

## 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.: 439-8524  
SRP Section: 16 - Technical Specifications  
Application Section: 16.1.1, 16.3.0, 16.3.1, 16.3.3.13  
Date of RAI Issue: 03/11/2016

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### **Question No. 16-130**

1. Deviation Report Table III-1 should also list LCO 3.0.9. In addition, the applicant is requested to include the Reviewer's Notes contained in the Bases for STS 3.0.4, and bracket LCO 3.0.9 and its Bases (including anywhere LCO 3.0.9 is referred to).

Alternatively, the applicant is requested to cite the DCD location that says the DC applicant (and all COL applicants who incorporate by reference the APR1400 design certification rule DCD) commits to the guidance of:

- NUMARC 93-01, Revision 3, Section 11, which provides guidance and details on the assessment and management of risk during maintenance; and
  - NEI 04-08, "Allowance for Non Technical Specification Barrier Degradation on Supported System OPERABILITY (TSTF-427) Industry Implementation Guidance," March 2006.
2. Deviation Report Table III-1 should also list LCO 3.0.4. The row on page 25 that lists SR 3.0.4 should be corrected to say LCO 3.0.4, and moved up to the previous section of the table. The associated justification for LCO 3.0.4 should cite TSTF-359-A, 'Increase Flexibility in Mode Restraints,' to point out that it is not being adopted in the generic TS, and that Revision 2.2 of NUREG-1432, SR 3.0.4 is being adopted.

The row addressing SR 3.0.4 should quote Rev. 4 of STS SR 3.0.4, and the generic TS SR 3.0.4, and cite TSTF-359-A and Revision 2.2 of NUREG-1432, SR 3.0.4, in its justification field.

The statement that ends generic TS SR 3.0.4 is appropriate for the pre-TSTF-359-A versions of LCO 3.0.4 and SR 3.0.4. However, this means that the version of LCO 3.0.4 and SR 3.0.4 in STS Rev. 2.2 along with its Reviewer's Notes and exceptions to LCO 3.0.4

/ SR 3.0.4, which are stated in Notes in individual Specifications, must be compared against the generic TS to ensure any differences are addressed / justified.

- A. The following lists are provided to facilitate evaluation of differences in LCO 3.0.4 exception Notes:

Generic TS, Revision 0, includes an LCO 3.0.4 exception Note, as follows, in the following locations:

-----NOTE-----  
LCO 3.0.4 is not applicable  
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Required Action Note...3.3.1 Actions B and D...RPS Instrumentation - Operating  
Required Action Note...3.3.5 Actions B and D...ESFAS Instrumentation

Actions Table Note 1.....3.3.11 Actions.....Accident Monitoring  
Instrumentation (AMI)

Actions Table Note 1.....3.3.12 Actions.....Remote Shutdown Display and  
Control

Required Action Note...3.4.15 Actions A and B..RCS Specific Activity (Note that  
TSTF-490-A is incorporated)

NUREG-1432, Revision 2.2, (Digital) includes an LCO 3.0.4 exception Note, as follows, in the following locations; **maroon font denotes STS Note locations not included in generic TS Rev. 0:**

-----NOTE-----  
LCO 3.0.4 is not applicable  
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Required Action Note...3.3.1 Actions B and D...RPS Instrumentation - Operating

**Required Action Note...3.3.2 Actions B and D...RPS Instrumentation – Shutdown**

Required Action Note...3.3.5 Actions B and D...ESFAS Instrumentation

**Required Action Note...3.3.7 Action B.2.....DG-LOVS**

Actions Table Note 1.....3.3.11 Actions.....Post Accident Monitoring (PAM)  
Instrumentation

