

## **KHNPDCDRAIsPEm Resource**

---

**From:** Ciocco, Jeff  
**Sent:** Monday, August 01, 2016 8:44 AM  
**To:** apr1400rai@khnp.co.kr; KHNPDCDRAIsPEm Resource; Jung-ho Kim (jhokim02@gmail.com); Andy Jiyong Oh; Steven Mannon  
**Cc:** Scully, Derek; Dias, Antonio; Umana, Jessica; Williams, Donna  
**Subject:** APR1400 Design Certification Application RAI 509-8591 (16 - Technical Specifications)  
**Attachments:** APR1400 DC RAI 509 SPSB 8591.pdf

KHNP,

The attachment contains the subject request for additional information (RAI). This RAI was sent to you in draft form. Your licensing review schedule assumes technically correct and complete responses within 30 days of receipt of RAIs. However, KHNP requests, and we grant, 45 days to respond to RAI questions 16-210 and 16-217. We may adjust the schedule accordingly.

Please submit your RAI response to the NRC Document Control Desk.

Thank you,

Jeff Ciocco  
New Nuclear Reactor Licensing  
301.415.6391  
[jeff.ciocco@nrc.gov](mailto:jeff.ciocco@nrc.gov)



**Hearing Identifier:** KHNP\_APR1400\_DCD\_RAI\_Public  
**Email Number:** 567

**Mail Envelope Properties** (f17f3f48dae14ec1aa95ab96c4f38964)

**Subject:** APR1400 Design Certification Application RAI 509-8591 (16 - Technical Specifications)  
**Sent Date:** 8/1/2016 8:44:25 AM  
**Received Date:** 8/1/2016 8:44:27 AM  
**From:** Ciocco, Jeff  
**Created By:** Jeff.Ciocco@nrc.gov

**Recipients:**

"Scully, Derek" <Derek.Scully@nrc.gov>  
Tracking Status: None  
"Dias, Antonio" <Antonio.Dias@nrc.gov>  
Tracking Status: None  
"Umana, Jessica" <Jessica.Umana@nrc.gov>  
Tracking Status: None  
"Williams, Donna " <Donna.Williams@nrc.gov>  
Tracking Status: None  
"apr1400rai@khnp.co.kr" <apr1400rai@khnp.co.kr>  
Tracking Status: None  
"KHNPDCDRAIsPEm Resource" <KHNPDCDRAIsPEm.Resource@nrc.gov>  
Tracking Status: None  
"Junggho Kim (jhokim082@gmail.com)" <jhokim082@gmail.com>  
Tracking Status: None  
"Andy Jiyong Oh" <jiyong.oh5@gmail.com>  
Tracking Status: None  
"Steven Mannon" <steven.mannon@aecom.com>  
Tracking Status: None

**Post Office:** HQPWMSMRS07.nrc.gov

<b>Files</b>	<b>Size</b>	<b>Date &amp; Time</b>
MESSAGE	631	8/1/2016 8:44:27 AM
APR1400 DC RAI 509 SPSB 8591.pdf		161237
image001.jpg	5040	

**Options**

**Priority:** Standard  
**Return Notification:** No  
**Reply Requested:** No  
**Sensitivity:** Normal  
**Expiration Date:**  
**Recipients Received:**

# REQUEST FOR ADDITIONAL INFORMATION 509-8591

Issue Date: 08/01/2016  
Application Title: APR1400 Design Certification Review – 52-046  
Operating Company: Korea Hydro & Nuclear Power Co. Ltd.  
Docket No. 52-046  
Review Section: 16 - Technical Specifications  
Application Section:

## QUESTIONS

16-194

Paragraph (a)(11) of 10 CFR 52.47 states that a design certification (DC) applicant is to propose Technical Specifications (TS) prepared in accordance with 10 CFR 50.36 and 50.36a. NUREG-1432, "Standard Technical Specifications (STS)-Combustion Engineering Plants," Rev. 4, provides NRC guidance on format and content of technical specifications as one acceptable means to meet 10 CFR 50.36 requirements. 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.

The Writer's Guide for Plant-Specific Improved Technical Specifications (TSTF-GG-05-01) also provides guidance for the format and content of the TS. There are format and content differences between the DCD and the Writer's Guide. These following corrections are necessary to ensure the completeness and accuracy of the TS and Bases.

Correct the following editorial errors on page 2.0-1.

- In the title, there needs to be a space between the word "LIMITS" and the abbreviation "(SLs).
- The title for 2.1.2 should read "Reactor Coolant System (RCS) Pressure SL" vice "Reactor Coolant System (RCS) Pressure SLs". There is only one Safety Limit in 2.1.2, so the title should be singular.

These corrections are required to ensure the accuracy of the Technical Specifications.

