



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

1
2
3
4
5
6
7
8
9

*General Directions: This model SE provides the format for an SE of LARs to adopt traveler TSTF-592. TSTF-592 was approved as part of the CLIIP. This model SE can also be used as a template for LARs adopting TSTF-592 that have significant variations and are not using the CLIIP. The **[bolded bracketed]** information shows text that should be filled in for the specific amendment. The italicized wording provides guidance on what should be included in each section.*

DRAFT MODEL SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR
REGULATION RELATED TO TSTF-592, "REVISE AUTOMATIC DEPRESSURIZATION
SYSTEM (ADS) INSTRUMENTATION REQUIREMENTS"
AMENDMENT NO. **[XXX]** TO FACILITY OPERATING LICENSE NO. **[XXX-XX]**
AND AMENDMENT NO. **[XXX]** TO FACILITY OPERATING LICENSE NO. **[XXX-XX]**
[NAME OF LICENSEE]
[NAME OF FACILITY]
DOCKET NOS. 50-**[XXX]** AND 50-**[XXX]**

<u>Application (i.e., initial and supplements)</u>	<u>Safety Evaluation Date</u>
<ul style="list-style-type: none"> [Date], [ADAMS Accession No.] 	[Date]
	<u>Principal Contributors to Safety Evaluation</u>
	<ul style="list-style-type: none"> [Clint Ashley]

10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

1.0 PROPOSED CHANGES

[Name of licensee] (the licensee) requested changes to the technical specifications (TSs) for **[name of facility]** by license amendment request (LAR, application). In its application, the licensee requested that the U.S. Nuclear Regulatory Commission (NRC, the Commission) process the proposed amendment under the Consolidated Line Item Improvement Process (CLIIP). The proposed changes would revise the TS based on Technical Specifications Task Force (TSTF) Traveler TSTF-592, Revision 2, "Revise Automatic Depressurization System (ADS) Instrumentation Requirements" (TSTF-592) (Agencywide Documents Access and Management System (ADAMS) Accession No. ML23256A352), correction letter (ML23283A002), and the associated NRC staff safety evaluation (SE) of Traveler TSTF-592 (ML24029A148).

The proposed changes would revise the "Emergency Core Cooling System (ECCS) Instrumentation," TS Actions related to ADS instrumentation monitoring channels.

1
2 System Description

3
4 The purpose of the ECCS instrumentation is to initiate appropriate responses from systems to
5 ensure that the fuel is adequately cooled in the event of a design basis accident or transient.
6 The ECCS uses two independent methods (flooding and spraying) to cool the core during a
7 loss-of-coolant accident (LOCA).

8
9 The low-pressure ECCS subsystems are designed to mitigate a large break LOCA where
10 reactor vessel pressure rapidly decreases to the point at which the low-pressure ECCS pumps
11 can inject water. There are two redundant divisions for each of the low-pressure ECCS
12 subsystems.

13
14 The high-pressure ECCS subsystem is designed to mitigate small break LOCAs during which
15 reactor vessel pressure remains higher than the ability of the low-pressure ECCS pumps to
16 inject water. There is a single high-pressure ECCS subsystem.

17
18 The ADS provides redundancy for the single high-pressure ECCS subsystem. In the event of a
19 failure of the high-pressure ECCS subsystem, the ADS valves open to release reactor vessel
20 pressure to the suppression pool, rapidly reducing the pressure to the point at which a
21 low-pressure ECCS subsystem can inject water.

22
23 The ECCS instrumentation associated with ADS initiation uses sensor information such as
24 reactor vessel water level, drywell pressure, and low-pressure pump discharge pressure, as well
25 as timers (time delays) to automatically initiate ADS.

