

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.: 138-8067
SRP Section: 16 - Technical Specifications
Application Section: 16.3.0 LCO and SR Applicability
Date of RAI Issued: 08/07/2015

Question No. 16-36

10 CFR 50.36 requires that each operating license issued by the Commission contain technical specifications (TS) that set forth the limits, operating conditions, and other requirements imposed upon facility operation for the protection of public health and safety. 10 CFR 52.47(a)(11) provides that a design certification (DC) applicant is to propose TS prepared in accordance with 10 CFR 50.36 and 50.36a.

On July 22, 1993, the NRC issued its Final Policy Statement (58 FR 39132) on Technical Specifications improvements, expressing the view that satisfying the guidance in the policy statement also satisfies Section 182a of the Atomic Energy Act and 10 CFR 50.36. In the final policy statement, the NRC stated its “intent that the wording and Bases of the improved STS be used in the Technical Specification related submittal to the extent practicable.” Encouraging and maintaining standardization of TS requirements, such as contained in the STS, is therefore the policy of the NRC. In the final policy statement, the NRC encouraged “all licensees who submit Technical Specification related submittals based on this Policy Statement to emphasize human factors principles.”

In the next to last paragraph in the LCO 3.0.3 Bases, reference is made to LCO 3.7.15, “Spent Fuel Pool Water Level.” The reference should be to LCO 3.7.14, “Spent Fuel Pool Water Level.” Make reference correct.

Staff needs to evaluate all technical differences from standard TS (STS) NUREG-1432, STS Combustion Engineering Plants, Rev. 4, which is referenced by the DC applicant in DCD Tier 2 Section 16.1, and the docketed rationale for each difference because conformance to STS provisions is used in the safety review as the initial point of guidance for evaluating the adequacy of the generic TS to ensure adequate protection of public health and safety, and the completeness and accuracy of the generic TS Bases.

Response

The LCO 3.0.3 Bases will be corrected to reference LCO 3.7.14 rather than 3.7.15 in all appropriate places.

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 LCO 3.0.3 Bases will be corrected as indicated in the Attachment.

Impact on Technical/Topical/Environmental Reports

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

BASES

LCO 3.0.3 (continued)

- c. ACTIONS exist that do not have expired Completion Times. These Completion Times are applicable from the point in time that the Condition is initially entered and not from the time LCO 3.0.3 is exited.

The time limits of LCO 3.0.3 allow 37 hours for the unit to be in MODE 5 when a shutdown is required during MODE 1 operation. If the unit is in a lower MODE of operation when a shutdown is required, the time limit for reaching the next lower MODE applies. If a lower MODE is reached in less time than allowed, however, the total allowable time to reach MODE 5, or other applicable MODE, is not reduced. For example, if MODE 3 is reached in 2 hours, then the time allowed for reaching MODE 5 is the next 35 hours, because the total time for reaching MODE 5 is not reduced from the allowable limit of 37 hours. Therefore, if remedial measures are completed that would permit a return to MODE 1, a penalty is not incurred by having to reach a lower MODE of operation in less than the total time allowed.

In MODES 1, 2, 3, and 4, LCO 3.0.3 provides ACTIONS for Conditions not covered in other Specifications. The requirements of LCO 3.0.3 do not apply in MODES 5 and 6 because the unit is already in the most restrictive Condition required by LCO 3.0.3. The requirements of LCO 3.0.3 do not apply in other specified conditions of the Applicability (unless in MODE 1, 2, 3, or 4) because the ACTIONS of individual Specifications sufficiently define the remedial measures to be taken.

Exceptions to LCO 3.0.3 are provided in instances where requiring a unit shutdown, in accordance with LCO 3.0.3, would not provide appropriate remedial measures for the associated condition of the unit. An example of this is in LCO 3.7.15, "Spent Fuel Pool Water Level." LCO 3.7.15 has an Applicability of "During movement of irradiated fuel assemblies in the fuel storage pool." Therefore, this LCO can be applicable in any or all MODES. If the LCO and the Required Actions of LCO 3.7.15 are not met while in MODE 1, 2, or 3, there is no safety benefit to be gained by placing the unit in a shutdown condition.

The Required Action of LCO 3.7.15 of "Suspend movement of irradiated fuel assemblies in Fuel Storage Pool" is the appropriate Required Action to complete in lieu of the actions of LCO 3.0.3. These exceptions are addressed in the individual Specifications.

