



February 23, 2011

ULNRC-05737

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555-0001

10CFR 50.90

Ladies and Gentlemen:

**DOCKET NUMBER 50-483  
CALLAWAY PLANT UNIT 1  
UNION ELECTRIC CO.  
FACILITY OPERATING LICENSE NPF-30  
COMPLETION TIME EXTENSIONS FOR TS 3.3.2  
ENGINEERED SAFETY FEATURE ACTUATION SYSTEM (ESFAS)  
INSTRUMENTATION FUNCTIONS  
TAC NO. ME2822 (LDCN 09-0039 SUPPLEMENT)**

- References:
1. AmerenUE letter ULNRC-05665 dated November 25, 2009
  2. AmerenUE letter ULNRC-05694 dated April 22, 2010
  3. AmerenUE letter ULNRC-05704 dated May 14, 2010
  4. NRC letter dated May 5, 2010, "Callaway Plant, Unit 1 – Issuance of Amendment RE: Revision of Technical Specification 3.3.2, "Engineered Safety Feature Actuation System Instrumentation," Function 6.G, Condition J (Exigent Circumstances) (TAC. NO. ME3595)," ADAMS Accession No. ML101100665
  5. AmerenUE letter ULNRC-05724 dated August 24, 2010
  6. AmerenUE letter ULNRC-05731 dated September 29, 2010
  7. Ameren Missouri letter ULNRC-05738 dated November 4, 2010

Pursuant to 10 CFR 50.90, "Application for Amendment of License or Construction Permit," Ameren Missouri (Union Electric Company) submitted a license amendment request via Reference 1 that proposed changes to Technical Specification (TS) 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation," as contained in Facility Operating License Number NPF-30 for the Callaway Plant. Ameren Missouri responded to NRC requests for additional information (RAIs) on

the probabilistic risk assessment (PRA) in support of that amendment application via References 2, 3, and 7.

The changes requested and described in Attachment 2 of Reference 1 included, among others, the revision of Condition J of TS 3.3.2. Specifically, a new Note for limiting Separate Condition entry was proposed, along with the revision of the Completion Times of Required Actions J.1 and J.2. However, after the issuance of License Amendment No. 196 in Reference 4, it was recognized in Reference 5 that the proposed Note on Separate Condition entry would not accomplish the intended function discussed in Reference 1 since Condition J had been revised by Amendment 196 to cover one *or more* inoperable channels, thereby covering the inoperability of one, two, three, or all four channels in Function 6.g, "Trip of All Main Feedwater Pumps," of TS Table 3.3.2-1. Reference 5 provided updated risk metrics to address the loss of the ESFAS 6.g actuation function for up to 24 hours.

Reference 6 provided responses to four additional electronic RAIs issued on September 7 and 8, 2010, with respect to Reference 5. Those RAI responses included consideration of the feedback received during a teleconference held on September 21, 2010, between Ameren Missouri and NRC staff. Reference 6 provided two proposed Conditions (TS 3.3.2 Conditions J and M) for Function 6.g, one Condition for a loss of actuation function with a 1-hour channel trip Completion Time, and a separate Condition for no loss of actuation function with a 24-hour channel trip Completion Time.

Two additional electronic RAIs were received on October 20, 2010, in which the NRC staff questioned the proposed TS wording in Reference 6. The proposed TS wording in Attachment 2 was discussed in a public meeting (conducted by telephone conference) on November 18, 2010 and in a public meeting conducted at NRC headquarters on January 25, 2011. This letter serves to provide final responses to the remaining RAIs and a final supplement to the license amendment request wherein finalized TS wording is proposed based on the public meeting discussions. Specifically, Attachment 1 provides the responses to those RAIs which require new TS and Bases markups. Attachments 2 through 4 provide the Markup of Technical Specifications, Retyped Technical Specifications, and Proposed Technical Specification Bases Changes, respectively. Attachments 2 through 4 completely supersede Attachments 2 through 4 of Reference 1.

The entire set of requested TS and Bases changes is contained in Attachments 2 through 4 for completeness and preventing confusion as to the complete set of requested changes. The changes to TS 3.3.2 Conditions O and Q remain the same as submitted in Reference 1.

Attachment 4 hereto is provided for information only. Final TS Bases changes will be processed under the program described in TS 5.5.14, "Technical Specifications Bases Control Program," at the time this amendment is implemented.

The risk basis for the 24-hour Completion Times is contained in Reference 1. The TS changes and risk metrics contained in Reference 5 are entirely superseded and should not be cited in the NRC Safety Evaluation for this amendment.

The conclusions of the licensing evaluations submitted in Reference 1 (i.e., the no significant hazard consideration (NSHC) evaluation and the environmental consideration (EC) evaluation in Sections 5.1 and 6.0 of Attachment 1 to Reference 1, respectively) remain valid and unchanged. In addition, it should be noted that, similar to the original amendment request, there are no commitments contained in this letter.

The Callaway Onsite Review Committee has reviewed and approved the submittal of the revised TS and Bases markups.

Ameren Missouri requests approval of this license amendment request prior to March 31, 2011. In addition, Ameren Missouri requests that the license amendment be made effective upon NRC issuance, to be implemented within 90 days from the date of issuance.

In accordance with 10 CFR 50.91, "Notice for Public Comment; State Consultation," Section (b)(1), a copy of this letter is being provided to the designated Missouri State official. If you have any questions on this amendment application, please contact me at (573) 676-8719 or Mr. Tom Elwood at (314) 225-1905.

Very truly yours,

Executed on: 2/23/2011



Scott Maglio  
Regulatory Affairs Manager

GGY/nls

#### Attachments

- 1 – RAI Responses
- 2 – Markup of Technical Specifications
- 3 – Retyped Technical Specifications
- 4 – Proposed Technical Specification Bases Changes (for information only)

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# ATTACHMENT 1

## RAI RESPONSES

REQUEST FOR ADDITIONAL INFORMATION  
CALLAWAY PLANT,  
UNION ELECTRIC COMPANY,  
LICENSE AMENDMENT SUPPLEMENT (LCDN 09-0039)  
FOR COMPLETION TIME EXTENSIONS FOR TS 3.3.2,  
ENGINEERED SAFETY FEATURE ACTUATION SYSTEM (ESFAS)  
INSTRUMENTATION FUNCTIONS  
TAC NUMBER ME2822

The NRC staff requests additional information to complete its review of the license amendment request for revision of Technical Specification (TS) 3.3.2, "Engineered Safety Feature System (ESFAS) Instrumentation," Function 6.g, "Trip of all Main Feedwater (MFW) Pumps," Action Statement J for the Condition of "One or more Main Feedwater Pumps trip channel(s) inoperable," and the unused Condition M.

