

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

APR1400 Design Certification

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

Docket No. 52-046

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SRP Section: 16 - Technical Specifications
Application Section: 16
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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.

Impact on DCD

Same as changes described in the Impact on Technical Specifications section.

Impact on PRA

There is no impact on the PRA.

Impact on Technical Specifications

The TS Bases for Safety Limit (SL) Violation 2.2.2.2 will be modified as indicated in the attachment.

Impact on Technical/Topical/Environmental Reports

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

BASESSAFETY 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

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

the RCS pressure SL is exceeded

If ~~SL 2.1.2 is violated~~ in MODE 3, 4, or 5, RCS pressure must be restored to within the SL value within 5 minutes.

MODES,

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. This action does not require reducing mode since this would require reducing temperature, which would compound the problem by adding thermal gradient stresses to the existing pressure stress.

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