16-195

Paragraph (a)(11) of 10 CFR 52.47 states that a design certification (DC) applicant is to propose Technical Specifications (TS) prepared in accordance with 10 CFR 50.36 and 50.36a. NUREG-1432, "Standard Technical Specifications (STS)-Combustion Engineering Plants," Rev. 4, provides NRC guidance on format and content of technical specifications as one acceptable means to meet 10 CFR 50.36 requirements. 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.

The Writer's Guide for Plant-Specific Improved Technical Specifications (TSTF-GG-05-01) also provides guidance for the format and content of the TS. There are format and content differences between the DCD and the Writer's Guide. These following corrections are necessary to ensure the completeness and accuracy of the TS and Bases.

Correct the font size of a line of text contained within Technical Specification (TS) 3.1.5.

The phrase "Restore CEA Alignment" of Required Action A.2 appears in a larger font than the rest of the text and should be corrected.

This correction is to ensure the proper font size is used within the TS.

## REQUEST FOR ADDITIONAL INFORMATION 509-8591

16-196

Paragraph (a)(11) of 10 CFR 52.47 states that a design certification (DC) applicant is to propose Technical Specifications (TS) prepared in accordance with 10 CFR 50.36 and 50.36a. NUREG-1432, "Standard Technical Specifications (STS)-Combustion Engineering Plants," Rev. 4, provides NRC guidance on format and content of technical specifications as one acceptable means to meet 10 CFR 50.36 requirements. 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.

The Writer's Guide for Plant-Specific Improved Technical Specifications (TSTF-GG-05-01) also provides guidance for the format and content of the TS. There are format and content differences between the DCD and the Writer's Guide. These following corrections are necessary to ensure the completeness and accuracy of the TS and Bases.

Justify deviation from the STS in Surveillance Requirement (SR) 3.1.5.4.

The STS text reads "Perform a CHANNEL FUNCTIONAL TEST of each reed switch position transmitter channel". The APR1400 text reads "Perform a CHANNEL FUNCTIONAL TEST of each reed switch position transmitter (RSPT) channel". The acronym is unnecessary due to the fact that "RSPT" isn't used again in the text.

This justification is required to ensure the accuracy of the Technical Specifications (TS) and to further align the APR1400 TS with the STS.

16-197

Paragraph (a)(11) of 10 CFR 52.47 states that a design certification (DC) applicant is to propose Technical Specifications (TS) prepared in accordance with 10 CFR 50.36 and 50.36a. NUREG-1432, "Standard Technical Specifications (STS)-Combustion Engineering Plants," Rev. 4, provides NRC guidance on format and content of technical specifications as one acceptable means to meet 10 CFR 50.36 requirements. 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.

The Writer's Guide for Plant-Specific Improved Technical Specifications (TSTF-GG-05-01) also provides guidance for the format and content of the TS. There are format and content differences between the DCD and the Writer's Guide. These following corrections are necessary to ensure the completeness and accuracy of the TS and Bases.

Clarify a deviation from the STS in CONDITION C for Technical Specification (TS) 3.1.7.

The text in the STS reads "...insertion limit for intervals > 5 effective..." The APR1400 text reads "...insertion limit for > 5 effective..." The word "intervals" is omitted.

This clarification is required to ensure that the CONDITION C statement is accurate in the APR1400 TS.

16-198

Paragraph (a)(11) of 10 CFR 52.47 states that a design certification (DC) applicant is to propose Technical Specifications (TS) prepared in accordance with 10 CFR 50.36 and 50.36a. NUREG-1432, "Standard Technical Specifications (STS)-Combustion Engineering Plants," Rev. 4, provides NRC guidance on format and content of technical specifications as one acceptable means to meet 10 CFR 50.36 requirements. 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.

The Writer's Guide for Plant-Specific Improved Technical Specifications (TSTF-GG-05-01) also provides guidance for the format and content of the TS. There are format and content differences between the DCD and the Writer's Guide. These following corrections are necessary to ensure the completeness and accuracy of the TS and Bases.

## REQUEST FOR ADDITIONAL INFORMATION 509-8591

Correct a formatting issue in Technical Specification (TS) 3.1.8.

Section 2.5.3 of the Writer's Guide for Plant Specific Improved Technical Specifications states "The LCO is two blank lines below the Specification number and title." On page 3.1.8-1 of the APR1400 TS, the LCO statement is only one blank line below the specification number and title.

This correction is required to ensure that the formatting guidance in the Writer's Guide is being followed.

### 16-199

Paragraph (a)(11) of 10 CFR 52.47 states that a design certification (DC) applicant is to propose Technical Specifications (TS) prepared in accordance with 10 CFR 50.36 and 50.36a. NUREG-1432, "Standard Technical Specifications (STS)-Combustion Engineering Plants," Rev. 4, provides NRC guidance on format and content of technical specifications as one acceptable means to meet 10 CFR 50.36 requirements. 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.

