Exelon Generation

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RS-19-115

10 CFR 50.90

December 20, 2019

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

Braidwood Station, Units 1 and 2
Renewed Facility Operating License Nos. NPF-72 and NPF-77
NRC Docket Nos. STN 50-456 and STN 50-457

Byron Station, Units 1 and 2
Renewed Facility Operating License Nos. NPF-37 and NPF-66
NRC Docket Nos. STN 50-454 and STN 50-455

Subject: Supplement to Application to Revise Braidwood Station and Byron Station Technical Specifications to Adopt Risk Informed Completion Times TSTF-505, Revision 2, "Provide Risk-Informed Extended Completion Times – RITSTF Initiative 4b"

References:

1) Letter from D. M. Gullott (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, "Application to Revise Braidwood Station and Byron Station Technical Specifications to Adopt Risk Informed Completion Times TSTF-505, Revision 2, 'Provide Risk-Informed Extended Completion Times - RITSTF Initiative 4b'," dated December 13, 2018 (ADAMS Accession No. ML18352B063)

2) Email from J. Wiebe (U.S. Nuclear Regulatory Commission) to L. A. Simpson (Exelon Generation Company, LLC), "...Clarification Call Regarding Certain RAI Response and an Audit Identified Issue," dated November 20, 2019

In EGC letter dated December 13, 2018 (Reference 1), Exelon Generation Company, LLC (EGC) requested an amendment to the Renewed Facility Operating License Nos. NPF-72 and NPF-77 for Braidwood Station, Units 1 and 2 (Braidwood), and Renewed Facility Operating License Nos. NPF-37 and NPF-66 for Byron Station, Units 1 and 2 (Byron), respectively.

The proposed amendments would modify Technical Specifications (TS) requirements to permit the use of risk-informed completion times (RICTs) in accordance with the Technical Specifications Task Force (TSTF) Traveler TSTF-505, Revision 2, "Provide Risk-Informed Extended Completion Times – RITSTF [Risk-Informed TSTF] Initiative 4b," (ADAMS Accession No. ML18183A493).

In NRC email dated November 20, 2019 (Reference 2), the NRC determined that additional information is needed to complete its review. As discussed during the clarification call held with the NRC on November 25, 2019, EGC is providing this supplement with the requested information.

In addition, as requested during the audit conducted in June 2019, Attachments 2 and 3 to this supplement provide an updated mark-up of the Braidwood and Byron TS pages. Attachment 4 provides a revision to Enclosure 1, the list of revised required actions to corresponding PRA functions. Attachments 2, 3, and 4 supersede all TS pages and Enclosure 1 previously provided.

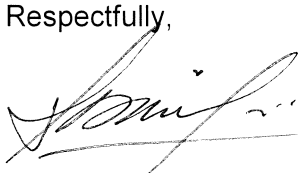
EGC has reviewed the information supporting the No Significant Hazards Consideration and the Environmental Consideration that was previously provided to the NRC in Attachment 1 of the Reference 1 letter. The additional information provided in this submittal does not affect the conclusion that the proposed license amendment does not involve a significant hazards consideration. This additional information also does not affect the conclusion that there is no need for an environmental assessment to be prepared in support of the proposed amendment.

In accordance with 10 CFR 50.91, "Notice for public comment; State consultation," paragraph (b), EGC is providing a copy of this letter and its attachment to the State of Illinois.

This letter contains no regulatory commitments. Should you have any questions concerning this submittal, please contact Ms. Lisa Simpson at (630) 657-2815.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 20th day of December 2019.

Respectfully,



Dwi Murray
Sr. Manager – Licensing
Exelon Generation Company, LLC

Attachments:
1) Supplemental Information
2) Proposed Technical Specifications Changes for Braidwood Station, Units 1 and 2
3) Proposed Technical Specifications Changes for Byron Station, Units 1 and 2
4) Enclosure 1, Revision 1, to LAR to Adopt Risk Informed Completion Times TSTF-505, Revision 2

cc: NRC Regional Administrator – Region III
NRC Senior Resident Inspector – Braidwood Station
NRC Senior Resident Inspector – Byron Station
NRC Project Manager, NRR – Braidwood and Byron Stations
Illinois Emergency Management Agency – Division of Nuclear Safety

ATTACHMENT 1
Supplemental Information

By letter dated December 13, 2018, (Reference 1) Exelon Generation Company, LLC (EGC) requested an amendment to the Renewed Facility Operating License Nos. NPF-72 and NPF-77 for Braidwood Station, Units 1 and 2 (Braidwood), and Renewed Facility Operating License Nos. NPF-37 and NPF-66 for Byron Station, Units 1 and 2 (Byron), respectively.

The proposed amendments would modify Technical Specifications (TS) requirements to permit the use of risk-informed completion times (RICTs) in accordance with the Technical Specifications Task Force (TSTF) Traveler TSTF-505, Revision 2, "Provide Risk-Informed Extended Completion Times – RITSTF [Risk-Informed TSTF] Initiative 4b," (ADAMS Accession No. ML18183A493).

By email dated November 20, 2019 (Reference 2), the NRC determined that additional information is needed to complete its review. This attachment provides the requested information.

