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.:	**189-8057**
SRP Section:	**16 – Technical Specifications**
Application Section:	**16.3.1 Reactivity Control Systems**
Date of RAI Issue:	**09/01/2015**

Question No. 16-61

Clarify an omission from the STS in Surveillance Requirement (SR) 3.1.4.1.

The text in the STS reads “Verify MTC is within the upper limit specified in the COLR.” The APR1400 text reads “Verify MTC is within the upper limit.” The phrase “specified in the COLR” is commonly used in the APR1400 text when referring to limits, which aligns the text with the STS.

The deviation report, APR1400-K-O-NR-14001-NP, states that “The actual value of the MTC is dependent on core characteristics such as fuel loading and reactor core soluble boron concentrations. Since positive MTC limits assumed in the safety analysis are not to be challenged or must be met using burnable absorbers for both initial and the reload cores, thus, those are not classified as COLR item in APR1400.” However, the LCO statement and the NOTE for SR 3.1.4.2 both refer to COLR limits.

This clarification of the SR is required to ensure the completeness of the Technical Specifications.

Response – (Rev. 1)

As described in the deviation report, the positive MTC limit is not classified as a COLR item for the APR1400, but rather the maximum positive MTC limit is given as a linear function of rated thermal power as specified in the LCO statement. Thus, the COLR is mentioned for the negative or lower MTC limit specification (3.1.4.2) only. ‘The limits’ in the LCO statement refers to the negative MTC limit in the COLR, while the positive MTC limit is specified in the LCO statement.

The Technical Specifications LCO 3.1.4 and SR 3.1.4.1 will be revised for consistency and clarity.

Impact on DCD

Same as changes described in Impact on Technical Specification section.

Impact on PRA

There is no impact on PRA.

Impact on Technical Specifications

LCO 3.1.4 and SR 3.1.4.1 will be revised as indicated in the Attachment.

Impact on Technical/Topical/Environmental Reports

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

3.1 REACTIVITY CONTROL SYSTEMS

3.1.4 Moderator Temperature Coefficient (MTC)

lower limit

LCO 3.1.4 The MTC shall be maintained within the ~~limits~~ specified in the COLR, and ~~a maximum positive~~ limit that varies linearly from 0.9 x 10^{-4} $\Delta k/k/^{\circ}C$ (0.5 x 10^{-4} $\Delta k/k/^{\circ}F$) at 0 % RTP to 0.0 $\Delta k/k/^{\circ}C$ (0.0 $\Delta k/k/^{\circ}F$) at 100 % RTP.

the upper

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. MTC not within limits.	A.1 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.4.1	Verify MTC is within the upper limit specified in LCO 3.1.4.	Prior to entering MODE 1 after each fuel loading
SR 3.1.4.2	---------- NOTE ---------- If the MTC is more negative than the COLR limit when extrapolated to the end of cycle, SR 3.1.4.2 may be repeated. Shutdown must occur prior to exceeding the minimum allowable boron concentration at which MTC is projected to exceed the lower limit. ---------- Verify MTC is within the lower limit specified in the COLR.	Each fuel cycle within 7 effective full power days (EFPD) of reaching 40 EFPD core burnup AND Each fuel cycle within 7 EFPD of reaching 2/3 of expected core burnup