On September 7, 2010, the NRC staff requested additional information (ML102510275) to inquire on the justification for the increase in Auxiliary Feedwater (AFW) unavailability from 1 to 24 hours, the operational intent behind this increase, and the potential changes to the "No Significant Hazards Determination." In response to this request, the licensee submitted an additional amendment request supplement dated September 29, 2010 (ML102730351). This supplement modified TS 3.3.2 Condition J and utilized unused Condition M in order to preserve the ESFAS 6.g AFW safety function following the 1-hour Completion Time. This supplement also asserted that no changes are required for the "No Significant Hazards Determination" stating that the licensee's original responses remain unaffected.

Based on continued NRC staff review of the additional supplement submittal, the NRC staff has two additional questions:

NRC staff analysis of the licensee's proposed modifications to TS 3.3.2 Conditions J and M revealed MFW pump trip channel inoperability combinations that are not addressed by either of the proposed Conditions. This inoperability of certain combinations of MFW pump trip channels results in the unavailability of the safety function to start the AFW pumps on loss of both MFW pumps. Without a prescribed Condition entry, the licensee would have to enter TS 3.0.3.

In addition, the staff's assessment of the licensee's application of "separate Condition entry" to be allowed "per channel" and per multiple MFW pumps in the proposed Condition wording is inconsistent with the TS 3.3.2 ESFAS 6.g function principle configuration of separate condition entry "per pump."

Therefore, the NRC staff has the following two additional questions:

Question (1):

Provide justification for allowing inoperability combinations that are not addressed by either of the proposed Conditions J and M and therefore leading to TS 3.0.3 entry.

Response:

Based on public meetings with the NRC staff that were held on November 18, 2010 and January 25, 2011, Condition J has been revised to address only the inoperability of one channel. The current 2-hour bypass testing Note allowance has been retained. New Condition M has been revised to address the inoperability of two channels as long as the ESFAS 6.g actuation function remains available from one actuation train. The Completion Time for placing inoperable channel(s) in the tripped condition is 24 hours in both Conditions J and M. Otherwise a plant shutdown to MODE 3 is required within 30 hours.

Under Conditions J and M the ESFAS 6.g actuation function is maintained from one actuation train as discussed in Section 1.A below. When the ESFAS 6.g actuation function is not available from either actuation train, LCO 3.0.3 will be entered except as covered under new footnotes (u), (v), and (w) in TS Table 3.3.2-1 as discussed in Section 1.B below.

**1.A Actuation Function Available from One Actuation Train**

It is proposed that Condition J be revised from:

“One or more Main Feedwater Pumps trip channel(s) inoperable”

to read

“One channel inoperable.”

If a single channel on one MFW pump were found to be inoperable, that single inoperable channel would be tripped within 24 hours in accordance with revised Required Action J.1. After that channel is tripped, plant operation can continue indefinitely with no time limit. The plant does not exit Condition J until that inoperable channel is restored to OPERABLE status. If a 2<sup>nd</sup> channel in the same separation group on the other MFW pump were to become inoperable at some future time, new Condition M would be entered. There will be no separate Condition entry allowance for Condition J, as discussed further in the response to RAI Question #2 below, since the Required Channels in TS Table 3.3.2-1 will no longer be specified on a per pump basis.

Since the risk impact associated with the loss of one train of BOP ESFAS actuation logic and actuation relays is greater than the loss of individual analog channel input(s) into that BOP ESFAS train, it is proposed that new TS 3.3.2 Condition M be added to read:

“Two channels inoperable.

AND

AFW actuation on Trip of all Main Feedwater Pumps maintained from one actuation train.”

New Required Actions M.1 (“Place channels in trip”) and M.2 (“Be in MODE 3”) would have 24-hour and 30-hour Completion Times, respectively.

New Condition M would assure that the ESFAS Function 6.g AFW start signal, given the loss of two channels within the same separation group, could be generated by the operable channels from the other separation group to both motor-driven AFW pumps via cross train actuations. If Condition M is not exited within 24 hours, Required Action M.1 will result in a motor-driven AFW actuation due to the required tripping of the inoperable channels.

**1.B Actuation Function Unavailable**

If the actuation function provided by ESFAS Function 6.g is not available, it is due to the inoperability of redundant separation group channel inputs either on separate MFW pumps or on the same MFW pump. The loss of the actuation function requires at least two channels in different separation groups to be inoperable.

With the rewording of Condition J and the deletion of the separate Condition entry allowance, however, Conditions J and M do not address the following scenario. If the turbine control circuitry associated with one MFW pump is reset and that pump is not providing flow to the steam generators (SGs) as discussed in Reference 4 (License Amendment 196), both channels associated with that MFW pump are inoperable when its turbine control circuitry is reset during the process of placing the pump into service or removing it from service. With no Condition to enter, this would place the plant in LCO 3.0.3. In order to address these normal operation evolutions, a series of footnotes will be added to TS Table 3.3.2-1 for Function 6.g.

Existing footnote (n) of TS Table 3.3.2-1 addresses the startup of the first MFW pump and the removal of the last operating MFW pump from service.

New footnote (u) would address the startup of the second MFW pump, to read as follows:

“(u) During startup of the second main feedwater pump, the following exception applies: The requirement for four OPERABLE channels is met if two required channels are OPERABLE on the associated main feedwater pump in operation supplying feedwater to the SGs and two required channels are in the tripped condition on the second main feedwater pump.”

Prior to starting the second MFW pump, jumpers will be installed per new footnote (u) to effect channel trips on the two channels associated with that MFW pump prior to resetting the pump's turbine control circuitry. New footnote (u) allows an exception during the startup of the second MFW pump when one MFW pump is in operation supplying feedwater to the SGs and the second MFW pump turbine control circuitry is reset and that pump is not supplying feedwater to the SGs. If the channels associated with the operating MFW pump are OPERABLE and the channels associated with the reset MFW pump turbine controls are in the tripped condition, footnote (u) allows an exception whereby the OPERABILITY requirement of four Required Channels is met.