26
27 1.1 Proposed TS Changes to Adopt TSTF-592

28 *{NOTE: Be sure to verify the nomenclature and numbering are accurate for the plant and revise*
29 *as needed.}*

30 *{NOTE: There are boiling water reactor (BWR) plants with an ADS initiation design that varies*
31 *from the design assumed in the STS. The effect of these variations and applicability of the*
32 *traveler will need to be evaluated on a plant-specific basis.}*

33 In accordance with the NRC staff-approved TSTF-592, the licensee proposed changes that
34 would revise TS 3.3.5.1, "ECCS Instrumentation". Specifically, the licensee proposed the
35 following changes to adopt TSTF-592:

36
37 1.1.1 Proposed Changes to TS 3.3.5.1, "ECCS Instrumentation"

- 38
- 39 • TS Table 3.3.5.1-1 is revised to reference Condition H instead of Condition G for
40 Functions 4.e, 4.f, 4.h, 5.e, **[5.f, and 5.h][and 5.g]**.
 - 41 • TS 3.3.5.1, Required Action G.1, is revised to delete the Note.
 - 42 • TS 3.3.5.1 is revised to add a new Condition H and associated remedial actions.
 - 43 ○ Condition H states, "As required by Required Action A.1 and referenced in
44 Table 3.3.5.1-1."

- 1 ○ Required Action H.1 states, “Declare ADS valves inoperable,” and is modified by
2 two Notes. The first Note limits the Required Action applicability to Functions 4.e,
3 4.f, **[5.e, and 5.f][and 5.e]**. The second Note limits the Required Action
4 applicability to when both ADS trip systems are inoperable due to **[Core**
5 **Spray][LPCS]**/LPCI Pump Discharge Pressure - High channels being
6 inoperable. The Completion Time is “1 hour from discovery of loss of ADS
7 initiation capability in both trip systems.”
- 8 ○ Required Action H.2 states, “Restore affected channels to OPERABLE status,”
9 and it is modified by two Notes. The first Note limits the Required Actions
10 applicability to Functions 4.e, 4.f, **[5.e, and 5.f][and 5.e]**. The second Note limits
11 the Required Actions applicability to when one ADS trip system is inoperable due
12 to **[Core Spray][LPCS]**/LPCI Pump Discharge Pressure – High channels being
13 inoperable. The Completion Time is 96 hours from discovery of inoperable
14 channels concurrent with **[HPCI][HPCS]** or RCIC [reactor core isolation cooling]
15 inoperable, and 8 days from discovery of inoperable channels. The option of
16 including a Risk Informed Completion Time alternative is included.
- 17 ○ Required Action H.3 states, “Restore channel to OPERABLE status,” with a
18 Completion Time of “30 days.”
- 19 • TS 3.3.5.1 current Action H is renamed Action I, and is modified to include the new
20 Condition H.

21 1.1.2 Proposed Editorial Changes to the Presentation of Risk Informed Completion Times.

22 The presentation of Risk Informed Completion Times (RICT) applicable to Completion Times
23 that state “from discovery” is revised as follows to provide consistency and clarity, without
24 changing the intent of the TS.

25 *{NOTE: Not all licensees will have these changes, mostly just plants with TS based on*
26 *NUREG-1433, use this option. Be sure to verify the nomenclature and numbering are accurate*
27 *for the plant and revise as needed.}*

28 TS 3.3.5.1, Required Action **[F.2 and G.2]** Completion Time currently states (in part):

- 29 • 96 hours from discovery of inoperable channel concurrent with HPCI or **[reactor core**
30 **isolation cooling (RCIC)][RCIC]** inoperable

31 **[OR**

32 **In accordance with the Risk Informed Completion Time Program]**

33 The Completion Time is revised to state:

- 34 • 96 hours **[or in accordance with the Risk Informed Completion Time Program]** from
35 discovery of inoperable channel concurrent with HPCI or **[reactor core isolation**
36 **cooling (RCIC) inoperable][RCIC]**.