The Writer's Guide for Plant-Specific Improved Technical Specifications (TSTF-GG-05-01) also provides guidance for the format and content of the TS. There are format and content differences between the DCD and the Writer's Guide. These following corrections are necessary to ensure the completeness and accuracy of the TS and Bases.

Correct the wording used in the Applicability statement in Technical Specification (TS) 3.1.9.

The Applicability statement for TS 3.1.9 reads "MODE 5 during MID-LOOP operation during maintenance." The wording "during maintenance" is not warranted. The LCO is applicable as always in MODE 5 during MID-LOOP operation, regardless of the plant activities going on. The Bases states "The LCO is applicable during MODE 5 (MID-LOOP operation)." Therefore the condition "during maintenance" should be removed in the TS.

This correction is required to ensure the accuracy of the TS.

### 16-200

Paragraph (a)(11) of 10 CFR 52.47 states that a design certification (DC) applicant is to propose Technical Specifications (TS) prepared in accordance with 10 CFR 50.36 and 50.36a. NUREG-1432, "Standard Technical Specifications (STS)-Combustion Engineering Plants," Rev. 4, provides NRC guidance on format and content of technical specifications as one acceptable means to meet 10 CFR 50.36 requirements. 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.

The Writer's Guide for Plant-Specific Improved Technical Specifications (TSTF-GG-05-01) also provides guidance for the format and content of the TS. There are format and content differences between the DCD and the Writer's Guide. These following corrections are necessary to ensure the completeness and accuracy of the TS and Bases.

Correct the following formatting errors in various Instrumentation tables contained in Technical Specification (TS) 3.3.

Section 2.1.8.e of the Writer's Guide for Plant Specific Improved Technical Specifications states "Column headings are in all caps." The following corrections need to be made:

- The word "or" needs to be capitalized in the table headers on the following pages:
  - 3.3.1-6
  - 3.3.1-7
  - 3.3.1-8
  - 3.3.2-4
  - 3.3.5-5

## REQUEST FOR ADDITIONAL INFORMATION 509-8591

- The word “from” needs to be capitalized in the table headers on the following pages:
  - 3.3.11-3
  - 3.3.11-4
- The word “of” needs to be capitalized in the table headers on the following pages:
  - 3.3.12-3
  - 3.3.12-4
  - 3.3.12-5

These corrections are required to ensure the formatting adheres to the guidance in the Writer’s Guide and to align the text with the STS.

### 16-201

Paragraph (a)(11) of 10 CFR 52.47 states that a design certification (DC) applicant is to propose Technical Specifications (TS) prepared in accordance with 10 CFR 50.36 and 50.36a. NUREG-1432, “Standard Technical Specifications (STS)-Combustion Engineering Plants,” Rev. 4, provides NRC guidance on format and content of technical specifications as one acceptable means to meet 10 CFR 50.36 requirements. 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.

The Writer’s Guide for Plant-Specific Improved Technical Specifications (TSTF-GG-05-01) also provides guidance for the format and content of the TS. There are format and content differences between the DCD and the Writer’s Guide. These following corrections are necessary to ensure the completeness and accuracy of the TS and Bases.

Correct the following formatting error of the Required Actions designation in Technical Specification (TS) 3.3.5.

Section 2.5.5.c.2 of the Writer’s Guide for Plant Specific Improved Technical Specifications states “Each Required Action begins with a Required Action designator, which is the Condition designator followed by one or more Arabic numerals.”

In the section for Required Action F, Required Action “F.1” is incorrectly labeled “E.1”.

This correction is required to ensure the correct formatting of the TS.

### 16-202

Paragraph (a)(11) of 10 CFR 52.47 states that a design certification (DC) applicant is to propose Technical Specifications (TS) prepared in accordance with 10 CFR 50.36 and 50.36a. NUREG-1432, “Standard Technical Specifications (STS)-Combustion Engineering Plants,” Rev. 4, provides NRC guidance on format and content of technical specifications as one acceptable means to meet 10 CFR 50.36 requirements. 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.

The Writer’s Guide for Plant-Specific Improved Technical Specifications (TSTF-GG-05-01) also provides guidance for the format and content of the TS. There are format and content differences between the DCD and the Writer’s Guide. These following corrections are necessary to ensure the completeness and accuracy of the TS and Bases.

Correct the following formatting errors of the Required Actions designation in Technical Specification (TS) 3.3.6.

Section 2.5.5.c.2 of the Writer’s Guide for Plant Specific Improved Technical Specifications states “Each Required Action begins with a Required Action designator, which is the Condition designator followed by one or more Arabic numerals.”

- The first Required Action “E.” should read “E.1” since there is a Required Action E.2.
- Required Action stated as “C.” should read “C.1”.
- Required Action stated as “D.” should read “D.1”.

## REQUEST FOR ADDITIONAL INFORMATION 509-8591

The discussion of the above noted Required Actions in the respective sections of the Bases have the Required Actions annotated correctly, therefore no corrections are necessary in the Bases.

