associated radioactive materials present in liquid and gaseous effluent, and direct external radiation from SSC. The COL applicant is also to develop calibration procedures in accordance with NRC RG 1.33 (Reference 25) and NRC RG 4.15 (Reference 26) (COL 11.5 (6)). The COL applicant is to develop detailed location and tubing installation and provide the sampling method including the sampling time to acquire representative sampling (COL 11.5 (7)).

The RMS monitors normal and potential paths for release of radioactive materials to provide continuous indication and recording of radioactivity levels of the gaseous and liquid waste leaving the plant.

Continuous representative sampling is provided for airborne particulate and iodine radioactivity in discharge paths. The gaseous PERMSS is designed in accordance with ANSI/HPS N13.1 (Reference 27). The RMS also initiates control actions as shown in Tables 11.5-1 and 11.5-2 to control or reduce continuous effluent releases or to terminate releases.

The RMS is installed in the HVAC systems to monitor the airborne radioactivity resulting from system malfunction or misoperation, or from maintenance activities that could cause radioactivity to reach unacceptable levels. Portable airborne radiation monitors are available for use in areas where work activities or surveillance poses an unacceptable risk to plant personnel of exposure to airborne radioactive material.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

APR1400 Design Certification

Korea Electric Power Corporation / Korea Hydro & Nuclear Power Co., LTD

Docket No. 52-046

RAI No.: 262-8296
SRP Section: 11.05 – Process and Effluent Radiological Monitoring Instrumentation and Sampling System
Application Section: 11.5
Date of RAI Issue: 10/22/2015

Question No. 11.05-6

In DCD section 11.5.1.2.m, the applicant provides a discussion on the radiological and environmental monitoring program (REMP). In this discussion the applicant notes the description of COL item 11.5(7) but the staff does not find reference to COL item 11.5(9). The staff is requesting clarification in DCD section 11.5 that addresses information pertaining to the REMP and COL 11.5(9). The staff also requests that the applicant confirm the appropriate inclusion of COL items in the text of section 11.5.1.2.m.

Please address this item and provide a markup for the proposed DCD changes.

Response

DCD Subsection 11.5.1.2.m will be revised. KHNP also confirms the other COL items in the text of Subsection 11.5.1.2.m have been appropriately referenced.

Impact on DCD

DCD Tier 2 Subsection 11.5.1.2.m will be updated as indicated in Attachment.

Impact on PRA

There is no impact on the PRA.

Impact on Technical Specifications

There is no impact on the Technical Specifications.

Impact on Technical/Topical/Environmental Reports

There is no impact on any Technical, Topical or Environmental Report.

APR1400 DCD TIER 2

1. The COL applicant is to prepare an offsite dose calculation manual (ODCM) that contains a description of the methodology and parameters for calculation of the offsite doses for the gaseous and liquid effluents (COL 11.5 (5)). NEI 07-09A (Reference 21) is an alternative and provides a radiological and environmental monitoring program. The ODCM is to be in accordance with NRC RGs 1.109 (Reference 22), 1.111 (Reference 23), and 1.113 (Reference 24). The COL applicant is to provide analytical procedures and sensitivity for selected radio-analytical methods and type of sampling media for site-specific matter (COL 11.5 (5)).
- m. The COL applicant is to develop a radiological and environmental monitoring program in accordance with NUREG-1301 and also NUREG-0133, which describes the scope of the program, taking into account local and land use census data in identifying all potential radiation exposure pathways, associated radioactive materials present in liquid and gaseous effluent, and direct external radiation from SSC. The COL applicant is also to develop calibration procedures in accordance with NRC RG 1.33 (Reference 25) and NRC RG 4.15 (Reference 26) (COL 11.5 (6)). The COL applicant is to develop detailed location and tubing installation and provide the sampling method including the sampling time to acquire representative sampling (COL 11.5 (7)).

(COL 11.5(9))

The RMS monitors normal and potential paths for release of radioactive materials to provide continuous indication and recording of radioactivity levels of the gaseous and liquid waste leaving the plant.

Continuous representative sampling is provided for airborne particulate and iodine radioactivity in discharge paths. The gaseous PERMSS is designed in accordance with ANSI/HPS N13.1 (Reference 27). The RMS also initiates control actions as shown in Tables 11.5-1 and 11.5-2 to control or reduce continuous effluent releases or to terminate releases.

The RMS is installed in the HVAC systems to monitor the airborne radioactivity resulting from system malfunction or misoperation, or from maintenance activities that could cause radioactivity to reach unacceptable levels. Portable airborne radiation monitors are available for use in areas where work activities or surveillance poses an unacceptable risk to plant personnel of exposure to airborne radioactive material.