Actions Table Note 1.....3.3.12 Actions.....Remote Shutdown System

**Actions Table Note 2.....3.4.11 Actions.....Pressurizer Power Operated Relief  
Valves (PORVs)**

**Actions Table Note.....3.4.15 Actions .....RCS Leakage Detection  
Instrumentation**

Required Action Note...3.4.16 Action A .....RCS Specific Activity

**Required Action Note...3.6.8 Action A.1.....Hydrogen Recombiners (Atmospheric  
and Dual) (if permanently installed)**

**Required Action Note...3.6.9 Action A.1.....Hydrogen Mixing System (HMS)  
(Atmospheric and Dual)**

**Required Action Note...3.7.4 Action A.1.....Atmospheric Dump Valves (ADVs)**

- ▶ The applicant is requested to provide justification of the differences between the generic TS and STS Rev. 2.2 regarding the use of LCO 3.0.4 exception Notes. The applicant is also referred to RAI-Questions
  - (a) **16-99 Sub-questions 5 and 7** regarding LCO 3.3.1 Actions B and D; and
  - (b) **16-111 Sub-questions 5 and 7** regarding LCO 3.3.5 Actions B and D.

B. Generic TS, Revision 0, includes an SR 3.0.4 exception Note as follows, in the following location:

-----NOTE-----  
 Only required to be performed ~~in MODE 3~~ **after MODE 3 entry**. In case of entering MODES 3 and 4 for lift setting and test of MSSV, SR 3.0.4 would not apply.

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 Surveillance column Note.. 3.7.1 SR 3.7.1.1.....Main Steam Safety Valves (MSSVs)

This Note in STS Revision 2 is presented as follows in the same location:

-----NOTE-----  
 Only required to be performed in MODES 1 and 2.

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 Surveillance column Note.. 3.7.1 SR 3.7.1.1.....Main Steam Safety Valves (MSSVs)

The meaning of the STS version of the Note is explained by Revision 2, 3, and 4 of STS Section 1.4, "Frequency"; in Example 1.4-5, which says in part (with changes to match values of SR 3.7.1.1:

As the Note modifies the required performance of the Surveillance, the Note is construed to be part of the "specified Frequency." Should the ~~7-day~~ **Inservice Testing Program** interval be exceeded while operation is not in MODE 1 **or** 2, this Note allows entry into and operation in MODES ~~2~~ **and** 3 to perform the Surveillance. The Surveillance is still considered to be performed within the "specified Frequency" if completed prior to entering MODE ~~4~~ **2**.

Once the unit reaches MODE ~~4~~ **2**, the requirement for the Surveillance to be performed within its specified Frequency applies and would require that the Surveillance had been performed. If the Surveillance were not performed prior to entering MODE ~~4~~ **2**, there would then be a failure to perform a Surveillance within the specified Frequency, and the provisions of SR 3.0.3 would apply.

- (1) The applicant stated the first sentence of the proposed surveillance column Note for generic TS SR 3.7.1.1, and the only sentence of the surveillance column Note for SR 3.7.2.1 and 3.7.2.2 as, "Only required to be performed in MODES 3." This is incorrect. The applicant is requested to conform to the STS version of these surveillance column Notes: "Only required to be performed in MODES 1 and 2."
- (2) The intended meaning of the second sentence of the proposed surveillance column Note for SR 3.7.1.1 may be appropriate for inclusion in the associated

Bases discussion, but is not appropriate in the Specification. There is no need to explicitly state that the Note is an exception to the SR 3.0.4 restriction on operational MODE entry. The STS version of the Note is sufficient. Neither the STS nor the generic TS, Rev. 0, include other surveillance column Notes that say SR 3.0.4 would or does not apply, or is not applicable.

- (3) Staff also identified that generic TS Section 1.4, Rev. 0, Example 1.4-5 incorrectly states the example's surveillance column Note as "*Not* required to be *met* in MODE 1." The applicant is requested to correct this error. The Deviation Report (Dec 2015) on page 24 indicates that generic TS Section 1.4 is same as NUREG-1432 [Rev. 4].
- (4) The SR section of the Bases for Rev. 0 of generic TS 3.4.15, "RCS Specific Activity," discusses the surveillance column Note for SR 3.4.15.1 (Dose Equivalent Xe-133) and SR 3.4.15.2 (Dose Equivalent I-131), which states "Only required to be performed in MODE 1." The discussion states:

A Note modifies the SR to allow entry into and operation in MODE 4, MODE 3, and MODE 2 prior to performing the SR. This allows the Surveillance to be performed in those MODES, prior to entering MODE 1.

