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.:	**297-8309**
SRP Section:	**19.03 – Beyond Design Basis External Event**
Application Section:	**19.03**
Date of RAI Issue:	**11/09/2015**

Question No. 19.03-5

The NRC staff requests that the APR1400 design certification applicant provide a description of the operational programs that will provide assurance of the functional capability of the pumps, valves, and dynamic restraints used in the mitigation strategies for ensuring core cooling, containment function, and spent fuel pool cooling capabilities during an extended loss of ac power event at an APR1400 nuclear power plant.

Response

COL 19.3(13) is added to address the request for providing a description of operational programs that will provide assurance of the functional capability of the pumps, valves, and dynamic restraints used in mitigation strategies, as follows:

“COL 19.3(13) – The COL applicant is to provide a description of the operational programs that will provide assurance of the functional capability of the pumps, valves, and dynamic restraints used in the mitigation strategies for ensuring core cooling, containment function, and spent fuel pool cooling capabilities during an extended loss of ac power event at an APR1400 nuclear power plant.”

DCD Section 19.03 will be revised to reflect the above.

Impact on DCD

DCD Tier 2 Table 1.8-2 and Section 19.03 will be revised as indicated in the Attachment associated with this response.

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

The above response will be incorporated into Section 6 of the TeR.

Table 1.8-2 (29 of 29)

Item No.	Description
COL 19.3(1)	The COL applicant is to perform site-specific seismic hazard evaluation and seismic risk evaluation as applicable in accordance with NTTF Recommendation 2.1 as outlined in the NRC RFI.
COL 19.3(2)	The COL applicant is to address the flood requirements for wet sites
COL 19.3(3)	The COL applicant is to develop the details for offsite resources.
COL 19.3(4)	The COL applicant is to address the details of storage location for FLEX equipment.
COL 19.3(5)	The COL applicant is to address site-specific strategies to mitigate BDBEEs as specified in the NRC Order EA-12-049.
COL 19.3(6)	The COL applicant is to address SFP level instrumentation maintenance procedure development and perform training as specified in NRC Order EA-12
COL 19.3(7)	The COL applicant is to address development of EOPs, SAMGs, and EDMGs that incorporate lessons learned from TEPCO's Fukushima Dai-Ichi nuclear power plant accident as addressed in SECY-12-0025.
COL 19.3(8)	The COL applicant is to address enhancement of the offsite communication system as specified in the NRC Request for Information pertaining to NTTF Recommendation 9.3.
COL 19.3(9)	The COL applicant is to address staffing for large-scale natural events as specified in the NRC RFI pertaining to NTTF Recommendation 9.3.
Add COL 19.3(13)	The COL applicant is to provide a description of the operational programs that will provide assurance of the functional capability of the pumps, valves, and dynamic restraints used in the mitigation strategies for ensuring core cooling, containment function, and spent fuel pool cooling capabilities during an extended loss of ac power event at an APR1400 nuclear power plant.

COL applicant is to address details of the storage location for FLEX equipment (COL 19.3(4)).

Also, the COL applicant is to address site-specific strategies to mitigate BDBEEs as specified in NRC Order EA-12-049 (COL 19.3(5)), including but not limited to the following:

a. Evaluation of site-specific external hazards

b. Determination and protection of portable equipment

c. Providing means for acquisition, staging, and installation of equipment

d. Establishing means for maintaining and testing of portable equipment

e. Establishing procedures and guidance on mitigation of BDBEEs

f. Establishing training of personnel to the developed strategies and procedures

19.3.2.4 Recommendation 7.1 – Reliable Spent Fuel Pool Instrumentation

The APR1400 employs reliable indication of the water level in the SFP capable of supporting identification of the following pool water level conditions:

a. Level that is adequate to support operation of the normal fuel pool cooling system

b. Level that is adequate to provide substantial radiation shielding for a person standing on the spent fuel pool operating deck

c. Level at which fuel remains covered and actions to implement makeup water addition should no longer be deferred

The APR1400 SFP water level instrumentation is consistent with the guidelines addressed in NRC EA-12-051, NEI 12-02 (Reference 8), and JLD-ISG-2012-03 (Reference 9).

The primary instrument channel provides level indication through the use of guided wave radar (GWR) technology using the principle of time domain reflectometry (TDR).

Lastly, The COL applicant is to provide a description of the operational programs that will provide assurance of the functional capability of the pumps, valves, and dynamic restraints used in the mitigation strategies for ensuring core cooling, containment function, and spent fuel pool cooling capabilities during an extended loss of ac power event at an APR1400 nuclear power plant (COL 19.3(13)).

COL 19.3(3) The COL applicant is to develop the details for offsite resources.

COL 19.3(4) The COL applicant is to address the details of storage location for FLEX equipment.

COL 19.3(5) The COL applicant is to address site-specific strategies to mitigate BDBEEs as specified in the NRC Order EA-12-049.

COL 19.3(6) The COL applicant is to address SFP level instrumentation maintenance procedure development and perform training as specified in NRC Order EA-12-051.

COL 19.3(7) The COL applicant is to address development of EOPs, SAMGs, and EDMGs that incorporate lessons learned from TEPCO's Fukushima Dai-Ichi nuclear power plant accident as addressed in SECY-12-0025.

COL 19.3(8) The COL applicant is to address enhancement of the offsite communication system as specified in the NRC Request for Information pertaining to NTTF Recommendation 9.3.

COL 19.3(9) The COL applicant is to address staffing for large-scale natural events as specified in the NRC RFI pertaining to NTTF Recommendation 9.3.

19.3.5 References

1. SECY-12-0025, "Proposed Orders and Requests for Information in Response to Lessons Learned from Japan's March 11, 2011, Great Tohoku Earthquake and Tsunami," U.S. Nuclear Regulatory Commission, February 2012.

2. Order EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," U.S. Nuclear Regulatory Commission, March 12, 2012.

3. Order EA-12-051, "Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation," U.S. Nuclear Regulatory Commission, March 12, 2012.

COL 19.3(13) The COL applicant is to provide a description of the operational programs that will provide assurance of the functional capability of the pumps, valves, and dynamic restraints used in the mitigation strategies for ensuring core cooling, containment function, and spent fuel pool cooling capabilities during an extended loss of ac power event at an APR1400 nuclear power plant.