This correction is required to ensure the correct formatting of the TS.

### 16-203

Paragraph (a)(11) of 10 CFR 52.47 states that a design certification (DC) applicant is to propose Technical Specifications (TS) prepared in accordance with 10 CFR 50.36 and 50.36a. NUREG-1432, "Standard Technical Specifications (STS)-Combustion Engineering Plants," Rev. 4, provides NRC guidance on format and content of technical specifications as one acceptable means to meet 10 CFR 50.36 requirements. 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.

The Writer's Guide for Plant-Specific Improved Technical Specifications (TSTF-GG-05-01) also provides guidance for the format and content of the TS. There are format and content differences between the DCD and the Writer's Guide. These following corrections are necessary to ensure the completeness and accuracy of the TS and Bases.

Correct the formatting error within the Completion Times column within Technical Specification 3.3.6.

TS 3.3.6 contains 2 Required Actions for Condition B, Required Actions B.1 and B.2, each requiring their own Completion Time. The Completion Times are located adjacent to each other, vice having "Immediately" line up with the first line of text for Required Action B.1 and "48 hours" line up with the first line of text for Required Action B.2.

This correction is required to ensure the accuracy of the TS.

### 16-204

Paragraph (a)(11) of 10 CFR 52.47 states that a design certification (DC) applicant is to propose Technical Specifications (TS) prepared in accordance with 10 CFR 50.36 and 50.36a. NUREG-1432, "Standard Technical Specifications (STS)-Combustion Engineering Plants," Rev. 4, provides NRC guidance on format and content of technical specifications as one acceptable means to meet 10 CFR 50.36 requirements. 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.

The Writer's Guide for Plant-Specific Improved Technical Specifications (TSTF-GG-05-01) also provides guidance for the format and content of the TS. There are format and content differences between the DCD and the Writer's Guide. These following corrections are necessary to ensure the completeness and accuracy of the TS and Bases.

Correct the following errors within the Note for Surveillance Requirement (SR) 3.3.6.2.

The text includes the phrase "...tested once every 18 month(MODE 6) or in MODE 5 if not tested until the previous 62..." The word "month" should be "months" and should have a space between it and the "(" . The phrase "...tested until the..." should read "...tested within the..."

These corrections are required to ensure the accuracy of the SR.

### 16-205

Paragraph (a)(11) of 10 CFR 52.47 states that a design certification (DC) applicant is to propose Technical Specifications (TS) prepared in accordance with 10 CFR 50.36 and 50.36a. NUREG-1432, "Standard Technical Specifications (STS)-Combustion Engineering Plants," Rev. 4, provides NRC guidance on format and content of technical specifications as one acceptable means to

## REQUEST FOR ADDITIONAL INFORMATION 509-8591

meet 10 CFR 50.36 requirements. 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.

The Writer's Guide for Plant-Specific Improved Technical Specifications (TSTF-GG-05-01) also provides guidance for the format and content of the TS. There are format and content differences between the DCD and the Writer's Guide. These following corrections are necessary to ensure the completeness and accuracy of the TS and Bases.

Correct a formatting error within the Surveillance Requirements in Technical Specification (TS) 3.3.9.

Section 2.5.7.d of the Writer's Guide for Plant Specific Improved Technical Specifications states "Single lines appear at the bottom of each Actions and Surveillance Requirements table that continued to the subsequent page one blank line below the text..."

There is no line break between the final line of text within SR 3.3.9.2 and the single line below the text.

This correction is required to ensure the correct formatting of the SR.

### 16-206

Paragraph (a)(11) of 10 CFR 52.47 states that a design certification (DC) applicant is to propose Technical Specifications (TS) prepared in accordance with 10 CFR 50.36 and 50.36a. NUREG-1432, "Standard Technical Specifications (STS)-Combustion Engineering Plants," Rev. 4, provides NRC guidance on format and content of technical specifications as one acceptable means to meet 10 CFR 50.36 requirements. 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.

The Writer's Guide for Plant-Specific Improved Technical Specifications (TSTF-GG-05-01) also provides guidance for the format and content of the TS. There are format and content differences between the DCD and the Writer's Guide. These following corrections are necessary to ensure the completeness and accuracy of the TS and Bases.

Correct the borders within the Required Actions table for Technical Specification (TS) 3.3.13.

In the Required Actions table, there is a Note associated with Required Action A.1. The single line above and below the Note contact the vertical line separating the Required Action column and the Completion Time column. This should be corrected.

This correction is required to ensure the proper formatting of the Required Actions table within TS 3.3.13.