Staff notes that this informative paragraph is not always included in the Bases of generic TS SRs with such Notes. In addition, Rev. 4 of STS 3.4.16, "RCS Specific Activity," includes this Note in SR 3.4.16.2 (Dose Equivalent I-131); however no explicit discussion of the Note is provided in the STS Bases for SR 3.4.16.2. The applicant is requested to include a similar paragraph in the generic TS Bases for all SRs with such Notes.

- (5) Since the applicant proposes excluding the changes contained in TSTF-359-A, Rev. 9, from the generic TS and Bases, these documents should not contain material associated with those changes. Therefore, the applicant is requested to remove the first paragraph from the Actions section of the Bases for generic TS 3.8.1, "AC Sources – Operating," which states:

A Note prohibits the application of LCO 3.0.4b to an inoperable EDG. There is an increased risk associated with entering a MODE or other specified condition in the Applicability with an inoperable EDG and the provisions of LCO 3.0.4b, which allow entry into a MODE or other specified condition in the Applicability with the LCO not met after performance of a risk assessment addressing inoperable systems and components, should not be applied in this circumstance.

### 3. Additional Background Information:

#### A. NUREG-1432, Rev. 2.2 states LCO 3.0.4 as follows:

LCO 3.0.4 When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall not be made except when the associated

ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time. This Specification shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

Exceptions to this Specification are stated in the individual Specifications.

LCO 3.0.4 is only applicable for entry into a MODE or other specified condition in the Applicability in MODES 1, 2, 3, and 4.

-----REVIEWER'S NOTE-----

LCO 3.0.4 has been revised so that changes in MODES or other specified conditions in the Applicability that are part of a shutdown of the unit shall not be prevented. In addition, LCO 3.0.4 has been revised so that it is only applicable for entry into a MODE or other specified condition in the Applicability in MODES 1, 2, 3, and 4. The MODE change restrictions in LCO 3.0.4 were previously applicable in all MODES. Before this version of LCO 3.0.4 can be implemented on a plant-specific basis, the licensee must review the existing technical specifications to determine where specific restrictions on MODE changes or Required Actions should be included in individual LCOs to justify this change; such an evaluation should be summarized in a matrix of all existing LCOs to facilitate NRC staff review of a conversion to the STS.

B. NUREG-1432, Rev. 2.2 states SR 3.0.4 as follows:

SR 3.0.4      Entry into a MODE or other specified condition in the Applicability of an LCO shall not be made unless the LCO's Surveillances have been met within their specified Frequency. This provision shall not prevent entry into MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

SR 3.0.4 is only applicable for entry into a MODE or other specified Condition in the Applicability in MODES 1, 2, 3, and 4.

-----REVIEWER'S NOTE-----

SR 3.0.4 has been revised so that changes in MODES or other specified conditions in the Applicability that are part of a shutdown of the unit shall not be prevented. In addition, SR 3.0.4 has been revised so that it is only applicable for entry into a MODE or other specified condition in the Applicability in MODES 1, 2, 3, and 4. The MODE change restrictions in SR 3.0.4 were previously applicable in all MODES. Before this version of SR 3.0.4 can be implemented on a plant-specific basis, the licensee must review the existing technical specifications to determine where specific restrictions on MODE changes or Required Actions should be included in

individual LCOs to justify this change; such an evaluation should be summarized in a matrix of all existing LCOs to facilitate NRC staff review of a conversion to the STS.

