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## REVISED 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.: ER 1-8428  
SRP Section: Environmental Report  
Application Section: APR1400 Environmental Report  
Date of RAI Issue: 03/22/2016

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### **Question No. EIS ACC/SA-3**

10 CFR 51.55(a) requires each applicant for a standard design certification under subpart B of 10 CFR Part 52 (i.e., 10 CFR 52.47(b)(2)) to submit with its application a separate document entitled, "Applicant's Environmental Report—Standard Design Certification." The environmental report must address the costs and benefits of severe accident mitigation design alternatives, and the bases for not incorporating severe accident mitigation design alternatives in the design to be certified.

The environmental standard review plan (ESRP) Section 7.2, Severe Accidents, of NUREG 1555 directs the staff to evaluate and independently confirm severe accident risks and analyses presented in an Environmental Report (ER) (i.e., the APR1400 ER, "Applicant's Environmental Report – Standard Design Certification," found under ML15006A038 and the proprietary technical report, "Severe Accident Mitigation Design Alternatives (SAMDAs) for the APR1400," Under ML15012A105) of accidents involving radioactive material that can be postulated for the plant under review. The scope of this review should include probability-weighted consequence (i.e., risks) analysis for severe accidents, including dose and socioeconomic risk impacts based on plant specific data in sufficient detail to appropriately evaluate the risks for severe accidents.

The staff requires the following additional information in order to complete its review of the environmental impacts of severe accidents and to ensure appropriate documentation of the applicant's assessment in the APR1400 Environmental Report.

Provide a detailed explanation on how the population values for each grid element (or rosette segment) taken from SecPop2000 were extrapolated out to the year 2030. Although a process is described in Section 5.5.1, Population Distribution, on pages A21 and A22 of APR1400-E-PNR-14006-P, the staff requires additional details including the information obtained from references used for determining the 2030 year population distribution, especially given that some grid elements (or rosette segments) contain two or more county segments. In particular,

the response should provide the information obtained from References 17 and 19 of APR1400-E-P-NR-14006-P along with explaining how information from Tables 5.5.1-4 and 5.5.1-5.

The NRC staff request that any revisions to the ER or supporting technical reports be provided as a markup as part of the response to this RAI.

### **Response – (Rev.1)**

Level 3 analysis documented in Appendix A of APR1400-E-P-NR-14006-P, [Rev.1](#) was revised to clarify how population distribution projections were calculated (see [Section 5.5.1 of Appendix A](#)). [The population estimates provided by Virginia and North Carolina have changed since the initial revision of the Level 3 analysis, so new growth factors were calculated. The population estimates were simplified since SECPOP 4.3 uses 2010 Census data, where the estimates were only needed to project from 2010 to 2030.](#)

#### **Impact on DCD**

There is no impact on the DCD.

#### **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 SAMDA Report [was](#) revised as discussed above. There is no impact on [the](#) Environmental Reports.