### 16-207

Paragraph (a)(11) of 10 CFR 52.47 states that a design certification (DC) applicant is to propose Technical Specifications (TS) prepared in accordance with 10 CFR 50.36 and 50.36a. NUREG-1432, "Standard Technical Specifications (STS)-Combustion Engineering Plants," Rev. 4, provides NRC guidance on format and content of technical specifications as one acceptable means to meet 10 CFR 50.36 requirements. 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.

The Writer's Guide for Plant-Specific Improved Technical Specifications (TSTF-GG-05-01) also provides guidance for the format and content of the TS. There are format and content differences between the DCD and the Writer's Guide. These following corrections are necessary to ensure the completeness and accuracy of the TS and Bases.



## REQUEST FOR ADDITIONAL INFORMATION 509-8591

Correct the punctuation in the LCO statements for two Technical Specifications (TS), TS 3.4.10 and 3.4.16.

For both of these LCO statements, the statement “b” needs a period at the end of the sentence.

This correction is required to ensure the accuracy and completeness of the LCO statements.

### 16-208

Paragraph (a)(11) of 10 CFR 52.47 states that a design certification (DC) applicant is to propose Technical Specifications (TS) prepared in accordance with 10 CFR 50.36 and 50.36a. NUREG-1432, “Standard Technical Specifications (STS)-Combustion Engineering Plants,” Rev. 4, provides NRC guidance on format and content of technical specifications as one acceptable means to meet 10 CFR 50.36 requirements. 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.

The Writer’s Guide for Plant-Specific Improved Technical Specifications (TSTF-GG-05-01) also provides guidance for the format and content of the TS. There are format and content differences between the DCD and the Writer’s Guide. These following corrections are necessary to ensure the completeness and accuracy of the TS and Bases.

Correct the formatting of the Logical Connector “AND” in Condition D for Technical Specification (TS) 3.4.14.

The applicant was requested to address the formatting of all Logical Connectors in Question 16-51 in RAI 8055. While the applicant made most corrections satisfactorily, this error was not corrected. The Logical Connector “AND” needs to be underlined in the text of the TS.

This correction is required to ensure the correct formatting of Logical Connectors.

### 16-209

Paragraph (a)(11) of 10 CFR 52.47 states that a design certification (DC) applicant is to propose Technical Specifications (TS) prepared in accordance with 10 CFR 50.36 and 50.36a. NUREG-1432, “Standard Technical Specifications (STS)-Combustion Engineering Plants,” Rev. 4, provides NRC guidance on format and content of technical specifications as one acceptable means to meet 10 CFR 50.36 requirements. 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.

The Writer’s Guide for Plant-Specific Improved Technical Specifications (TSTF-GG-05-01) also provides guidance for the format and content of the TS. There are format and content differences between the DCD and the Writer’s Guide. These following corrections are necessary to ensure the completeness and accuracy of the TS and Bases.

Correct the following formatting errors of the Required Actions designation in Technical Specification (TS) 3.4.14.

Section 2.5.5.c.2 of the Writer’s Guide for Plant Specific Improved Technical Specifications states “Each Required Action begins with a Required Action designator, which is the Condition designator followed by one or more Arabic numerals.”

In Required Action “C.2”, there is an unnecessary space between the “.” and the “2”, which should be deleted.

This correction is required to ensure the correct formatting of the TS.

## REQUEST FOR ADDITIONAL INFORMATION 509-8591

16-210

Paragraph (a)(11) of 10 CFR 52.47 states that a design certification (DC) applicant is to propose Technical Specifications (TS) prepared in accordance with 10 CFR 50.36 and 50.36a. NUREG-1432, "Standard Technical Specifications (STS)-Combustion Engineering Plants," Rev. 4, provides NRC guidance on format and content of technical specifications as one acceptable means to meet 10 CFR 50.36 requirements. 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.

The Writer's Guide for Plant-Specific Improved Technical Specifications (TSTF-GG-05-01) also provides guidance for the format and content of the TS. There are format and content differences between the DCD and the Writer's Guide. These following corrections are necessary to ensure the completeness and accuracy of the TS and Bases.

Correct the wording in the Required Actions table for Technical Specification (TS) 3.5.2.

In response to RAI 8069, Question 16-18, the applicant divided Condition A into 2 Conditions and added a second Required Action. Because the Required Actions are separated by an OR Logical Connector and can be applied to either Condition, Condition A should be re-written to read "Restore train(s) to OPERABLE status."

This correction is required to ensure the accuracy and completeness of the TS.

16-211

Paragraph (a)(11) of 10 CFR 52.47 states that a design certification (DC) applicant is to propose Technical Specifications (TS) prepared in accordance with 10 CFR 50.36 and 50.36a. NUREG-1432, "Standard Technical Specifications (STS)-Combustion Engineering Plants," Rev. 4, provides NRC guidance on format and content of technical specifications as one acceptable means to meet 10 CFR 50.36 requirements. 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.