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## **Response**

1. LCO 3.0.9 will be included in Deviation Report Table III-1 as indicated in the Attachment 1. The Reviewer's Notes will be included in generic TS Bases LCO 3.0.9 and bracket LCO 3.0.9 as indicated in the Attachment 2.
2. The Deviation Report Table III-1 for LCO 3.0.4 and SR 3.04 will be revised as indicated in Attachment 3.
  - A. The following lists are provided to facilitate evaluation of differences in LCO 3.0.4 exception Notes:

For Required Action Note...3.3.2 Action B...RPS Instrumentation – Shutdown, the LCO 3.0.4 exception Note for required Action B is unnecessary, since the ACTIONS will permit operation to continue indefinitely with one automatic RPS trip channel in trip and one automatic RPS trip channel in bypass for affected RPS Function(s).

For Required Action Note...3.3.2 Action D...RPS Instrumentation – Shutdown, the LCO 3.0.4 exception Note for required Action D is unnecessary, since the ACTIONS will permit operation to continue indefinitely with bypass removal channels disabled, or one affected automatic RPS trip channel in trip and one affected trip channel in bypass for affected RPS Function(s).

For Required Action Note...3.3.7 Action.B.2.....DG-LOVS, the LCO 3.0.4 exception Note for required action B.2 of EDG-LOVS (3.3.7) is unnecessary, since the ACTIONS will permit operation to continue indefinitely with one channel in bypass and the other channel in trip for affected LOV function(s).

For Actions Table Note 2.....3.4.11 Actions.....Pressurizer Power Operated Relief Valves (PORVs), Pressurizer Power Operated Relief Valves (3.4.11) is not applicable since there is no PORV in the APR1400. Instead, POSRVs are dedicated overpressure protection devices for normal operations and SCS suction line relief valves are overpressure protection devices for low temperature conditions in the APR1400.

For Actions Table Note.....3.4.15 Actions .....RCS Leakage Detection Instrumentation, LCO Exception note is not found in NUREG 1432, Rev. 4 or in generic TS. Therefore, there is no deviation between NUREG- 1432, Rev.4 and generic TS.

For Required Action Note ..... 3.6.8 Action A.1..... Hydrogen Recombiners (Atmospheric and Dual) (if permanently installed) , this Required Action Note of 3.6.8 Action A.1, Hydrogen Recombiners (Atmospheric and Dual) (if permanently installed) is not required in APR1400, since NRC eliminated the hydrogen release associated with a design-basis LOCA from 10 CFR 50.44 and the associated requirements that

necessitated the need for the hydrogen recombiners, and APR 1400 containment hydrogen control system controls hydrogen concentration with passive autocatalytic recombiners (PARs) or hydrogen igniters during a severe accident as discussed in DCD Tier 2 section 6.2.5.

For Required Action Note ..... 3.6.9 Action A.1..... Hydrogen Mixing System (HMS), APR1400 DC plant does not have the Hydrogen Mixing System (HMS). Even if the Hydrogen is generated during Design-Basis LOCA, there is no problem because the hydrogen is mixed well in containment atmosphere. Therefore, Generic TS, Revision 0 does not include this system in an LCO 3.0.4. In APR1400 DC plant, containment spray nozzles are installed at upper dome and below operating deck in the containment building to remove fission products as well as to reduce the pressure and temperature in the containment building. The containment atmosphere is divided into sprayed region and unsprayed region to evaluate the mix and removal of fission products released for the RCS. It is evaluated that the major portion of the unsprayed region still has good communication with the sprayed region. Air mixing is accomplished by flows due to the density difference between the regions resulting from the effect of spray. Therefore, fission products (hydrogen etc.) in the containment atmosphere are mixed well during Design-Basis LOCA.

For Required Action Note....3.7.4 Action A.1.....Atmospheric Dump Valves (ADVs, LCO exception Note is included as indicated in the Attachment 4. Required action of generic TS 3.7.4 A.1 will be revised as indicated in the Attachment 4.

For RAI Questions (16-99 & 111), there is no difference between the generic TS and STS Rev. 2.2, since both TSs contain the Notes regarding the use of LCO 3.0.4 exception. However, the responses to 16-99 Sub-questions 5 and 7 and 16-111 Sub-questions 5 and 7 include the markup to show the deletion of the Notes. Therefore, the generic TS will be consistent with the last version of STS Rev.4 that does not include the Notes.