New footnote (v) would address the removal of the first of two operating MFW pumps from service, to read as follows:

“(v) During removal of the first of two operating main feedwater pumps from service, the following exception applies:

(1) LCO 3.0.3 is not applicable for up to 1 hour for the channels associated with the first main feedwater pump,

OR

(2) The requirement for four OPERABLE channels is met if two required channels are OPERABLE on the associated main feedwater pump in operation supplying feedwater to the SGs and two required channels on the main feedwater pump to be removed from service are in the tripped condition.”

Removal of the first of two operating MFW pumps from service may be performed without trip jumpers per new footnote (v1) or with trip jumpers installed per new footnote (v2).

Footnote (v) allows an exception to the LCO Applicability requirements in MODES 1 and 2 and that footnote is added to the column titled “Applicable MODES or Other Specified Conditions” in TS Table 3.3.2-1. During the removal of the first of two operating MFW pumps from service, when one MFW pump is in operation supplying feedwater to the SGs and the second MFW pump turbine control circuitry is reset and that pump is not supplying feedwater to the SGs, Function 6.g is unavailable until the channels associated with the reset MFW pump turbine controls (one in each separation group) are placed in the tripped condition. Given the TS markups in Attachment 2, there will be no Condition to enter in LCO 3.3.2 which corresponds to this operating state which is encountered at least once every operating cycle. New footnote (v1) provides an exception to entering LCO 3.0.3 for up to 1 hour for the channels associated with the first MFW pump to be removed from service. This 1-hour period of ESFAS Function 6.g unavailability is justified given the low likelihood of occurrence of an event requiring actuation of the motor-driven AFW pumps during this short time period, the diversity of

other actuation signals that are credited in the accident analyses such as low-low steam generator water level and safety injection, and the heightened operator awareness that accompanies this evolution.

The use of combinational logic in new footnote (v) is consistent with the approach used in Callaway License Amendments 197 and 198 on ESFAS Functions 4 and 5 in current footnotes (i) and (j).

New footnote (w) repeats new footnote (v2), to read as follows:

“(w) During removal of the first of two operating main feedwater pumps from service, the following exception applies: The requirement for four OPERABLE channels is met if two required channels are OPERABLE on the associated main feedwater pump in operation supplying feedwater to the SGs and two required channels on the main feedwater pump to be removed from service are in the tripped condition.”

Footnotes (u) and (w) allow a conditional redefinition of channel OPERABILITY requirements such that normal plant operating evolutions do not require TS Condition entries. As such, footnotes (u) and (w) modify the four-channel requirement for ESFAS Function 6.g which is indicated by placing “(u)” and “(w)” in a superscripted position next to the “4” in the “Required Channels” column of TS Table 3.3.2-1. New footnote (w) allows an exception during the removal of the first MFW pump from service when one MFW pump is in operation supplying feedwater to the SGs and the second MFW pump turbine control circuitry is reset and that pump is not supplying feedwater to the SGs. If the channels associated with the operating MFW pump are OPERABLE and the channels associated with the reset MFW pump turbine controls are in the tripped condition, the OPERABILITY requirement of four Required Channels is met.

When both MFW pumps are in operation supplying feedwater to the SGs, footnotes (u) and (w) no longer apply.

## **1.C Conclusion**

Attachment 2 contains the complete set of TS changes being requested with respect to LDCN 09-0039 and TAC Number ME2822. All previously requested TS changes are superseded by Attachment 2.

### Question (2):

Provide justification for allowing the use of “separate Condition entry” on a “per channel” level and per multiple MFW pumps when the TS 3.3.2 ESFAS 6.g function principle configuration of separate Condition entry is “per pump.”

Response:

The Required Channels column in TS Table 3.3.2-1 for the ESFAS 6.g function has been changed from “2 per pump” to “4.” Separate Condition entry is no longer allowed.

**Effect on NSHC Determination of Reference 1**

There is no change to the responses to the three questions of 10 CFR 50.92 in Reference 1. The introduction in Section 5.0 of Attachment 1 to Reference 1 would be affected as follows with revisions indicated (which would also affect the *Description of amendment request* in 75 FR 27833 dated May 18, 2010):

“This section addresses the standards of 10 CFR 50.92 as well as the applicable regulatory requirements and acceptance criteria.

This amendment application submits a proposed change to Technical Specification (TS) 3.3.2, “Engineered Safety Feature Action System (ESFAS) Instrumentation,” that would add a new Required Action Q.1 to require restoration of an inoperable Balance of Plant ESFAS (BOP ESFAS) train to OPERABLE status within 24 hours. Currently, Condition Q of TS 3.3.2 for Function 6.c of TS Table 3.3.2-1 requires the plant to enter a shutdown track to MODE 3 within 6 hours and to MODE 4 within 12 hours with no allowed outage time provided for restoration. In addition, the Completion Time for TS 3.3.2 Required Action O.1 to trip an inoperable channel that provides an input to BOP ESFAS would also be extended to 24 hours. Shutdown track Completion Times in Condition Q to be in MODES 3 and 4 would be increased to reflect the longer restoration time. TS 3.3.2 Condition J would be revised to cover only the inoperability of one channel and new TS 3.3.2 Condition M would be added to cover the inoperability of two channels provided the actuation function can still be performed from one actuation train. New footnotes (u), (v), and (w) would be added to TS Table 3.3.2-1 to address the normal plant operating evolutions associated with main feedwater pump startup and shutdown. This is a risk-informed amendment request following the guidance of NRC Regulatory Guides (RGs) 1.174, 1.177, and 1.200 Revision 1.”

## ATTACHMENT 2

### MARKUP OF TECHNICAL SPECIFICATIONS

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
I. One channel inoperable.	<p>----- NOTE ----- The inoperable channel may be bypassed for up to 12 hours for surveillance testing of other channels.</p> <p>I.1 Place channel in trip.</p> <p><u>OR</u></p> <p>I.2 Be in MODE 3.</p>	<p>72 hours</p> <p>78 hours</p>
<del>J. One or more Main Feedwater Pumps trip channel(s) inoperable.</del>	<del>----- NOTE ----- One inoperable channel may be bypassed for up to 2 hours for surveillance testing of other channels.</del> <p><del>J.1 Place channel(s) in trip.</del></p> <del><u>OR</u></del> <p><del>J.2 Be in MODE 3.</del></p>	<del>1 hour</del> <p><del>7 hours</del></p>

(continued)

→  
**INSERT A**

INSERT A

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>J. One channel inoperable.</p>	<p>-----NOTE-----                      The inoperable channel may be bypassed for up to 2 hours for surveillance testing of other channels.                      -----</p> <p>J.1 Place channel in trip.</p> <p><u>OR</u></p> <p>J.2 Be in MODE 3.</p>	<p>24 hours</p> <p>30 hours</p>