The Writer's Guide for Plant-Specific Improved Technical Specifications (TSTF-GG-05-01) also provides guidance for the format and content of the TS. There are format and content differences between the DCD and the Writer's Guide. These following corrections are necessary to ensure the completeness and accuracy of the TS and Bases.

The applicant is requested to correct the following editorial errors within Technical Specification (TS) 3.6.3:

- On page 3.6.3-1, the Logical Connector "AND" is not formatted correctly. It should appear flush left directly below the text in Required Action A.1, separated by a line break.
- On page 3.6.3-2, insert a line break between the bottom single line of the NOTE and the text of Required Action A.2. Ensure the corresponding text in the Completion Time column is lowered to align with the text in the Required Action column.
- On page 3.6.3-3, insert a line break between the bottom single line of the NOTE and the text of Required Action D.2. Ensure the corresponding text in the Completion Time column is lowered to align with the text in the Required Action column.

These corrections are required to ensure the correct formatting in the TS.

16-212

Paragraph (a)(11) of 10 CFR 52.47 states that a design certification (DC) applicant is to propose Technical Specifications (TS) prepared in accordance with 10 CFR 50.36 and 50.36a. NUREG-1432, "Standard Technical Specifications (STS)-Combustion Engineering Plants," Rev. 4, provides NRC guidance on format and content of technical specifications as one acceptable means to meet 10 CFR 50.36 requirements. 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

## REQUEST FOR ADDITIONAL INFORMATION 509-8591

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.

The Writer's Guide for Plant-Specific Improved Technical Specifications (TSTF-GG-05-01) also provides guidance for the format and content of the TS. There are format and content differences between the DCD and the Writer's Guide. These following corrections are necessary to ensure the completeness and accuracy of the TS and Bases.

The applicant is requested to address an alignment issue within Technical Specification (TS) 3.7.2.

In the Conditions column of the Required Actions table, the Condition designators "C" and "D" do not align vertically with Condition designators "A" and "B".

This correction is required to ensure the correct formatting of the TS.

### 16-213

Paragraph (a)(11) of 10 CFR 52.47 states that a design certification (DC) applicant is to propose Technical Specifications (TS) prepared in accordance with 10 CFR 50.36 and 50.36a. NUREG-1432, "Standard Technical Specifications (STS)-Combustion Engineering Plants," Rev. 4, provides NRC guidance on format and content of technical specifications as one acceptable means to meet 10 CFR 50.36 requirements. 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.

The Writer's Guide for Plant-Specific Improved Technical Specifications (TSTF-GG-05-01) also provides guidance for the format and content of the TS. There are format and content differences between the DCD and the Writer's Guide. These following corrections are necessary to ensure the completeness and accuracy of the TS and Bases.

Correct the formatting of a Surveillance Requirement (SR) within Technical Specification (TS) 3.7.10.

Section 2.5.6.b.3 of the Writer's Guide for Plant Specific Improved Technical Specifications states "Each Surveillance begins with the flush left Surveillance number consisting of the label "SR," two blank spaces and the Specification number followed by one or more additional digits."

For SR 3.7.10.2, there is only 1 space between "SR" and "3.7.10.2".

This correction is required to ensure the correct formatting of SR 3.7.10.2.

### 16-214

Paragraph (a)(11) of 10 CFR 52.47 states that a design certification (DC) applicant is to propose Technical Specifications (TS) prepared in accordance with 10 CFR 50.36 and 50.36a. NUREG-1432, "Standard Technical Specifications (STS)-Combustion Engineering Plants," Rev. 4, provides NRC guidance on format and content of technical specifications as one acceptable means to meet 10 CFR 50.36 requirements. 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.

The Writer's Guide for Plant-Specific Improved Technical Specifications (TSTF-GG-05-01) also provides guidance for the format and content of the TS. There are format and content differences between the DCD and the Writer's Guide. These following corrections are necessary to ensure the completeness and accuracy of the TS and Bases.

Correct the wording used in various statements within Technical Specifications (TS) 3.8.1 and 3.8.2, and perform a global check as necessary.

## REQUEST FOR ADDITIONAL INFORMATION 509-8591

Many times, the phrase “EDG(s) on one division” is used when it should be “EDG(s) in one division”. These corrections should be made in the following places at a minimum (the applicant is requested to perform a global check of the TS and Bases to ensure all corrections are made):

- TS 3.8.1
  - Condition B statement
  - Condition D (2<sup>nd</sup> statement)
  - Condition E statement
  - Required Action E.1
  - Condition H statement
- TS 3.8.2
  - Condition B statement

These corrections are required to ensure the accuracy of the TS and Bases.

### 16-215

Paragraph (a)(11) of 10 CFR 52.47 states that a design certification (DC) applicant is to propose Technical Specifications (TS) prepared in accordance with 10 CFR 50.36 and 50.36a. NUREG-1432, “Standard Technical Specifications (STS)-Combustion Engineering Plants,” Rev. 4, provides NRC guidance on format and content of technical specifications as one acceptable means to meet 10 CFR 50.36 requirements. 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.