B. Generic TS, Revision 0, includes an SR 3.0.4 exception Note as follows, in the following location:

- (1) Surveillance column Notes for MSSVs and MSIVs will be modified into "Only required to be performed in MODES 1 and 2." Therefore, generic TS, SR 3.7.1.1, 3.7.2.1 and 3.7.2.2 will be revised as indicated in the Attachment 4.
- (2) The second sentence that states an exception to the SR 3.0.4 restriction will be deleted. Therefore, generic TS, SR 3.7.1.1 will be revised as indicated in the Attachment 4.
- (3) Example 1.4-5 of generic TS will be revised as indicated in the Attachment 5.
- (4) The USNRC staff noted that the SR section of the Bases for Rev. 0 of generic TS 3.4.15, "RCS Specific Activity", provides a discussion of the surveillance column Note. The staff also noted that such informative discussion is not always included in the Bases of generic TS SRs with such notes. Thus, the staff requested that the

applicant include a similar paragraph in the generic TS Bases for all SRs with such notes.

As noted, the SR section of the Bases for Rev. 0 of generic TS 3.4.15, "RCS Specific Activity" provided an informative discussion of the surveillance column Notes for SR 3.4.15.1 (Dose Equivalent Xe-133) and SR 3.4.15.2 (Dose Equivalent I-131). Such informative paragraph was considered useful to provide clarification to the operator for these particular SR notes. As noted, it is an enhancement to the Standard TS Bases for SR 3.4.16.2 where no explicit discussion of the Note is provided. The SR Bases of generic TS are used to provide the bases of surveillance requirements to ensure that the quality of systems and components is maintained, that facility operation will be within safety limits and that the limiting conditions for operation will be met. In our examination of such notes for all SRs in the generic TS, the Bases of the notes in SRs are considered adequate, and so we believe that further revision to the TS Bases is not warranted. However for those notes specified by the USNRC which are not clearly understood, KHNP is receptive determining whether a Note is required for clarification.(All)

- (5) The first paragraph of the Bases for generic TS 3.8.1 will be removed as indicated in the Attachment 4.

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### **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**

Bases LCO 3.0.9 will be revised as indicated in the Attachment 2.

SR 3.7.1.1, SR 3.7.2.1 SR 3.7.2.2, LCO 3.7.4, and B3.8.1 will be revised as indicated in the Attachment 4.

Example 1.4-5 of generic TS will be revised as indicated in the Attachment 5.

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

TeR APR1400-K-O-NR-14001-P/NP will be revised as indicated in the Attachments 1 & 3.



Number (NUREG-1432 Contents)	Standard Technical Specifications (NUREG-1432, Rev. 4)	APR1400 NRC DC Technical Specifications (Rev. 0)	Justification	Remark
	temperature shall be maintained < [5080] °F, decreasing by [58 °F per 10,000 MWD/MTU] and adjusted for burnable poison per [CENPD-275-P, Revision 1-P-A or CENPD-382-P-A].	shall be maintained at < 2,804.4 °C (5,080 °F), decreasing by 32.2 °C (58 °F)per 10,000 MWD/MTU for burnup and adjusted for burnable poison per CENPD-275-P, Revision 1-P-A.	considered in the APR1400.	
2.2 SL Violations	-	Same as NUREG-1432		
<b>3.0 LIMITING CONDITIONS FOR OPERATION APPLICABILITY</b>				
LCO 3.0.1	-	Same as NUREG-1432		
LCO 3.0.2	-	Same as NUREG-1432		
LCO 3.0.3	-	Same as NUREG-1432		
LCO 3.0.5	-	Same as NUREG-1432		
LCO 3.0.6	-	Same as NUREG-1432		
LCO 3.0.7	-	Same as NUREG-1432		
LCO 3.0.8	-	Same as NUREG-1432		
<b>3.0 SURVEILLANCE REQUIREMENT APPLICABILITY</b>				
<div style="border: 1px solid red; padding: 2px;">LCO 3.0.9</div> SR 3.0.3	When one or more required barriers are unable to perform their related support function(s), any supported system LCO(s) are not required to be declared not met solely for this reason for up to 30 days provided that at least one train or subsystem of the supported system is OPERABLE and supported by barriers capable of providing their related support function(s), and risk is assessed and managed. ~	When one or more required barriers are unable to perform their related support function(s), any supported system LCO(s) are not required to be declared not met solely for this reason for up to 30 days provided that at least one train or subsystem of the supported system is OPERABLE and supported by barriers capable of providing their LCO related support function(s). ~	Risk informed Technical Specification is not applied for the APR1400.	
SR 3.0.4				