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
M. <del>Not used.</del> <i>INSERT B</i>		
N. One or more Containment Pressure - Environmental Allowance Modifier channel(s) inoperable.	N.1 Place channel(s) in trip. <u>OR</u> N.2.1 Be in MODE 3. <u>AND</u> N.2.2 Be in MODE 4.	72 hours  78 hours  84 hours
O. One channel inoperable.	O.1 Place channel in trip. <u>AND</u> O.2 Restore channel to OPERABLE status.	<del>4 hour</del> <i>24 hours</i>  During performance of the next required COT

(continued)

INSERT B

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>M. Two channels inoperable.</p> <p><u>AND</u></p> <p>AFW actuation on Trip of all Main Feedwater Pumps maintained from one actuation train.</p>	<p>M.1 Place channels in trip.</p> <p><u>OR</u></p> <p>M.2 Be in MODE 3.</p>	<p>24 hours</p> <p>30 hours</p>

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>P. One or more channel(s) inoperable.</p>	<p>P.1 Declare associated auxiliary feedwater pump(s) inoperable.</p> <p><u>AND</u></p> <p>P.2 Declare associated steam generator blowdown and sample line isolation valve(s) inoperable.</p>	<p>Immediately</p> <p>Immediately</p>
<p>Q. One train inoperable.</p>	<p>----- NOTE ----- One train may be bypassed for up to 2 hours for surveillance testing provided the other train is OPERABLE. -----</p> <p><i>INSERT C</i> →</p> <p><del>Q.1</del> <i>Q.2.1</i> Be in MODE 3.</p> <p><u>AND</u> →</p> <p><i>Q.2.2</i> <i>1</i> Be in MODE 4.</p>	<p><del>6</del> hours <i>30</i></p> <p><del>12</del> hours <i>36</i></p>
<p>R. One or both train(s) inoperable.</p>	<p>R.1 Restore train(s) to OPERABLE status.</p> <p><u>OR</u></p> <p>R.2.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>R.2.2 Be in MODE 4.</p>	<p>48 hours</p> <p>54 hours</p> <p>60 hours</p>

(continued)

INSERT C

REQUIRED ACTION	COMPLETION TIME
Q.1 Restore train to OPERABLE status.  <u>OR</u>	24 hours

No Changes

Table 3.3.2-1 (page 8 of 11)  
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE <sup>(a)</sup>
6. Auxiliary Feedwater					
a. Manual Initiation	1, 2, 3	1/pump	P	SR 3.3.2.8	NA
b. Automatic Actuation Logic and Actuation Relays (SSPS)	1,2,3	2 trains	G	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA
c. Automatic Actuation Logic and Actuation Relays (BOP ESFAS)	1,2,3	2 trains	Q	SR 3.3.2.3	NA
d. SG Water Level Low-Low					
(1) Steam Generator Water Level Low-Low (Adverse Containment Environment)	1, 2, 3	4 per SG	D	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≥ 20.6% <sup>(s)</sup> of Narrow Range Instrument Span
(2) Steam Generator Water Level Low-Low (Normal Containment Environment)	1 <sup>(r)</sup> , 2 <sup>(r)</sup> , 3 <sup>(r)</sup>	4 per SG	D	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≥ 16.6% <sup>(s)</sup> of Narrow Range Instrument Span

- (a) The Allowable Value defines the limiting safety system setting except for Functions 1.e, 4.e.(1), 5.c, 5.e.(1), 5.e.(2), 6.d.(1), and 6.d.(2) (the Nominal Trip Setpoint defines the limiting safety system setting for these Functions). See the Bases for the Nominal Trip Setpoints.
- (r) Except when the Containment Pressure – Environmental Allowance Modifier channels in the same protection sets are tripped.
- (s) 1. If the as-found instrument channel setpoint is conservative with respect to the Allowable Value, but outside its as-found test acceptance criteria band, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service. If the as-found instrument channel setpoint is not conservative with respect to the Allowable Value, the channel shall be declared inoperable.  
2. The instrument channel setpoint shall be reset to a value that is within the as-left setpoint tolerance band on either side of the Nominal Trip Setpoint, or to a value that is more conservative than the Nominal Trip Setpoint; otherwise, the channel shall be declared inoperable. The Nominal Trip Setpoints and the methodology used to determine the as-found test acceptance criteria band and the as-left setpoint tolerance band shall be specified in the Bases.

Table 3.3.2-1 (page 9 of 11)  
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE <sup>(a)</sup>
6. Auxiliary Feedwater					
d. SG Water Level Low-Low					
(3) Not used.					
(4) Containment Pressure - Environmental Allowance Modifier	1, 2, 3	4	N	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≤ 2.0 psig
e. Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.				
f. Loss of Offsite Power	1,2,3 <i>1(v) 2(w),(v)</i>	2 trains	R	SR 3.3.2.7 SR 3.3.2.10	NA
g. Trip of all Main Feedwater Pumps	<i>1,2(n)</i>	<i>2 per pump</i> <i>4(w),(w)</i>	<i>J, M</i> <i>^</i>	SR 3.3.2.8	NA
h. Auxiliary Feedwater Pump Suction Transfer on Suction Pressure - Low	1,2,3	3	O	SR 3.3.2.1 SR 3.3.2.9 SR 3.3.2.10 SR 3.3.2.12	≥ 20.64 psia

- (a) The Allowable Value defines the limiting safety system setting except for Functions 1.e, 4.e.(1), 5.c, 5.e.(1), 5.e.(2), 6.d.(1), and 6.d.(2) (the Nominal Trip Setpoint defines the limiting safety system setting for these Functions). See the Bases for the Nominal Trip Setpoints.
- (n) Trip function may be blocked just before shutdown of the last operating main feedwater pump and restored just after the first main feedwater pump is put into service following performance of its startup trip test.

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- (u) During startup of the second main feedwater pump, the following exception applies: The requirement for four OPERABLE channels is met if two required channels are OPERABLE on the associated main feedwater pump in operation supplying feedwater to the SGs and two required channels are in the tripped condition on the second main feedwater pump.
- (v) During removal of the first of two operating main feedwater pumps from service, the following exception applies:
  - (1) LCO 3.0.3 is not applicable for up to 1 hour for the channels associated with the first main feedwater pump,

OR

- (2) The requirement for four OPERABLE channels is met if two required channels are OPERABLE on the associated main feedwater pump in operation supplying feedwater to the SGs and two required channels on the main feedwater pump to be removed from service are in the tripped condition.
- (w) During removal of the first of two operating main feedwater pumps from service, the following exception applies: The requirement for four OPERABLE channels is met if two required channels are OPERABLE on the associated main feedwater pump in operation supplying feedwater to the SGs and two required channels on the main feedwater pump to be removed from service are in the tripped condition.