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.: 138-8067
SRP Section: 16 - Technical Specifications
Application Section: 16.3.0 LCO and SR Applicability
Date of RAI Issued: 08/07/2015

Question No. 16-37

10 CFR 50.36 requires that each operating license issued by the Commission contain technical specifications (TS) that set forth the limits, operating conditions, and other requirements imposed upon facility operation for the protection of public health and safety. 10 CFR 52.47(a)(11) provides that a design certification (DC) applicant is to propose TS prepared in accordance with 10 CFR 50.36 and 50.36a.

On July 22, 1993, the NRC issued its Final Policy Statement (58 FR 39132) on Technical Specifications improvements, expressing the view that satisfying the guidance in the policy statement also satisfies Section 182a of the Atomic Energy Act and 10 CFR 50.36. In the final policy statement, the NRC stated its "intent that the wording and Bases of the improved STS be used in the Technical Specification related submittal to the extent practicable." Encouraging and maintaining standardization of TS requirements, such as contained in the STS, is therefore the policy of the NRC. In the final policy statement, the NRC encouraged "all licensees who submit Technical Specification related submittals based on this Policy Statement to emphasize human factors principles."

The last sentence in the third paragraph of LCO 3.0.4 Bases states, "In addition, the provisions of LCO 3.0.4 shall not prevent changes in MODES or other specified conditions in the Applicability that result from a normal shutdown." The STS sentence states, "... that results from any shutdown." The Deviation Report, "APR1400-K-O-NR-14001-NP," does not address this difference. Justify this difference or revise the sentence to match the STS sentence.

Staff needs to evaluate all technical differences from standard TS (STS) NUREG-1432, STS Combustion Engineering Plants, Rev. 4, which is referenced by the DC applicant in DCD Tier 2 Section 16.1, and the docketed rationale for each difference because conformance to STS provisions is used in the safety review as the initial point of guidance for evaluating the

adequacy of the generic TS to ensure adequate protection of public health and safety, and the completeness and accuracy of the generic TS Bases.

Response

The LCO 3.0.4 Bases will be modified to change the wording from “a normal shutdown” to “any shutdown.”

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 LCO 3.0.4 Bases 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.

BASES

LCO 3.0.4

LCO 3.0.4 establishes limitations on changes in MODES or other specified conditions in the Applicability when an LCO is not met. It precludes placing the unit in a MODE or other specified condition stated in that Applicability (e.g., Applicability desired to be entered) when the following exist:

- a. Unit conditions are such that the requirements of the LCO would not be met in the Applicability desired to be entered; and
- b. Continued noncompliance with these LCO requirements, if the Applicability were entered, would result in the unit being required to exit the Applicability desired to be entered to comply with the Required Actions.

Compliance with Required Actions that permit continued operation of the unit for an unlimited period of time in a MODE or other specified condition provides an acceptable level of safety for continued operation. This is without regard to the status of the unit before or after the MODE change. Therefore, in such cases, entry into a MODE or other specified condition in the Applicability may be made in accordance with the provisions of the Required Actions. The provisions of this Specification should not be interpreted as endorsing the failure to exercise the good practice of restoring systems or components to OPERABLE status before entering an associated MODE or other specified condition in the Applicability. The provisions of LCO 3.0.4 shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS. In addition, the provisions of LCO 3.0.4 shall not prevent changes in MODES or other specified conditions in the Applicability that result from a normal shutdown.

any

Exceptions to LCO 3.0.4 are stated in the individual Specifications. Exceptions may apply to all the ACTIONS or to a specific Required Action of a Specification.

LCO 3.0.4 is only applicable when entering MODE 4 from MODE 5, MODE 3 from MODE 4, MODE 2 from MODE 3, or MODE 1 from MODE 2. Furthermore, LCO 3.0.4 is applicable when entering any other specified condition in the Applicability only while operating in MODE 1, 2, 3, or 4. The requirements of LCO 3.0.4 do not apply in MODES 5 and 6, or in other specified conditions of the Applicability (unless in MODE 1, 2, 3, or 4) because the ACTIONS of individual Specifications sufficiently define the remedial measures to be taken. In some cases these ACTIONS provide a Note that states "While this LCO is not met, entry into a MODE or other specified condition in the Applicability is not permitted, unless required to comply with ACTIONS." This Note is a requirement explicitly precluding entry into a MODE or other specified condition of the Applicability.