## BASES

LCO 3.0.9

LCO 3.0.9 establishes conditions under which systems described in the TS are considered to remain OPERABLE when required barriers are not capable of providing their related support function(s).

Barriers are doors, walls, floor plugs, curbs, hatches, installed structures or components, or other devices, not explicitly described in TS, that support the performance of the safety function of systems described in the TS. This LCO states that the supported system is not considered to

## -----REVIEWER'S NOTE-----

Adoption of LCO 3.0.9 requires the licensee to make the following commitments:

1. [LICENSEE] commits to the guidance of NUMARC 93-01, Revision 3, Section 11, which provides guidance and details on the assessment and management of risk during maintenance.
2. [LICENSEE] commits to the guidance of NEI 04-08, "Allowance for Non Technical Specification Barrier Degradation on Supported System OPERABILITY (TSTF-427) Industry Implementation Guidance," March 2006.

If the allowed time expires and the barriers are unable to perform their related support function(s), the supported system's LCO(s) must be declared not met and the Conditions and Required Actions entered in accordance with LCO 3.0.2.

This provision does not apply to barriers which support ventilation systems or to fire barriers. The TS for ventilation systems provide specific Conditions for inoperable barriers. Fire barriers are addressed by other regulatory requirements and associated plant programs. This provision does not apply to barriers which are not required to support system OPERABILITY (see NRC Regulatory Issue Summary 2001-09, "Control of Hazard Barriers," dated April 2, 2001).

The provisions of LCO 3.0.9 are justified because of the low risk associated with required barriers not being capable of performing their related support function. This provision is based on consideration of the following initiating event categories:

Number (NUREG-1432 Contents)	Standard Technical Specifications (NUREG-1432, Rev. 4)	APR1400 NRC DC Technical Specifications (Rev. 0)	Justification	Remark
	temperature shall be maintained < [5080] °F, decreasing by [58 °F per 10,000 MWD/MTU] and adjusted for burnable poison per [CENPD-275-P, Revision 1-P-A or CENPD-382-P-A].	shall be maintained at < 2,804.4 °C (5,080 °F), decreasing by 32.2 °C (58 °F)per 10,000 MWD/MTU for burnup and adjusted for burnable poison per CENPD-275-P, Revision 1-P-A.	considered in the APR1400.	
2.2 SL Violations	-	Same as NUREG-1432		
<b>3.0 LIMITING CONDITIONS FOR OPERATION APPLICABILITY</b>				
LCO 3.0.1	-	Same as NUREG-1432		
LCO 3.0.2	-	Same as NUREG-1432		
LCO 3.0.3	-	Same as NUREG-1432		
LCO 3.0.5	-	Same as NUREG-1432		
LCO 3.0.6	-	Same as NUREG-1432		
LCO 3.0.7	-	Same as NUREG-1432		
LCO 3.0.8	-	Same as NUREG-1432		
<b>3.0 SURVEILLANCE REQUIREMENT APPLICABILITY</b>				
SR 3.0.1	-	Same as NUREG-1432		
SR 3.0.3	-	Same as NUREG-1432		
SR 3.0.4	When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall only be made: a. When the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time; b. After performance of a risk	When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall not be made except when the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time. This Specification shall not prevent changes in MODES or other specified	Risk informed Technical Specification is not applied for the APR1400.	