## ATTACHMENT 3

### RETYPE TECHNICAL SPECIFICATIONS

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME	
I. One channel inoperable.	<p>----- NOTE -----                      The inoperable channel may be bypassed for up to 12 hours for surveillance testing of other channels.                      -----</p>		
	I.1 Place channel in trip.		72 hours
	<p><u>OR</u>                      I.2 Be in MODE 3.</p>		78 hours
J. One channel inoperable.	<p>----- NOTE -----                      The inoperable channel may be bypassed for up to 2 hours for surveillance testing of other channels.                      -----</p>		
	J.1 Place channel in trip.		24 hours
	<p><u>OR</u>                      J.2 Be in MODE 3.</p>		30 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
M. Two channels inoperable.  <u>AND</u>  AFW actuation on Trip of all Main Feedwater Pumps maintained from one actuation train.	M.1 Place channels in trip.	24 hours
	<u>OR</u>  M.2 Be in MODE 3.	30 hours
N. One or more Containment Pressure - Environmental Allowance Modifier channel(s) inoperable.	N.1 Place channel(s) in trip.	72 hours
	<u>OR</u>  N.2.1 Be in MODE 3.	78 hours
	<u>AND</u>  N.2.2 Be in MODE 4.	84 hours
O. One channel inoperable.	O.1 Place channel in trip.	24 hours
	<u>AND</u>  O.2 Restore channel to OPERABLE status.	During performance of the next required COT

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>P. One or more channel(s) inoperable.</p>	<p>P.1 Declare associated auxiliary feedwater pump(s) inoperable.</p>	<p>Immediately</p>
	<p><u>AND</u></p> <p>P.2 Declare associated steam generator blowdown and sample line isolation valve(s) inoperable.</p>	<p>Immediately</p>
<p>Q One train inoperable.</p>	<p>----- NOTE ----- One train may be bypassed for up to 2 hours for surveillance testing provided the other train is OPERABLE. -----</p>	
	<p>Q.1 Restore train to OPERABLE status.</p>	<p>24 hours</p>
	<p><u>OR</u></p>	
	<p>Q.2.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>Q.2.2 Be in MODE 4.</p>	<p>30 hours</p> <p>36 hours</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
R. One or both train(s) inoperable.	R.1 Restore train(s) to OPERABLE status.	48 hours
	<u>OR</u>	
	R.2.1 Be in MODE 3.	54 hours
	<u>AND</u>	
	R.2.2 Be in MODE 4.	60 hours
S. One train inoperable	----- NOTE ----- One train may be bypassed for up to 4 hours for surveillance testing provided the other train is OPERABLE. -----	
	S.1 Restore train to OPERABLE status.	6 hours
	<u>OR</u>	
	S.2.1 Be in MODE 3.	12 hours
	<u>AND</u>	
	S.2.2 Be in MODE 4.	18 hours

Table 3.3.2-1 (page 9 of 11)  
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE <sup>(a)</sup>
6. Auxiliary Feedwater					
d. SG Water Level Low-Low					
	(3) Not used.				
	(4) Containment Pressure - Environmental Allowance Modifier	1, 2, 3	4	N	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10 ≤ 2.0 psig
e. Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.				
f. Loss of Offsite Power	1,2,3	2 trains	R	SR 3.3.2.7 SR 3.3.2.10	NA
g. Trip of all Main Feedwater Pumps	1 <sup>(v)</sup> ,2 <sup>(n),(v)</sup>	4 <sup>(u),(w)</sup>	J,M	SR 3.3.2.8	NA
h. Auxiliary Feedwater Pump Suction Transfer on Suction Pressure - Low	1,2,3	3	O	SR 3.3.2.1 SR 3.3.2.9 SR 3.3.2.10 SR 3.3.2.12	≥ 20.64 psia

- (a) The Allowable Value defines the limiting safety system setting except for Functions 1.e, 4.e.(1), 5.c, 5.e.(1), 5.e.(2), 6.d.(1), and 6.d.(2) (the Nominal Trip Setpoint defines the limiting safety system setting for these Functions). See the Bases for the Nominal Trip Setpoints.
- (n) Trip function may be blocked just before shutdown of the last operating main feedwater pump and restored just after the first main feedwater pump is put into service following performance of its startup trip test.
- (u) During startup of the second main feedwater pump, the following exception applies: The requirement for four OPERABLE channels is met if two required channels are OPERABLE on the associated main feedwater pump in operation supplying feedwater to the SGs and two required channels are in the tripped condition on the second main feedwater pump.
- (v) During removal of the first of two operating main feedwater pumps from service, the following exception applies:  
 (1) LCO 3.0.3 is not applicable for up to 1 hour for the channels associated with the first main feedwater pump,  
 OR  
 (2) The requirement for four OPERABLE channels is met if two required channels are OPERABLE on the associated main feedwater pump in operation supplying feedwater to the SGs and two required channels on the main feedwater pump to be removed from service are in the tripped condition.
- (w) During removal of the first of two operating main feedwater pumps from service, the following exception applies: The requirement for four OPERABLE channels is met if two required channels are OPERABLE on the associated main feedwater pump in operation supplying feedwater to the SGs and two required channels on the main feedwater pump to be removed from service are in the tripped condition.

## ATTACHMENT 4

PROPOSED TECHNICAL SPECIFICATION BASES CHANGES  
(for information only)

BASES

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APPLICABLE  
SAFETY  
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f. Auxiliary Feedwater - Loss of Offsite Power (continued)

Emergency Load Sequencer) and fed to BOP ESFAS by relay actuation. Loss of power to either ESF bus will start the turbine - driven AFW pump, to ensure ~~that at least one SG contains~~ enough water to serve as the heat sink for reactor decay heat and sensible heat removal following the reactor trip, and automatically isolate the SG blowdown and sample lines. In addition, once the diesel generators are started and up to speed, the motor - driven AFW pumps will be sequentially loaded onto the diesel generator buses.