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.: 138-8067
SRP Section: 16 - Technical Specifications
Application Section: 16.3.0 LCO and SR Applicability
Date of RAI Issued: 08/07/2015

Question No. 16-38

10 CFR 50.36 requires that each operating license issued by the Commission contain technical specifications (TS) that set forth the limits, operating conditions, and other requirements imposed upon facility operation for the protection of public health and safety. 10 CFR 52.47(a)(11) provides that a design certification (DC) applicant is to propose TS prepared in accordance with 10 CFR 50.36 and 50.36a.

On July 22, 1993, the NRC issued its Final Policy Statement (58 FR 39132) on Technical Specifications improvements, expressing the view that satisfying the guidance in the policy statement also satisfies Section 182a of the Atomic Energy Act and 10 CFR 50.36. In the final policy statement, the NRC stated its “intent that the wording and Bases of the improved STS be used in the Technical Specification related submittal to the extent practicable.” Encouraging and maintaining standardization of TS requirements, such as contained in the STS, is therefore the policy of the NRC. In the final policy statement, the NRC encouraged “all licensees who submit Technical Specification related submittals based on this Policy Statement to emphasize human factors principles.”

The LCO 3.0.5 Bases refers in several locations to the performance of “SRs,” while those places in the STS LCO 3.0.5 Bases refer to the performance of “required testing.” The Deviation Report, “APR1400-K-O-NR-14001-NP,” does not address this difference. Justify this difference or use the STS phrase instead.

Staff needs to evaluate all technical differences from standard TS (STS) NUREG-1432, STS Combustion Engineering Plants, Rev. 4, which is referenced by the DC applicant in DCD Tier 2 Section 16.1, and the docketed rationale for each difference because conformance to STS provisions is used in the safety review as the initial point of guidance for evaluating the adequacy of the generic TS to ensure adequate protection of public health and safety, and the completeness and accuracy of the generic TS Bases.

Response

The LCO 3.0.5 Bases will be modified to change the wording from performance of “SRs” to “required testing” and to make other editorial changes to be consistent with the STS 3.0.5 Bases.

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 LCO 3.0.5 Bases 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.

BASES

LCO 3.0.4 (continued)

Surveillances do not have to be performed on the associated inoperable equipment (or on variables outside the specified limits), as permitted by SR 3.0.1. Therefore, changing MODES or other specified conditions while in an ACTIONS Condition, in compliance with LCO 3.0.4 or where an exception to LCO 3.0.4 is stated, is not a violation of SR 3.0.1 or SR 3.0.4 for those Surveillances that do not have to be performed due to the associated inoperable equipment. However, SRs must be met to ensure OPERABILITY prior to declaring the associated equipment OPERABLE (or variable within limits) and restoring compliance with the affected LCO.

LCO 3.0.5

LCO 3.0.5 establishes the allowance for restoring equipment to service under administrative controls when it has been removed from service or declared inoperable to comply with ACTIONS. The sole purpose of this Specification is to provide an exception to LCO 3.0.2 (e.g., to not comply with the applicable Required Action(s)) to allow the performance of SRs to demonstrate: ← required testing to demonstrate either:

- a. The OPERABILITY of the equipment being returned to service; or
- b. The OPERABILITY of other equipment.

The administrative controls ensure the time the equipment is returned to service in conflict with the requirements of the ACTIONS is limited to the time absolutely necessary to perform the ~~allowed SRs~~. This Specification does not provide time to perform any other preventive or corrective maintenance.

An example of demonstrating the OPERABILITY of the equipment being returned to service is reopening a containment isolation valve that has been closed to comply with Required Actions and must be reopened to perform the SRs. ← required testing

An example of demonstrating the OPERABILITY of other equipment is taking an inoperable channel or trip system out of the tripped condition to prevent the trip function from occurring during the performance of an SR on another channel in the other trip system. A similar example of demonstrating the OPERABILITY of other equipment is taking an inoperable channel or trip system out of the tripped condition to permit the logic to function and indicate the appropriate response during the performance of an SR on another channel in the same trip system.

