
SUPPLEMENT TO THE REVISED RESPONSE TO THE REQUEST FOR ADDITIONAL INFORMATION

APR1400 Design Certification

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

Docket No. 52-046

RAI No.: 81-8000
SRP Section: 03.10 – Seismic and Dynamic Qualification of Mechanical and
Electrical Equipment
Application Section: 3.10
Date of RAI Issue: 07/16/2015

Question No. 03.10-4

SRP Section 3.10 indicates that the following mechanical and electrical equipment should be seismically qualified: equipment associated with systems that are essential to emergency reactor shutdown, containment isolation, reactor core cooling, containment and reactor heat removal or are otherwise essential in preventing significant release of radioactive material to the environment, and instrumentation that is needed to assess plant and environmental conditions during and after an accident, as described in RG 1.97.

Also covered by SRP Section 3.10 is equipment (1) that performs the above functions automatically, (2) that is used by the operators to perform these functions manually, and (3) whose failure can prevent the satisfactory accomplishment of one or more of the above safety functions.

The NRC staff recognizes that these equipment within the scope of seismic qualification may contain more than the safety-related equipment as defined in 10 CFR 50.2.

As an example, the instrumentation that is needed to assess plant and environmental conditions during and after an accident may not be included in the safety-related equipment as defined in 10 CFR 50.2.

In DCD Tier 2, Rev. 0, Section 3.10, the applicant refers to the equipment within the scope of seismic qualification as safety-related equipment. In DCD Tier 2, Rev. 0, Section 3.10.4.1, COL Item 3.10(3), the applicant refers to the equipment within the scope of seismic qualification as safety-related seismic Category I equipment.

The NRC staff requests that the applicant update the DCD to refer to the equipment included in the scope of SRP 3.10 as “seismic Category I equipment,” “equipment as defined in DCD Tier 2, Section 3.10,” or other alternative terminologies. The NRC staff also requests that the applicant

review Technical Report, APR1400-E-X-NR-14001-P, Rev. 0, Part 2 and apply the updated terminology consistently.

Response – Revision 1

DCD Table 1.8-2, Section 3.10, and Technical Report APR1400-E-X-NR-14001-P, Rev. 0, Part 2 will be updated to refer to the equipment included in the scope of SRP 3.10 as “seismic Category I equipment” since the seismic Category I is not limited only to the safety related equipment.

Supplemental Response

This supplemental response provides additional clarification to the scope of seismic Category I qualified equipment that is defined in DCD Section 3.10.

Impact on DCD

DCD Table 1.8-2 and Section 3.10 will be revised as indicated in the Attachment. (The attachment to the supplemental response only includes the additional information added to Section 3.10. All proposed changes included in Revision 1 remain applicable.)

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

Technical Report, APR 1400-E-NR-14001-P Rev.0, Part 2 will be revised as indicated in the Attachment.

APR1400 DCD TIER 2**3.10 Seismic and Dynamic Qualification of Mechanical and Electrical Equipment**

This section describes the acceptance criteria, code and standards, procedures, and methods applied to the seismic and dynamic qualification of mechanical and electrical equipment including instrumentation to provide reasonable assurance that they will withstand the effects of postulated events and accidents and still be capable of performing their safety-related functions under the full range of normal, transient, seismic, and accident loadings.

Safety-related equipment is the equipment necessary to provide reasonable assurance of the following:

- a. The integrity of the reactor coolant pressure boundary
- b. The capability to shut down the reactor and maintain it in a safe shutdown condition

Seismic Category I equipment includes

and non safety-related equipment. The seismic Category I equipment covered by this qualification section

- c. The capability to prevent or mitigate the consequences of accidents that would result in potential offsite exposure in excess of the limits stated in 10 CFR Part 100

This safety-related equipment includes equipment associated with systems that are essential to emergency reactor shutdown, containment isolation, reactor core cooling, and containment reactor heat removal; equipment essential to preventing significant release of radioactive material to the environment; and instrumentation needed to assess plant and environs conditions during and after an accident as described in NRC RG 1.97 (Reference 1).

The function of this equipment may include:

~~The safety-related equipment is identified as:~~

- a. Equipment that performs the above functions automatically
- b. Equipment that operators use to perform the above functions manually
- c. Equipment for which failure can prevent satisfactory accomplishment of one or more of the above safety functions