*the intact SGs contain*  
Functions 6.a through 6.f must be OPERABLE in MODES 1, 2, and 3 to ensure that the SGs remain the heat sink for the reactor. SG Water Level - Low Low in any operating SG will cause the motor - driven AFW pumps to start. The system is aligned so that upon a start of the pump, water immediately begins to flow to the SGs. SG Water Level - Low Low in any two operating SGs will cause the turbine - driven pump to start. The SG Water Level - Low Low (Normal Containment Environment) channels do not provide protection when the Containment Pressure – Environmental Allowance Modifier (EAM) channels in the same protection sets are tripped since that enables the SG Water Level - Low Low (Adverse Containment Environment) channels with a higher water level trip setpoint. As such, the SG Water Level - Low Low (Normal Containment Environment) channels need not be OPERABLE when the Containment Pressure – EAM channels in the same protection sets are tripped, as discussed in a footnote to Table 3.3.2-1. These Functions do not have to be OPERABLE in MODES 5 and 6 because there is not enough heat being generated in the reactor to require the SGs as a heat sink. In MODE 4, AFW actuation does not need to be OPERABLE because either AFW or residual heat removal (RHR) will be available to remove decay heat or sufficient time is available to manually place either system in operation.

(continued)

BASES

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6. Auxiliary Feedwater (continued)

(MFW)

g. Auxiliary Feedwater - Trip of All Main Feedwater Pumps

A Trip of all MFW pumps (PAE01A and PAE01B) is an indication of a loss of MFW and the subsequent need for some method of decay heat and sensible heat removal to bring the reactor back to no load temperature and pressure.

Each turbine-driven MFW pump is equipped with two pressure switches (one in separation group 1 and one in separation group 4) on the oil line for the speed control system. A low pressure signal from either of these pressure switches indicates a trip of that pump. Two OPERABLE channels per pump satisfy redundancy requirements, with one out of two logic in the same separation group on both pumps required for signal actuation. A trip of all MFW pumps (PAE01A and PAE01B) starts the motor driven AFW pumps to ensure that the intact SGs are available with water to act as the heat sink for the reactor.

Four channels with two

INSERT  
3.3.2.b.g-1

Function 6.g must be OPERABLE in MODES 1 and 2. This ensures that the intact SGs are provided with water to serve as the heat sink to remove reactor decay heat and sensible heat in the event of an accident. In MODES 3, 4, and 5, the turbine-driven MFW pumps may be normally shut down, and thus pump trip is not indicative of a condition requiring automatic AFW initiation. Note (n) of Table 3.3.2-1 allows the blocking of this ESFAS function in MODE 2 just before shutdown of the last operating turbine-driven main feedwater pump and the restoration of this trip function just after the first turbine-driven main feedwater pump is put into service following its startup trip test. This limits the potential for inadvertent AFW actuations during normal startups and shutdowns.

(start new paragraph)

Footnote(n) of

INSERT  
3.3.2.b.g-2  
(new paragraph)

A turbine-driven MFW pump is in service when the pump's stop valves are open, the governor control valves are either in manual or automatic control, and feedwater is being supplied to the steam generators.

One cause of multiple channel inoperability which requires entry into Condition 1 occurs routinely during normal plant operation. A single turbine-driven MFW pump may be in service in MODE 1 at reduced power levels if the other

(continued)

the application of  
footnote (u)

### INSERT 3.3.2.6.g-1

The separation group 1 low pressure signals are driven from pressure switches FCPSL0025 and FCPSL0125 and the separation group 4 low pressure signals are driven from pressure switches FCPSL0026 and FCPSL0126. Signal actuation requires that both channels in a given separation group (one on each MFW pump) be in the tripped condition. If one or both channels in a separation group are inoperable, then the motor-driven AFW actuation signal from that separation group is unavailable.

The four Required Channels for Function 6.g are modified by footnotes (u) and (w). Footnotes (u) and (w) allow a conditional redefinition of channel OPERABILITY requirements such that normal plant operating evolutions do not require TS Condition entries. There are times during the Applicability of Function 6.g when footnote (u) allows an exception during the startup of the second MFW pump when one MFW pump is in operation supplying feedwater to the SGs and the second MFW pump turbine control circuitry is reset and that pump is not supplying feedwater to the SGs. If the channels associated with the operating MFW pump are OPERABLE and the channels associated with the reset MFW pump turbine controls are in the tripped condition, footnote (u) allows an exception whereby the OPERABILITY requirement of four Required Channels is met. Similarly, footnote (w) allows an exception during the removal of the first MFW pump from service when one MFW pump is in operation supplying feedwater to the SGs and the second MFW pump turbine control circuitry is reset and that pump is not supplying feedwater to the SGs. If the channels associated with the operating MFW pump are OPERABLE and the channels associated with the reset MFW pump turbine control circuitry are in the tripped condition, the OPERABILITY requirement of four Required Channels is met. When both MFW pumps are in operation supplying feedwater to the SGs, footnotes (u) and (w) no longer apply.

### INSERT 3.3.2.6.g-2

Footnote (v) allows an exception such that the removal of the first of two operating MFW pumps from service may be performed without trip jumpers per new footnote (v1) or with trip jumpers installed per new footnote (v2).

Footnote (v) allows an exception to the LCO Applicability requirements in MODES 1 and 2. During the removal of the first of two operating MFW pumps from service, when one MFW pump is in operation supplying feedwater to the SGs and the second MFW pump turbine control circuitry is reset and that pump is not supplying feedwater to the SGs, Function 6.g is unavailable until the channels associated with the reset MFW pump turbine control circuitry (one in each separation group) are placed in the tripped condition. There is no Condition to enter in LCO 3.3.2 which corresponds to this operating state which is encountered at least once every operating cycle. Footnote (v1) provides an exception to entering LCO 3.0.3 for up to 1 hour for the channels associated with the first MFW pump to be removed from service. This 1-hour period of ESFAS Function 6.g unavailability is justified given the low likelihood of occurrence of an event requiring actuation of the motor-driven AFW pumps during this short time period, the diversity of other actuation signals that are credited in the accident analyses such as low-low steam generator water level and safety injection, and the heightened operator awareness that accompanies this evolution.