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.: 138-8067
SRP Section: 16 - Technical Specifications
Application Section: 16.3.0 LCO and SR Applicability
Date of RAI Issued: 08/07/2015

Question No. 16-39

10 CFR 50.36 requires that each operating license issued by the Commission contain technical specifications (TS) that set forth the limits, operating conditions, and other requirements imposed upon facility operation for the protection of public health and safety. 10 CFR 52.47(a)(11) provides that a design certification (DC) applicant is to propose TS prepared in accordance with 10 CFR 50.36 and 50.36a.

On July 22, 1993, the NRC issued its Final Policy Statement (58 FR 39132) on Technical Specifications improvements, expressing the view that satisfying the guidance in the policy statement also satisfies Section 182a of the Atomic Energy Act and 10 CFR 50.36. In the final policy statement, the NRC stated its “intent that the wording and Bases of the improved STS be used in the Technical Specification related submittal to the extent practicable.” Encouraging and maintaining standardization of TS requirements, such as contained in the STS, is therefore the policy of the NRC. In the final policy statement, the NRC encouraged “all licensees who submit Technical Specification related submittals based on this Policy Statement to emphasize human factors principles.”

In the fifth paragraph of LCO 3.0.6 Bases, reference is made to “Section 4.2 of TS Part 3, ‘Safety Function Determination Program (SFDP)’.” The correct reference should be to “Section 5.5.15, ‘Safety Function Determination Program (SFDP)’,” as stated in the STS. The Deviation Report, “APR1400-K-O-NR-14001-NP,” does not address this difference. Make reference correct.

Staff needs to evaluate all technical differences from standard TS (STS) NUREG-1432, STS Combustion Engineering Plants, Rev. 4, which is referenced by the DC applicant in DCD Tier 2 Section 16.1, and the docketed rationale for each difference because conformance to STS provisions is used in the safety review as the initial point of guidance for evaluating the adequacy of the generic TS to ensure adequate protection of public health and safety, and the completeness and accuracy of the generic TS Bases.

Response

The LCO 3.0.6 Bases will be corrected to reference Specification 5.5.15 rather than Section 4.2 of TS Part 3 for the Safety Function Determination Program (SFDP).

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 LCO 3.0.6 Bases will be corrected as indicated in the Attachment.

Impact on Technical/Topical/Environmental Reports

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

BASES

LCO 3.0.6 LCO 3.0.6 establishes an exception to LCO 3.0.2 for support systems that have an LCO specified in the Technical Specifications (TS). This exception is provided because LCO 3.0.2 would require that the Conditions and Required Actions of the associated inoperable supported system LCO be entered solely due to the inoperability of the support system. This exception is justified because the ACTIONS that are required to ensure the unit is maintained in a safe condition are specified in the support system LCO Required Actions. These Required Actions may include entering the supported system's Conditions and Required Actions or may specify other Required Actions.

When a support system is inoperable and there is an LCO specified for it in the TS, the supported systems are required to be declared inoperable if determined to be inoperable as a result of the support system inoperability. However, it is not necessary to enter into the supported systems' Conditions and Required Actions unless directed to do so by the support system's Required Actions.

The potential confusion and inconsistency of requirements related to the entry into multiple support and supported systems' LCOs' Conditions and Required Actions are eliminated by providing all the ACTIONS that are necessary to ensure the unit is maintained in a safe condition in the support system's Required Actions.

However, there are instances where a support system's Required Action may either direct a supported system to be declared inoperable or direct entry into Conditions and Required Actions for the supported system. This may occur immediately or after some specified delay to perform some other Required Action. Regardless of whether it is immediate or after some delay, when a support system's Required Action directs a supported system to be declared inoperable or directs entry into Conditions and Required Actions for a supported system, the applicable Conditions and Required Actions shall be entered in accordance with LCO 3.0.2.

Upon entry into LCO 3.0.6, an evaluation shall be made to determine if loss of safety function exists. Specification 5.5.15 ~~Section 4.2 of TS Part 3~~, "Safety Function Determination Program (SFDP)," ensures loss of safety function is detected and appropriate ACTIONS are taken. Additionally, other limitations, remedial ACTIONS, or compensatory ACTIONS may be identified as a result of the support system inoperability and corresponding exception to entering supported systems' Conditions and Required Actions. The SFDP implements the requirements of LCO 3.0.6.