The Writer’s Guide for Plant-Specific Improved Technical Specifications (TSTF-GG-05-01) also provides guidance for the format and content of the TS. There are format and content differences between the DCD and the Writer’s Guide. These following corrections are necessary to ensure the completeness and accuracy of the TS and Bases.

Correct a formatting error in the Surveillance Requirements (SR) within Technical Specification (TS) 3.1.8.

On page 3.8.1-4, the single lines that separates SR’s 3.8.1.1 and 3.8.1.2 and SR’s 3.8.1.3 and 3.8.1.4 don’t appear to be a straight line towards the left hand side of the page.

This correction is required to ensure the correct formatting of single lines.

### 16-216

Paragraph (a)(11) of 10 CFR 52.47 states that a design certification (DC) applicant is to propose Technical Specifications (TS) prepared in accordance with 10 CFR 50.36 and 50.36a. NUREG-1432, “Standard Technical Specifications (STS)-Combustion Engineering Plants,” Rev. 4, provides NRC guidance on format and content of technical specifications as one acceptable means to meet 10 CFR 50.36 requirements. 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.

The Writer’s Guide for Plant-Specific Improved Technical Specifications (TSTF-GG-05-01) also provides guidance for the format and content of the TS. There are format and content differences between the DCD and the Writer’s Guide. These following corrections are necessary to ensure the completeness and accuracy of the TS and Bases.

## REQUEST FOR ADDITIONAL INFORMATION 509-8591

Correct a formatting error in Surveillance Requirement (SR) 3.8.1.9.

The SR contains a statement followed by a list of three items. A line break needs to be inserted between the text of the SR and the first item "a."

This correction is required to ensure the correct formatting of SR 3.8.1.9.

### 16-217

Paragraph (a)(11) of 10 CFR 52.47 states that a design certification (DC) applicant is to propose Technical Specifications (TS) prepared in accordance with 10 CFR 50.36 and 50.36a. NUREG-1432, "Standard Technical Specifications (STS)-Combustion Engineering Plants," Rev. 4, provides NRC guidance on format and content of technical specifications as one acceptable means to meet 10 CFR 50.36 requirements. 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.

The Writer's Guide for Plant-Specific Improved Technical Specifications (TSTF-GG-05-01) also provides guidance for the format and content of the TS. There are format and content differences between the DCD and the Writer's Guide. These following corrections are necessary to ensure the completeness and accuracy of the TS and Bases.

Evaluate the wording of the Frequency for Surveillance Requirement (SR) 3.9.5.3.

The Frequency for SR 3.9.5.3 reads "24 hours when in REDUCED RCS INVENTORY". The staff finds that this Frequency modifier would be better presented as a Note in the SR column which could read "Only required to be met during operation with REDUCED RCS INVENTORY", thus having the Frequency read "24 hours".

If the applicant does change the Frequency and add a SR Note, the Bases for SR 3.9.5.3 would have to be amended as well.

This evaluation is to ensure the accuracy and presentation of the SR and Frequency.

### 16-218

Paragraph (a)(11) of 10 CFR 52.47 states that a design certification (DC) applicant is to propose Technical Specifications (TS) prepared in accordance with 10 CFR 50.36 and 50.36a. NUREG-1432, "Standard Technical Specifications (STS)-Combustion Engineering Plants," Rev. 4, provides NRC guidance on format and content of technical specifications as one acceptable means to meet 10 CFR 50.36 requirements. 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.

The Writer's Guide for Plant-Specific Improved Technical Specifications (TSTF-GG-05-01) also provides guidance for the format and content of the TS. There are format and content differences between the DCD and the Writer's Guide. These following corrections are necessary to ensure the completeness and accuracy of the TS and Bases.

Justify the omission of Reviewer's Notes in various sections of Technical Specification (TS) 5.0 Administrative Controls.

The Reviewer's Notes could prove beneficial to subsequent COL applicants who choose to reference the APR1400 design and to the NRC staff performing said reviews.

The omitted Reviewer's Notes are as follows:

- 5.1 (2 Reviewer's Notes) – refer to the unit staff.
- 5.2.2.a – refers to non-licensed operator staffing requirements.
- 5.3 – refers to minimum qualifications for the unit staff.
- 5.5.3 – refers to Post-Accident Sampling.
- 5.5.9 (2 Reviewer's Notes) within the Steam Generator (S/G) Program

## REQUEST FOR ADDITIONAL INFORMATION 509-8591

- 5.5.11 within the Ventilation Filter Testing Program (VFTP)
- 5.5.17 – refers to other LCOs as they relate to the Battery Monitoring and Maintenance Program
- 5.5.19.b – discusses NRC safety evaluation reports that should be listed
- 5.5.19.d – discusses the instrument functions that should be listed
- 5.6.4.c – discusses the NRC approval of the methodology for the calculation of the P-T Limits

This justification is required to ensure the completeness of the TS, and to facilitate potential COL applications referencing the APR1400 design.