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LCO, AND  
APPLICABILITY

g. Auxiliary Feedwater - Trip of All Main Feedwater Pumps  
(Continued)

turbine-driven MFW pump has not yet been placed into service during power ascension or has been removed from service for maintenance. Prior to placing a turbine-driven MFW pump into service, the status of its turbine control circuitry is changed from "tripped" to "reset" via its Trip/Reset handswitch (FCHIS0018 or FCHIS0118) such that the two oil pressure switch channels on that turbine-driven MFW pump experience the high oil pressures indicative of an operating pump prior to that turbine-driven MFW pump providing feedwater flow to the steam generators. In this status, the turbine-driven MFW pump that is not yet in service would not satisfy the AFW start function actuation logic if the operating turbine-driven MFW pump were to trip at this time since it takes one tripped channel on each turbine-driven MFW pump in the same separation group to initiate an auxiliary feedwater actuation signal. Therefore, with one turbine-driven MFW pump turbine in reset, ~~Condition J must be entered~~ for two inoperable oil pressure channels on that turbine-driven MFW pump. This ~~Condition~~ imposes a partial AFW actuation status (or partial trip) on the plant.

*is applied*

*Footnote (u)*

*Footnote*

This ESFAS function is an anticipatory start signal for which no credit is taken in any accident or transient analysis. The safety analyses credit actuation of the motor-driven AFW pumps upon a low-low steam generator water level signal in any steam generator and after a safety injection signal.

h. Auxiliary Feedwater - Pump Suction Transfer on Suction Pressure - Low

A low pressure signal in the AFW pump suction line protects the AFW pumps against a loss of the normal supply of water for the pumps, the CST. Three pressure switches are located on the AFW pump suction line from the CST. A low pressure signal sensed by any two of the

(continued)

BASES

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APPLICABLE  
SAFETY  
ANALYSES,  
LCO, AND  
APPLICABILITY

h. Auxiliary Feedwater - Pump Suction Transfer on Suction Pressure - Low (continued)

three switches coincident with an auxiliary feedwater actuation signal will cause the emergency supply of water for the pumps to be aligned. ESW (safety grade) is automatically lined up to supply the AFW pumps to ensure an adequate supply of water for the AFW System to maintain ~~at least one of the~~ SGs as the heat sink for reactor decay heat and sensible heat removal.

*intact*

Since the detectors are located in an area not affected by HELBs or high radiation, they will not experience any adverse environmental conditions and the Trip Setpoint reflects only steady state instrument uncertainties. The Trip Setpoint is  $\geq 21.71$  psia.

This Function must be OPERABLE in MODES 1, 2, and 3 to ensure a safety grade supply of water for the AFW System to maintain the SGs as the heat sink for the reactor. This Function does not have to be OPERABLE in MODES 5 and 6 because there is not enough heat being generated in the reactor to require the SGs as a heat sink. In MODE 4, AFW automatic suction transfer does not need to be OPERABLE because RHR will already be in operation, or sufficient time is available to place RHR in operation, to remove decay heat.

7. Automatic Switchover to Containment Sump

At the end of the injection phase of a LOCA, the RWST will be nearly empty. Continued cooling must be provided by the ECCS to remove decay heat. The source of water for the RHR pumps is automatically switched to the containment recirculation sumps. The low head residual heat removal (RHR) pumps and containment spray pumps draw the water from the containment recirculation sumps, the RHR pumps pump the water through the RHR heat exchanger, inject the water back into the RCS, and supply the cooled water to the other ECCS pumps. Switchover from the RWST to the containment sumps must occur before the RWST empties to prevent damage to the RHR pumps and a loss of core cooling capability. For similar reasons, switchover must not occur before there is sufficient water in the containment sumps to support ESF pump suction.

(continued)

BASES

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ACTIONS

I.1 and I.2 (continued)

The Required Actions are modified by a Note that allows the inoperable channel to be bypassed for up to 12 hours for surveillance testing of other channels. The 72 hours allowed to place the inoperable channel in the tripped condition, and the 12 hours allowed for an inoperable channel to be in the bypassed condition for testing, are justified in Reference 18.

J.1 and J.2

Condition J applies to the AFW pump start on trip of all MFW pumps (PAE01A and PAE01B).

This action addresses the train orientation of the BOP ESFAS for the auto start function of the AFW System on loss of all MFW pumps (PAE01A and PAE01B). The OPERABILITY of the AFW System must be assured by providing automatic start of the AFW System pumps. ~~If one or more channel(s) are inoperable, 1 hour is allowed to place the inoperable channel(s) in the tripped condition. If the channels cannot be tripped in 1 hour, 6 additional hours are allowed to place the unit in MODE 3. The allowed Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging unit systems. In MODE 3, the unit does not have any analyzed transients or conditions that require the explicit use of the protection function noted above. The Required Actions are modified by a Note that allows one inoperable channel to be bypassed for up to 2 hours for surveillance testing of other channels.~~

*INSERT 3.3.2.J  
(start new paragraph)*

K.1, K.2.1, and K.2.2

Condition K applies to:

- RWST Level - Low Low Coincident with Safety Injection.

RWST Level - Low Low Coincident With SI provides actuation of switchover to the containment recirculation sumps. Note that this Function requires the bistables to energize to perform their required action. The failure of up to two channels will not prevent the operation of this Function. This Action Statement limits the duration that an RWST level channel could be inoperable in the tripped condition in order to limit the probability for automatic switchover to an empty containment sump upon receipt of an inadvertent safety injection signal (SIS), coincident with a single failure of another RWST level channel, or for premature

(continued)

### INSERT 3.3.2.J

Condition J applies if one channel is inoperable. If Condition J is entered, 24 hours are allowed place the inoperable channel in the tripped condition. This Completion Time is consistent with Reference 23. If the channel cannot be tripped within 24 hours,

BASES

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ACTIONS  
(continued)

M.1 and M.2

~~Not used.~~ *INSERT 3.3.2.M*

N.1, N.2.1, and N.2.2

Condition N applies to the Environmental Allowance Modifier (EAM) circuitry for the SG Water Level - Low Low trip Functions in MODES 1, 2, and 3. With one or more EAM channel(s) inoperable, they must be placed in the tripped condition within 72 hours. Placing an EAM channel in trip automatically enables the SG Water Level - Low Low (Adverse Containment Environment) bistable for that protection channel, with its higher SG level Trip Setpoint (a higher trip setpoint means a feedwater isolation or an AFW actuation would occur sooner). The Completion Time of 72 hours is based on Reference 18. If the inoperable channel cannot be placed in the tripped condition within the specified Completion Time, the unit must be placed in a MODE where this Function is not required to be OPERABLE. The unit must be placed in MODE 3 within an additional six hours and in MODE 4 within the following six hours.