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.: 138-8067
SRP Section: 16 - Technical Specifications
Application Section: 16.3.0 LCO and SR Applicability
Date of RAI Issued: 08/07/2015

Question No. 16-40

10 CFR 50.36 requires that each operating license issued by the Commission contain technical specifications (TS) that set forth the limits, operating conditions, and other requirements imposed upon facility operation for the protection of public health and safety. 10 CFR 52.47(a)(11) provides that a design certification (DC) applicant is to propose TS prepared in accordance with 10 CFR 50.36 and 50.36a.

On July 22, 1993, the NRC issued its Final Policy Statement (58 FR 39132) on Technical Specifications improvements, expressing the view that satisfying the guidance in the policy statement also satisfies Section 182a of the Atomic Energy Act and 10 CFR 50.36. In the final policy statement, the NRC stated its "intent that the wording and Bases of the improved STS be used in the Technical Specification related submittal to the extent practicable." Encouraging and maintaining standardization of TS requirements, such as contained in the STS, is therefore the policy of the NRC. In the final policy statement, the NRC encouraged "all licensees who submit Technical Specification related submittals based on this Policy Statement to emphasize human factors principles."

After the fourth paragraph in the LCO 3.0.6 Bases there are numerous wording changes from the STS LCO 3.0.6 Bases, including the entire last paragraph of the STS LCO 3.0.6 Bases being left out in the generic TS LCO 3.0.6 Bases. The Deviation Report, "APR1400-K-O-NR-14001-NP," does not address these differences. Justify the differences or make corrections.

Staff needs to evaluate all technical differences from standard TS (STS) NUREG-1432, STS Combustion Engineering Plants, Rev. 4, which is referenced by the DC applicant in DCD Tier 2 Section 16.1, and the docketed rationale for each difference because conformance to STS provisions is used in the safety review as the initial point of guidance for evaluating the adequacy of the generic TS to ensure adequate protection of public health and safety, and the completeness and accuracy of the generic TS Bases.

Response

The LCO 3.0.6 Bases will be modified to be consistent with the content and wording of STS B 3.0.6.

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 LCO 3.0.6 Bases 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.

BASES

LCO 3.0.6

LCO 3.0.6 establishes an exception to LCO 3.0.2 for support systems that have an LCO specified in the Technical Specifications (TS). This exception is provided because LCO 3.0.2 would require that the Conditions and Required Actions of the associated inoperable supported system LCO be entered solely due to the inoperability of the support system. This exception is justified because the ACTIONS that are required to ensure the unit is maintained in a safe condition are specified in the support system LCO Required Actions. These Required Actions may include entering the supported system's Conditions and Required Actions or may specify other Required Actions.

a support system

When a support system is inoperable and there is an LCO specified for it in the TS, the supported systems are required to be declared inoperable if determined to be inoperable as a result of the support system inoperability. However, it is not necessary to enter into the supported systems' Conditions and Required Actions unless directed to do so by the support system's Required Actions.

The potential confusion and inconsistency of requirements related to the entry into multiple support and supported systems' LCOs' Conditions and Required Actions are eliminated by providing all the ACTIONS that are necessary to ensure the unit is maintained in a safe condition in the support system's Required Actions.

However, there are instances where a support system's Required Action may either direct a supported system to be declared inoperable or direct entry into Conditions and Required Actions for the supported system. This may occur immediately or after some specified delay to perform some other Required Action. Regardless of whether it is immediate or after some delay, when a support system's Required Action directs a supported system to be declared inoperable or directs entry into Conditions and Required Actions for a supported system, the applicable Conditions and Required Actions shall be entered in accordance with LCO 3.0.2.

~~Upon entry into LCO 3.0.6, an evaluation shall be made to determine if loss of safety function exists. Section 4.2 of TS Part 3, "Safety Function Determination Program (SFDP)," ensures loss of safety function is detected and appropriate ACTIONS are taken. Additionally, other limitations, remedial ACTIONS, or compensatory ACTIONS may be identified as a result of the support system inoperability and corresponding exception to entering supported systems' Conditions and Required Actions. The SFDP implements the requirements of LCO 3.0.6.~~

Specification 5.5.15

actions

actions

Upon entry into LCO 3.0.6, an evaluation shall be made to determine if loss of safety function exists.

