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## SUPPLEMENTAL 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.: 188-8056  
SRP Section: 16 - Technical Specifications  
Application Section:  
Date of RAI Issue: 09/01/2015

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### **Question No. 16-58**

The generic TS Bases for Safety Limit (SL) Violation 2.2.2.2 do not include the following sentence found in the STS Bases for Safety Limit (SL) Violation 2.2.2.2, second paragraph:

As such, pressure must be reduced to less than the SL within 5 minutes.

The applicant is requested to justify this deviation from the STS Bases; this justification is needed to ensure the completeness and accuracy of the Bases for generic TS Section 2.2, SL Violations.

### **Response**

The TS Bases for Safety Limit (SL) Violation 2.2.2.2 will be modified to add the sentence that pressure must be reduced to less than the SL within 5 minutes and also to change other wording that is similar to be consistent with the STS.

### **Supplemental Response**

The TS Bases for Safety Limit (SL) Violation 2.2.1 will be deleted and also the following wording will be deleted.

“The following violation responses are applicable to Reactor Core SLs: 2.2.1”

The TS Bases for SL violation 2.2.2.1 will be modified to be consistent with the STS.

The markup included in previous response is applied in APR1400 DCD Rev.1.

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**Impact on DCD**

Same as changes described in the Impact on Technical Specification section

**Impact on PRA**

There is no impact on the PRA.

**Impact on Technical Specifications**

The TS Bases for Safety Limit (SL) Violation 2.2.1 will be [deleted](#) and the [TS Bases for SL violation 2.2.2.1](#) will be modified as indicated in the attachment.

**Impact on Technical/Topical/Environmental Reports**

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

BASES

SAFETY LIMIT VIOLATIONS

The following violation responses are applicable to Reactor Core SLs:

2.2.1

If SL 2.1.1.1 or SL 2.1.1.2 is violated, the requirement is to go to MODE 3 where these SLs are not applicable.

The allowed Completion Time of 1 hour recognizes the importance of bringing the unit to a mode of operation where the SL is not applicable and reduces the probability of fuel damage.

The following violation responses are applicable to RCS Pressure SL:

2.2.2.1

the RCS pressure SL

SL.

With RCS pressure greater than the value specified in SL 2.1.2

If SL 2.1.2 is violated when the reactor is in MODE 1 or 2, the requirement is to restore compliance and be in MODE 3 within 1 hour.

If the RCS Pressure SL is exceeded in MODE 1 or 2, the pressure must be reduced to below this value. A pressure greater than the value specified in SL 2.1.2 exceeds 110% of the RCS design pressure and can challenge system integrity.

The allowed Completion Time of 1 hour provides the operator time to complete the necessary actions to reduce RCS pressure by terminating the cause of the pressure increase, removing mass or energy from the RCS, or a combination of these actions, and to establish MODE 3 conditions.

2.2.2.2

If the RCS pressure SL is exceeded in MODE 3, 4, or 5, RCS pressure must be restored to within the SL value within 5 minutes.

Exceeding the RCS Pressure SL in MODE 3, 4, or 5 is potentially more severe than exceeding this SL in MODE 1 or 2 since the reactor vessel temperature can be lower and the vessel material, consequently, less ductile. As such, pressure must be reduced to less than the SL within 5 minutes. This action does not require reducing MODES, since this would require reducing temperature, which would compound the problem by adding thermal gradient stresses to the existing pressure stress.