### 16-219

Paragraph (a)(11) of 10 CFR 52.47 states that a design certification (DC) applicant is to propose Technical Specifications (TS) prepared in accordance with 10 CFR 50.36 and 50.36a. NUREG-1432, "Standard Technical Specifications (STS)-Combustion Engineering Plants," Rev. 4, provides NRC guidance on format and content of technical specifications as one acceptable means to meet 10 CFR 50.36 requirements. 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.

The Writer's Guide for Plant-Specific Improved Technical Specifications (TSTF-GG-05-01) also provides guidance for the format and content of the TS. There are format and content differences between the DCD and the Writer's Guide. These following corrections are necessary to ensure the completeness and accuracy of the TS and Bases.

Correct the title line of page 5.5-4 to align the text with the STS.

When continuing a Technical Specification from one page to the next, the term "(continued)" is placed next to the title name. This is done correctly on page 5.5-4, however the "(continued)" is incorrectly underlined along with the title name.

This correction is required to ensure the accuracy of the TS and to align the text with the STS.

### 16-220

Paragraph (a)(11) of 10 CFR 52.47 states that a design certification (DC) applicant is to propose Technical Specifications (TS) prepared in accordance with 10 CFR 50.36 and 50.36a. NUREG-1432, "Standard Technical Specifications (STS)-Combustion Engineering Plants," Rev. 4, provides NRC guidance on format and content of technical specifications as one acceptable means to meet 10 CFR 50.36 requirements. 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.

The Writer's Guide for Plant-Specific Improved Technical Specifications (TSTF-GG-05-01) also provides guidance for the format and content of the TS. There are format and content differences between the DCD and the Writer's Guide. These following corrections are necessary to ensure the completeness and accuracy of the TS and Bases.

Clarify the text in Technical Specification (TS) 5.5.5, which deviates from the STS.

The STS reads "...to track the FSAR, Section [ ], cyclic..." The APR1400 text reads "...to track the Chapter 3, cyclic..." The intended reference should include the document and the specific section/chapter, not just the chapter.

This clarification is required to ensure that all references to documents are done accurately and to align the text with the STS.

## REQUEST FOR ADDITIONAL INFORMATION 509-8591

16-221

Paragraph (a)(11) of 10 CFR 52.47 states that a design certification (DC) applicant is to propose Technical Specifications (TS) prepared in accordance with 10 CFR 50.36 and 50.36a. NUREG-1432, "Standard Technical Specifications (STS)-Combustion Engineering Plants," Rev. 4, provides NRC guidance on format and content of technical specifications as one acceptable means to meet 10 CFR 50.36 requirements. 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.

The Writer's Guide for Plant-Specific Improved Technical Specifications (TSTF-GG-05-01) also provides guidance for the format and content of the TS. There are format and content differences between the DCD and the Writer's Guide. These following corrections are necessary to ensure the completeness and accuracy of the TS and Bases.

Correct the placement of text within Technical Specification (TS) 5.5.19.

Section 5.5.19.b in the APR1400 TS reads "...using the NRC approved setpoint methodology, as listed below."

In response to RAI 8059, Question 16-55, the applicant agreed to provide a list of documents under a new proposed paragraph "h" within TS 5.5.19. Being that there is already a placeholder for the documents in paragraph "b" as described above, the staff finds that this is where the list of documents should be located. This would also align the APR1400 text with the STS. The applicant is requested to relocate the list of documents from paragraph "h" to paragraph "b" and to delete the newly proposed paragraph "h".

This clarification is required to ensure the accuracy and completeness of TS 5.5.19.

16-222

Paragraph (a)(11) of 10 CFR 52.47 states that a design certification (DC) applicant is to propose Technical Specifications (TS) prepared in accordance with 10 CFR 50.36 and 50.36a. NUREG-1432, "Standard Technical Specifications (STS)-Combustion Engineering Plants," Rev. 4, provides NRC guidance on format and content of technical specifications as one acceptable means to meet 10 CFR 50.36 requirements. 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.

The Writer's Guide for Plant-Specific Improved Technical Specifications (TSTF-GG-05-01) also provides guidance for the format and content of the TS. There are format and content differences between the DCD and the Writer's Guide. These following corrections are necessary to ensure the completeness and accuracy of the TS and Bases.

Correct the editorial error in Technical Specification (TS) 5.6.4.

Section 5.6.4.a contains a list of limits. The third limit on the list contains the text "MODE5". A space is required between the "MODE" and "5".

The correction is required to ensure the accuracy of TS 5.6.4.



**U.S.NRC**

United States Nuclear Regulatory Commission

*Protecting People and the Environment*