The following examples use Figure B 3.0-1 to illustrate loss of safety function conditions that may result when a TS support system is inoperable. In this figure, the fifteen systems that comprise Train A are independent and redundant to the fifteen systems that comprise Train B. To correctly use the figure to illustrate the SFDP provisions for a cross train check, the figure establishes a relationship between support and supported systems as follows: the figure shows System 1 as a support system for System 2 and System 3; System 2 as a support system for System 4 and System 5; and System 4 as a support system for System 8 and System 9. Specifically, a

~~Cross train checks to identify a loss of safety function for those support systems that support multiple and redundant safety systems are required. The cross train check verifies that the supported systems of the redundant OPERABLE support system are OPERABLE, thereby ensuring safety function is retained. A loss of safety function may exist when a support system is inoperable, and:~~

- a. A **required** system redundant to system(s) supported by the inoperable support system is also inoperable (EXAMPLE B 3.0.6-1),
- b. A **required** system redundant to system(s) in turn supported by the inoperable supported system is also inoperable (EXAMPLE B 3.0.6-2), or
- c. A **required** system redundant to support system(s) for the supported systems (a) and (b) above is also inoperable (EXAMPLE B 3.0.6-3).

If this evaluation determines that a loss of safety function exists, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

Move to the next page (*)

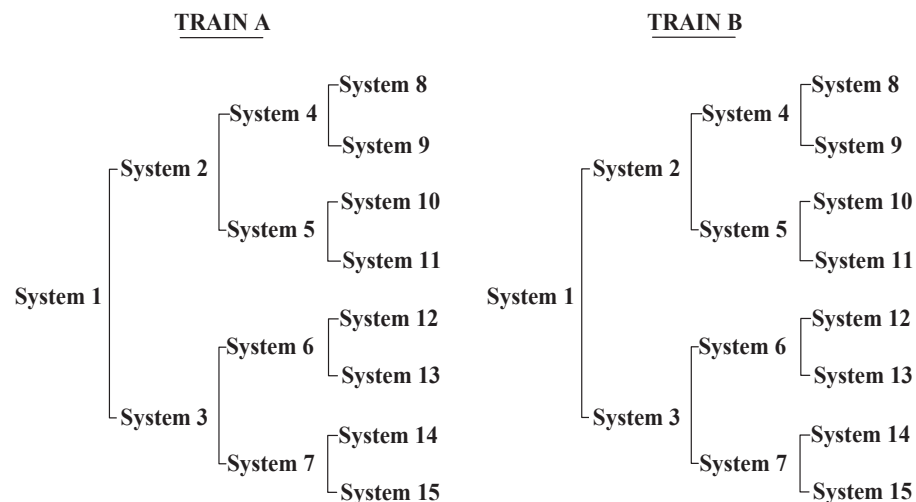


Figure B 3.0-1
 Configuration of Trains and Systems

BASES

LCO 3.0.6 (continued)

For the following examples, see Figure B3.0-1.

EXAMPLE B 3.0.6-1

If System 2 of Train A is inoperable, and System 5 of Train B is inoperable, a loss of safety function exists in ~~supported System 5.~~

Systems 5, 10 and 11.

EXAMPLE B 3.0.6-2

If System 2 of Train A is inoperable, and System 11 of Train B is inoperable, a loss of safety function exists in System 11 ~~which is in turn supported by System 5~~

EXAMPLE B 3.0.6-3

If System 2 of Train A is inoperable, and System 1 of Train B is inoperable, a loss of safety function exists in Systems 2, 4, 5, 8, 9, 10, and 11.

Insert previous sentence (*)

~~From the above examples, the left of the supported system is support system (e.g., System 1 is the supplement of Systems 2 and 3).~~

LCO 3.0.7

This loss of safety function does not require the assumption of additional single failures or loss of offsite power. Since operations are being restricted in accordance with the ACTIONS of the support system, any resulting temporary loss of redundancy or single failure protection is taken into account. Similarly, the ACTIONS for inoperable offsite circuit(s) and inoperable diesel generator(s) provide the necessary restriction for cross train inoperabilities. This explicit cross train verification for inoperable AC electrical power sources also acknowledges that supported system(s) are not declared inoperable solely as a result of inoperability of a normal or emergency electrical power source (refer to the definition of OPERABILITY).