TSTF-359-A is not adopted in APR1400 NRC DC Technical Specifications since Risk informed TS is not applied, Instead, NUREG-1432 Rev.1 is used.

LCO 3.0.4

Number (NUREG-1432 Contents)	Standard Technical Specifications (NUREG-1432, Rev. 4)	APR1400 NRC DC Technical Specifications (Rev. 0)	Justification	Remark
<p><b>LCO 3.0.4</b></p>	<p>assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the MODE or other specified condition in the Applicability, and establishment of risk management actions, if appropriate; exceptions to this Specification are stated in the individual Specifications, or</p> <p>c. When an allowance is stated in the individual value, parameter, or other Specification.</p> <p>This Specification shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.</p>	<p>conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit. Exceptions to this Specification are stated in the individual Specifications. These exceptions allow entry into MODES or other specified conditions in the Applicability when the associated ACTIONS to be entered allow unit operation in the MODE or other specified condition in the Applicability only for a limited period of time.</p> <p>LCO 3.0.4 is only applicable for entry into a MODE or other specified condition in the Applicability in MODES 1, 2, 3, and 4.</p>	<p>SR 3.0.4 is written based on the NUREG-1432 Rev.1. However the TSTF-359-A results that are applicable to the APR1400 are partially adopted since risk informed TS is not applied to the ARP1400.</p>	
SR 3.0.4	None	<p><del>SR 3.0.4 is only applicable for entry into a MODE or other specified condition in the Applicability in MODES 1, 2, 3, and 4.</del></p>	<p><del>SR 3.0.4 is only applicable for MODE change.</del></p>	
<p>3.1 RE</p> <p>3.1.1 S</p> <p>MARG</p> <p>KEPCO</p>	<p>Entry into a MODE or other specified condition in the Applicability of an LCO shall only be made when the LCO's Surveillances have been met within their specified Frequency, except as provided by SR 3.0.3. When an LCO is not met due to Surveillances not having been met, entry into a MODE or other specified condition in the Applicability shall only be made in accordance with LCO 3.0.4.</p> <p>This provision shall not prevent entry into MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.</p>	<p>1.1 SHUTDOWN MARGIN (SDM) – Tcold &gt; 99 °C (210 °F)</p> <p><b>LCO 3.1.1</b></p> <p>SDM shall be within the limi</p>	<p>Entry into a MODE or other specified Condition in the Applicability of an LCO shall only be made when the LCO's Surveillances have been met within their specified Frequency except as provided by SR 3.0.3. When an LCO is not met due to Surveillances not having been met, entry into a MODE or other specified Condition in the Applicability shall only be made in accordance with LCO 3.0.4.</p> <p>This provision shall not prevent entry into MODES or other specified Conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.</p> <p>SR 3.0.4 is only applicable for entry into a MODE or other specified Condition in the Applicability in MODES 1, 2, 3, and 4.</p>	

SURVEILLANCE REQUIREMENTS

in MODES 1 and 2.

SURVEILLANCE	FREQUENCY
<p>SR 3.7.1.1</p> <p>----- NOTE -----</p> <p>Only required to be performed in MODE 3. In case of entering MODES 3 and 4 for lift setting and test of MSSV, SR 3.0.4 would not apply.</p> <p>Verify each required MSSV lift setpoint per Table 3.7.1-2 in accordance with Inservice Testing Program. Following testing, lift settings shall be within <math>\pm 1\%</math>.</p>	<p>In accordance with Inservice Testing Program.</p>

Delete

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.2.1	<p>----- NOTE -----                      Only required to be performed in <del>MODE 3</del>.                      -----</p> <p>Verify isolation time of each MSIV is within limits.</p>	In accordance with Inservice Testing Program.
SR 3.7.2.2	<p>----- NOTE -----                      Only required to be performed in <del>MODE 3</del>.                      -----</p> <p>Verify each MSIV actuates to isolation position on an actual or simulated actuation signal.</p>	18 months

in MODES 1 and 2.

in MODES 1 and 2.