O.1 and O.2

Condition O applies to the Auxiliary Feedwater Pump Suction Transfer on Suction Pressure - Low trip Function. The Condensate Storage Tank is the highly reliable and preferred suction source for the AFW pumps. This function has a two-out-of-three trip logic. Therefore, continued operation is allowed with one inoperable channel until the performance of the next monthly COT on one of the other channels, as long as the inoperable channel is placed in trip within ~~4 hours~~ *24 hours*.

P.1 and P.2

Condition P applies to the Auxiliary Feedwater Manual Initiation trip Function and the Steam Generator Blowdown and Sample Line Isolation Valve Actuation Function 10.a. The associated auxiliary feedwater pump(s) and the associated steam generator blowdown and sample line isolation valve(s) must be declared inoperable immediately when one or more channel(s) or train(s) is inoperable. Refer to LCO 3.7.5, "Auxiliary Feedwater (AFW) System," and to LCO 3.7.19, "Secondary Side Isolation Valves."

(continued)

### INSERT 3.3.2.M

Condition M applies to the AFW pump start on trip of all MFW pumps (PAE01A and PAE01B).

This action addresses the train orientation of the BOP ESFAS for the auto start function of the AFW System on loss of all MFW pumps (PAE01A and PAE01B). The OPERABILITY of the AFW System must be assured by providing automatic start of the AFW System pumps.

Condition M applies if two channels are inoperable and the motor-driven AFW actuation function is maintained from one actuation train, i.e., if two channels out of the four total channels are inoperable but are in the same separation group. If Condition M is entered, 24 hours are allowed to place the inoperable channels in the tripped condition.

If one channel per MFW pump is inoperable, but the Condition is limited to the same separation group, the actuation function remains available. As shown on FSAR Figure 7.3-1, sheet 2 (Ref. 2), satisfying the trip logic requires the presence of a low oil pressure signal in the same separation group on each MFW pump. For example, an inoperable separation group 1 channel on one MFW pump coincident with an inoperable separation group 1 channel on the other MFW pump would leave the separation group 4 channels available to perform the actuation function. Therefore, Condition M covers either of the following situations:

- Channels FCP-0025 and FCP-0125 inoperable or
- Channels FCP-0026 and FCP-0126 inoperable.

The wording of Condition M and the 24-hour Completion Time are consistent with Reference 23.

If the channels cannot be tripped in 24 hours, 6 additional hours are allowed to place the unit in MODE 3. The allowed Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging unit systems. In MODE 3, the unit does not have any analyzed transients or conditions that require the explicit use of the protection function noted above.

Q.1, Q.2.1, and Q.2.2

BASES

ACTIONS  
(continued)

~~Q.1 and Q.2~~

Condition Q applies to the Auxiliary Feedwater and Steam Generator Blowdown and Sample Line Isolation Valve Actuation Function 10.b Balance of Plant ESFAS automatic actuation logic and actuation relays. ~~With one train inoperable, the unit must be brought to MODE 3 within 6 hours and MODE 4 within 12 hours.~~ (Example 1.3-1 explains the independence of these Completion Times). The Required Actions are modified by a Note that allows one train to be bypassed for up to 2 hours for surveillance testing provided the other train is OPERABLE.

INSERT 3.3.2.Q

R.1, R.2.1, and R.2.2

Condition R applies to the Auxiliary Feedwater Loss of Offsite Power trip Function and the Steam Generator Blowdown and Sample Line Isolation Valve Actuation Function 10.d. With the inoperability of one or both train(s), 48 hours are allowed to return the train(s) to OPERABLE status. The specified Completion Time is reasonable considering this Function is associated with the turbine driven auxiliary feedwater pump (TDAFP) and the ESFAS Function 10 valves, the available redundancy provided by the motor driven auxiliary feedwater pumps and other isolation valves, and the low probability of an event occurring during this interval. If the Function cannot be returned to OPERABLE status, the unit must be placed in MODE 3 within 6 hours and in MODE 4 within 12 hours (Example 1.3-1 explains the independence of these Completion Times). The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power in an orderly manner and without challenging unit systems. In MODE 4, the unit does not have any analyzed transients or conditions that require this equipment for mitigation.

S.1, S.2.1, and S.2.2

Condition S applies to the MSFIS automatic logic and actuation relays.

The action addresses the train orientation of the actuation logic for these functions. If one train is inoperable, 6 hours are allowed to restore the train to OPERABLE status. The Completion Time for restoring a train to OPERABLE status is reasonable considering that there is another train OPERABLE, and the low probability of an event occurring during this interval. If the train cannot be returned to OPERABLE status, the unit must be brought to MODE 3 within the next 6 hours and MODE 4 within the following 6 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit

(continued)

### INSERT 3.3.2.Q

If one train is inoperable, 24 hours are allowed to restore the train to OPERABLE status. The 24-hour Completion Time for restoring the inoperable train to OPERABLE status is justified in Reference 23. The specified Completion Time is reasonable considering that there is another OPERABLE train and the low probability of an event occurring during this interval. If the inoperable train cannot be restored to OPERABLE status within 24 hours, the unit must be brought to MODE 3 within 30 hours and MODE 4 within 36 hours

BASES

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- REFERENCES  
(continued)
10. WCAP-13632-P-A, Revision 2, "Elimination of Pressure Sensor Response Time Testing Requirements," January 1996.
  11. Callaway OL Amendment No. 43 dated April 14, 1989.
  12. SLNRC 84-0038 dated February 27, 1984.
  13. Callaway OL Amendment No. 117 dated October 1, 1996.
  14. WCAP-14036-P-A, Revision 1, "Elimination of Periodic Protection Channel Response Time Tests," October 1998.
  15. FSAR, Section 15.5.1.
  16. FSAR, Section 15.6.1.
  17. Letter from Mel Gray (NRC) to Garry L. Randolph (UE), "Revision 20 of the Inservice Testing Program for Callaway Plant, Unit 1 (TAC No. MA4469)," dated March 19, 1999.
  18. WCAP-14333-P-A, Revision 1, "Probabilistic Risk Analysis of the RPS and ESFAS Test Times and Completion Times," October 1998.
  19. WCAP-15376-P-A, Revision 1, "Risk-Informed Assessment of the RTS and ESFAS Surveillance Test Intervals and Reactor Trip Breaker Test and Completion Times," March 2003.
  20. Westinghouse letter SCP-04-90 dated August 27, 2004.
  21. ULNRC-03748 dated February 27, 1998.
  22. IDP-ZZ-00017.
  23. *Callaway License Amendment — dated*
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