When loss of safety function is determined to exist, and the SFDP requires entry into the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists, consideration must be given to the specific type of function affected. Where a loss of function is solely due to a single Technical Specification support system (e.g., loss of automatic start due to inoperable instrumentation, or loss of pump suction source due to low tank level) the appropriate LCO is the LCO for the support system. The ACTIONS for a support system LCO adequately address the inoperabilities of that system without reliance on entering its supported system LCO. When the loss of function is the result of multiple support systems, the appropriate LCO is the LCO for the supported system.

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.: 138-8067
SRP Section: 16 - Technical Specifications
Application Section: 16.3.0 LCO and SR Applicability
Date of RAI Issued: 08/07/2015

Question No. 16-41

10 CFR 50.36 requires that each operating license issued by the Commission contain technical specifications (TS) that set forth the limits, operating conditions, and other requirements imposed upon facility operation for the protection of public health and safety. 10 CFR 52.47(a)(11) provides that a design certification (DC) applicant is to propose TS prepared in accordance with 10 CFR 50.36 and 50.36a.

On July 22, 1993, the NRC issued its Final Policy Statement (58 FR 39132) on Technical Specifications improvements, expressing the view that satisfying the guidance in the policy statement also satisfies Section 182a of the Atomic Energy Act and 10 CFR 50.36. In the final policy statement, the NRC stated its "intent that the wording and Bases of the improved STS be used in the Technical Specification related submittal to the extent practicable." Encouraging and maintaining standardization of TS requirements, such as contained in the STS, is therefore the policy of the NRC. In the final policy statement, the NRC encouraged "all licensees who submit Technical Specification related submittals based on this Policy Statement to emphasize human factors principles."

At the end of the first paragraph in SR 3.0.1 Bases, two sentences that are in the STS SR 3.0.1 Bases are missing; the sentences refer to "Surveillances may be performed by means of any series of sequential, overlapping, or total steps ..." The Deviation Report, "APR1400-K-O-NR-14001-NP," does not address this difference. Justify the differences or include the sentences.

Staff needs to evaluate all technical differences from standard TS (STS) NUREG-1432, STS Combustion Engineering Plants, Rev. 4, which is referenced by the DC applicant in DCD Tier 2 Section 16.1, and the docketed rationale for each difference because conformance to STS provisions is used in the safety review as the initial point of guidance for evaluating the adequacy of the generic TS to ensure adequate protection of public health and safety, and the completeness and accuracy of the generic TS Bases.

Response

The sentences pertaining to "performing surveillances by means of any series of sequential, overlapping, or total steps" will be added to SR 3.0.1 Bases 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 SR 3.0.1 Bases 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.

B 3.0 SURVEILLANCE REQUIREMENT (SR) APPLICABILITY

BASES

SRs SR 3.0.1 through SR 3.0.4 establish the general requirements applicable to all Specifications and apply at all times, unless otherwise stated.

SR 3.0.1 SR 3.0.1 establishes the requirement that SRs must be met during the MODES or other specified conditions in the Applicability for which the requirements of the LCO apply, unless otherwise specified in the individual SRs. This Specification is to ensure that Surveillances are performed to verify the OPERABILITY of systems and components, and that variables are within specified limits. Failure to meet a Surveillance within the specified Frequency, in accordance with SR 3.0.2, constitutes a failure to meet an LCO.

Systems and components are assumed to be OPERABLE when the associated SRs have been met. Nothing in this Specification, however, is to be construed as implying that systems or components are

Surveillances may be performed by means of any series of sequential, overlapping, or total steps provided the entire Surveillance is performed within the specified Frequency. Additionally, the definitions related to instrument testing (e.g., CHANNEL CALIBRATION) specify that these tests are performed by means of any series of sequential, overlapping, or total steps.

Surveillances do not have to be performed when the unit is in a MODE or other specified condition for which the requirements of the associated LCO are not applicable, unless otherwise specified. The SRs associated with a special test exception (STE) are only applicable when the STE is used as an allowable exception to the requirements of a Specification. Surveillances, including Surveillances invoked by Required Actions, do not have to be performed on inoperable equipment because the ACTIONS define the remedial measures that apply. Surveillances have to be met and performed in accordance with SR 3.0.2, prior to returning equipment to OPERABLE status.