1 {NOTE Not all licensees will have this change, mostly just plants with TS based on
2 NUREG-1434, use this option. Be sure to verify the nomenclature and numbering are accurate
3 for the plant and revise as needed.}

4 TS 3.8.1, Required Action A.3 Completion Time currently states (in part):

- 5 • 24 hours from discovery of two divisions with no offsite power

6 **[OR**

7 **In accordance with the Risk Informed Completion Time Program]**

8 The Completion Time is revised to state:

- 9 • 24 hours **[or in accordance with the Risk Informed Completion Time Program]** from
10 discovery of two divisions with no offsite power

11 1.2 Additional Proposed TS Changes

12

13 {NOTE: Use this section if variations are proposed. Add additional subsections if needed.
14 Editorial variations discussed below in section 1.2.1 do not warrant removal from the CLIP and
15 do not require any additional technical branches to be on the review. Variations discussed in
16 section 1.2.2, may remove the LAR from the CLIP and may require additional technical review
17 depending on the significance of the variations. Discuss the variations with STSB staff before
18 engaging other technical review branches.}

19

20 In addition to the changes proposed consistent with the traveler discussed in section 1.1, the
21 licensee proposed the variation[s] below.

22

23 1.2.1 Editorial Variations

24

25 {NOTE: Use this section if the plant has different numbering/nomenclature or modify accordingly
26 for other editorial changes made.}

27

28 The licensee noted that **[name of facility]** TSs have different numbering **[and nomenclature]**
29 than standard technical specifications (STSs).

30

31 1.2.2 Other Variations

32

33 {NOTE: Use this section if the plant has variations other than editorial variations discussed in
34 1.2.1.}

35

36 2.0 REGULATORY EVALUATION

37

38 2.1 Applicable Regulatory Requirements and Guidance

39

40 The regulation under Title 10 of the *Code of Federal Regulations* (10 CFR) 50.36(b) requires
41 that:

42

43 Each license authorizing operation of a ... utilization facility ... will include
44 technical specifications. The technical specifications will be derived from the

1 analyses and evaluation included in the safety analysis report, and amendments
2 thereto, submitted pursuant to [10 CFR] 50.34 ["Contents of applications;
3 technical information"]. The Commission may include such additional technical
4 specifications as the Commission finds appropriate.
5

6 The categories of items required to be in the TS are listed in 10 CFR 50.36(c). The regulation at
7 10 CFR 50.36(c)(2) requires that TS include limiting conditions for operations (LCOs). Per
8 10 CFR 50.36(c)(2)(i), LCOs "are the lowest functional capability or performance levels of
9 equipment required for safe operation of the facility." The regulation also requires that when an
10 LCO of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any
11 remedial action permitted by the TS until the condition can be met.
12

13 The NRC staff's guidance for the review of TS is in NUREG-0800, "Standard Review Plan for
14 the Review of Safety Analysis Reports for Nuclear Power Plants: LWR [Light-Water Reactor]
15 Edition" (SRP), Chapter 16, Section 16.0, "Technical Specifications," March 2010
16 (ML100351425). The NRC staff's review includes consideration of whether the proposed
17 changes are consistent with the **[insert applicable NUREG from list in footnote]**¹.
18

19 3.0 TECHNICAL EVALUATION

20 3.1 Proposed TS Changes to Adopt TSTF-592

21 The regulatory framework the NRC staff used to determine the acceptability of the licensee's
22 proposed changes consisted of the requirements and guidance listed in section 2.1 of this SE.
23 The NRC staff compared the licensee's proposed TS changes summarized in section 1.1 of this
24 SE against the changes approved in TSTF-592. In accordance with SRP Chapter 16.0, the NRC
25 staff determined that the STS changes approved in TSTF-592 are applicable to **[name of
26 facility]** TSs because the **[name of facility]** is a **[insert BWR design: BWR/4, BWR/6, etc.]**
27 and the NRC staff approved the TSTF-592 changes for BWR designs.
28

29 TSTF-592 revised the ADS instrumentation remedial action requirements contained in the
30 ECCS instrumentation specification, STS 3.3.5.1, to correct overly restrictive action
31 requirements, and to treat less significant channel inoperabilities consistently. **[Insert if
32 applicable to licensee: In addition, TSTF-592 revised the presentation of Risk Informed
33 Completion Times to provide consistency and clarity without changing the intent of the
34 STS.]** The NRC staff finds that the licensee's proposed changes to **[name of facility]** TS in
35 section 1.1 of this SE are consistent with those found acceptable in TSTF-592.
36
37
38