3.7 PLANT SYSTEMS

3.7.4 Main Steam Atmospheric Dump Valves (MSADVs)

LCO 3.7.4 Two MSADV lines shall be OPERABLE.

----- NOTE -----  
LCO 3.0.4 is not applicable.

APPLICABILITY: MODES 1, 2, and 3,  
MODE 4 when a steam generator is being relied upon for heat removal.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required MSADV line inoperable.	A.1 Restore MSADV line to OPERABLE status.	7 days
B. Two or more MSADV lines inoperable.	B.1 Restore all but one MSADV line to OPERABLE status.	24 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	6 hours
	<u>AND</u> C.2 Be in MODE 4, without reliance upon steam generator for heat removal.	24 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.7.4.1	Verify one complete cycle of each MSADV.	18 months
SR 3.7.4.2	Verify one complete cycle of each MSADV block valve.	18 months

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**BASES**

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**ACTIONS**

~~A Note prohibits the application of LCO 3.0.4b to an inoperable EDG. There is an increased risk associated with entering a MODE or other specified condition in the Applicability with an inoperable EDG and the provisions of LCO 3.0.4b, which allow entry into a MODE or other specified condition in the Applicability with the LCO not met after performance of a risk assessment addressing inoperable systems and components, should not be applied in this circumstance.~~ delete

A.1

To ensure a highly reliable power source remains with the one offsite circuit inoperable, it is necessary to verify the OPERABILITY of the remaining required offsite circuit on a more frequent basis. Since the Required Action only specifies “perform,” a failure of SR 3.8.1.1 acceptance criteria does not result in a required action not met. However, if a second required circuit fails SR 3.8.1.1, the second offsite circuit is inoperable and Condition C, for two offsite circuits inoperable, is entered.

A.2

Required Action A.2, which only applies if the division cannot be powered from an offsite source, is intended to provide assurance that an event coincident with a single failure of the associated EDG will not result in a complete loss of safety function of critical redundant required features. These features are powered from the redundant AC electrical power division.

The Completion Time for Required Action A.2 is intended to allow the operator time to evaluate and repair any discovered inoperabilities. This Completion Time also allows for an exception to the normal “time zero” for beginning the allowed outage time “clock.” In this Required Action, the Completion Time only begins on discovery that both:

- a. The division has no offsite power supplying its loads.
- b. A required feature on the other division is inoperable.

If at any time during the existence of Condition A (one offsite circuit inoperable) a redundant required feature subsequently becomes inoperable, this Completion Time begins to be tracked.



1.4 Frequency

EXAMPLES (continued)

EXAMPLE 1.4-5

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>----- NOTE -----                      Only required to be <del>met</del> in                      MODE 1</p>	<p style="text-align: center;"><span style="border: 1px solid red; padding: 2px;">performed</span></p>
<p>Perform complete cycle of the                      valve.</p>	<p>7 days</p>

The interval continues, whether or not the unit operation is in MODE 1, 2, or 3 (the assumed Applicability of the associated LCO) between performances.

As the Note modifies the required performance of the Surveillance, the Note is construed to be part of the "specified Frequency." Should the 7 day interval be exceeded while operation is not in MODE 1, this Note allows entry into and operation in MODES 2 and 3 to perform the Surveillance. The Surveillance is still considered to be performed within the "specified Frequency" if completed prior to entering MODE 1. Therefore, if the Surveillance were not performed within the 7 day (plus the extension allowed by SR 3.0.2) interval, but operation was not in MODE 1, it would not constitute a failure of the SR or failure to meet the LCO. Also, no violation of SR 3.0.4 occurs when changing MODES, even with the 7 day Frequency not met, provided operation does not result in entry into MODE 1.

Once the unit reaches MODE 1, the requirement for the Surveillance to be performed within its specified Frequency applies and would require that the Surveillance had been performed. If the Surveillance were not performed prior to entering MODE 1, there would then be a failure to perform a Surveillance within the specified Frequency, and the provisions of SR 3.0.3 would apply.