39 In the NRC SE of TSTF-592, the NRC staff concluded that the proposed changes to
40 STS 3.3.5.1 were acceptable because the remedial actions to be taken until the LCO can be
41 met provided protection to the health and safety of the public. The NRC staff also concluded
42 that there was reasonable assurance that proposed changes would continue to ensure that

¹U.S. Nuclear Regulatory Commission, "Standard Technical Specifications, General Electric BWR/4 Plants," NUREG-1433, Volume 1, "Specifications," and Volume 2, "Bases," Revision 5.0, September 2021 (ML21272A357 and ML21272A358, respectively). NUREG-1433 provides the STS for BWR/4 plant designs, but is also representative of the BWR/2, BWR/3, and, in some cases, the BWR/5 plant design.

•U.S. Nuclear Regulatory Commission, "Standard Technical Specifications, General Electric BWR/6 Plants," NUREG-1434, Volume 1, "Specifications," and Volume 2, "Bases," Revision 5.0, September 2021 (ML21271A582 and ML21271A596, respectively). NUREG-1434 provides the STS for BWR/6 plant designs but is also representative in some cases of the BWR/5 plant design.

1 when STS LCO 3.3.5.1 was not met, the licensee shall shut down the reactor or follow any
2 remedial action permitted by the STS until the condition could be met. For example, the
3 proposed remedial actions continued to ensure that appropriate actions were taken for channel
4 inoperabilities associated with pump pressure and manual initiation that resulted in 1) a loss of
5 automatic initiation capability in both ADS trip systems, 2) a loss of automatic initiation capability
6 for one ADS trip system, or 3) no loss of automatic initiation capability in either trip system but
7 required restoration to ensure overall redundancy and diversity of the ADS trip system functions.
8 Therefore, the NRC staff found that the proposed changes to STS 3.3.5.1 were acceptable
9 because they continued to meet the requirements of 10 CFR 50.36(c)(2)(i) as discussed in
10 section 3.0 of the NRC staff's SE of TSTF-592. For these same reasons, the NRC staff
11 concludes that the corresponding proposed changes to the **[name of facility]** TS in section 1.1
12 of this SE continue to meet the requirements of 10 CFR 50.36(c)(2)(i).

13 14 3.2 Additional Proposed Changes

15
16 *{NOTE: Use this section if variations are proposed. Add additional subsections if needed.
17 Variations evaluated in section 3.2.2 may remove the LAR from the CLIP and may require
18 additional technical review depending on the significance of the variations. Additionally, the
19 variations may require additional regulations/guidance being included in the Regulatory
20 Evaluation Section.}*

21
22 In addition to the changes proposed consistent with the traveler discussed in sections 1.1, the
23 licensee proposed the variation[s] below.

24 25 3.2.1 Editorial Variations

26
27 *{NOTE: Use this section if the plant has different numbering/nomenclature or modify accordingly
28 for other changes described in section 1.2.1 of this SE.}*

29
30 The LAR noted that the **[name of facility]** TSs have different numbering **[and nomenclature]**
31 than STS. The NRC staff finds that the different TS numbering **[and nomenclature]** changes
32 proposed in the LAR are acceptable because they do not substantively alter TS requirements.

33 34 3.2.2 Other Variations

35
36 *{NOTE: Use this section if the plant has variations described in section 1.2.2 of this SE.}*

37 38 3.3 TS Change Consistency

39
40 The NRC staff reviewed the proposed TS changes for technical clarity and consistency with the
41 existing requirements for customary terminology and formatting. The NRC staff finds that the
42 proposed changes are consistent with chapter 16.0 of the SRP and are therefore acceptable.

43 44 4.0 CONCLUSION

45
46 The Commission has concluded, based on the considerations discussed above, that: (1) there
47 is reasonable assurance that the health and safety of the public will not be endangered by
48 operation in the proposed manner, (2) there is reasonable assurance that such activities will be
49 conducted in compliance with the Commission's regulations, and (3) the issuance of the
50 amendment will not be inimical to the common defense and security or to the health and safety
51 of the public.