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1) Letter from D. M. Gullott (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, "Application to Revise Braidwood Station and Byron Station Technical Specifications to Adopt Risk Informed Completion Times TSTF-505, Revision 2, 'Provide Risk-Informed Extended Completion Times - RITSTF Initiative 4b'," dated December 13, 2018 (ADAMS Accession No. ML18352B063)

2) Email from J. Wiebe (U.S. Nuclear Regulatory Commission) to L. A. Simpson (Exelon Generation Company, LLC), "…Clarification Call Regarding Certain RAI Response and an Audit Identified Issue," dated November 20, 2019

Clarification items for Byron/Braidwood TSTF-505 application

1. Clarify the status of implementation items. If all items are already completed, the license condition will be no longer necessary. The RAI responses discuss only some of the 50.69 implementation items.

EGC Response:

Attachment 5 of the Byron/Braidwood TSTF-505 LAR submitted December 13, 2018 (Reference 1) provided a list of PRA implementation items that must be completed prior to implementing the RICT Program at Braidwood and Byron.

The following table identifies an update to the list of items provided in Attachment 5 of Reference 1. All the Braidwood and Byron RICT Program PRA implementation items are currently completed; therefore, the license conditions proposed in Reference 1 are no longer necessary.

ATTACHMENT 1
Supplemental Information

Updated Attachment 5, Braidwood and Byron RICT Program PRA Implementation Items

Source	Description	Status
ADAMS Accession No. ML18165A181 50.69 RAI 3.a	The internal events and fire PRA models will be updated to versions that include the updated HVAC modeling prior to implementing the Risk Informed Completion Time (RICT) Program at Braidwood and Byron.	Complete
ADAMS Accession No. ML18165A181 50.69 RAI 3.b	Where breaker coordination could not be confirmed for a unit, the applicable model is being updated so that load side cables are designated as causing the loss of the associated power supply. The FPRA models for Byron and Braidwood will be updated to incorporate failures required to account for instances where breaker coordination cannot be confirmed prior to implementing the Risk Informed Completion Time (RICT) Program at Braidwood and Byron.	Complete
ADAMS Accession No. ML18165A181 50.69 RAI 3.d	Identification of all wall mounted panel configurations with four or more switches will be completed and any resulting changes to the Byron and Braidwood FPRA models to incorporate the impact of these panels will be made prior to implementing the Risk Informed Completion Time (RICT) Program at Braidwood and Byron.	Complete
ADAMS Accession No. ML18165A181 50.69 RAI 3.e	The Byron and Braidwood FPRA models that will be used for Risk Informed Completion Time (RICT) Program implementation at Braidwood and Byron will include a new sump clogging value consistent with the WCAP-16362-NP guidance.	Complete
ADAMS Accession No. ML18165A181 50.69 RAI 8.c	The Byron and Braidwood Fire PRAs to be used to support the implementation of the Risk Informed Completion Time (RICT) Program at Braidwood and Byron will retain a 1E-06 joint HEP floor value and justification will be included in the Fire PRA documentation for specific HEP combinations for which a value of less than 1E-05 is used.	Complete
ADAMS Accession No. ML18165A181 50.69 RAI 11	The additional failure contribution of the Westinghouse RCP Shutdown Seal Bypass failure mode will be added to the Byron and Braidwood Internal Events and Fire PRA models prior to implementing the Risk Informed Completion Time (RICT) Program at Braidwood and Byron.	Complete

2. Byron/Braidwood TSTF-505 deviates from the guidance with regards to the periodicity of the PRA update process and the tracking of cumulative risk (see table below). Justification for these deviations would be necessary (If these were accepted with justification in response to a different application you may be able to point to that acceptance).

Topic	NEI 06-09-A guidance	LAR	Comments
PRA Update Process	"the PRA shall be maintained and updated in accordance with approved station procedures on a periodic basis **not to exceed two refueling cycles**."	Enclosure 7 states: PRA updates for plant changes are performed at least once **every 48 months**. BWD and BYR Stations have 18-month refueling cycles; however, a frequency of 48 months for PRA updates would be equivalent for plants with a 24-month cycle.	Additional 12 months from guidance
Cumulative Risk Tracking	"The as-occurred cumulative risk associated with the use of RMTS beyond the front-stop CT for equipment out of service shall be assessed and compared to the guidelines for small risk changes in Regulatory Guide 1.174 [4] and corrective actions applied as appropriate. This assessment **shall be conducted every refueling cycle on a periodicity not to exceed 24 months**."	LAR Enclosure 11 states: The RICT Program will require calculation of cumulative risk **impact at least once every 48 months**. Braidwood Station and Byron Station (BWD and BYR) have 18-month refueling cycles; however, a frequency of 48 months for PRA updates would be equivalent for plants with a 24-month cycle.	Additional 30 months from guidance

EGC Response:

EGC agrees that the statements within Enclosure 7 and Enclosure 11 of the Byron/Braidwood TSTF-505 LAR submitted December 13, 2018 (Reference 1) deviate from the NEI guidance.

Specifically:

- PRA Updates for Braidwood and Byron shall be maintained and updated in accordance with approved station procedures on a periodic bases not to exceed two refueling cycles, in accordance with the guidance of NEI 06-09-A, Revision 0-A.

- The RICT Program for Braidwood and Byron will require calculation of cumulative risk impact every refueling cycle on a periodicity not to exceed 24 months, in accordance with the guidance of NEI 06-09-A, Revision 0-A.

3. At the audit the agreed upon modified wording to the notes below was as follows:

   For TS 3.3.5 RA B.1 CT:

   ----------NOTE----------

   RICT entry is not permitted for the Loss of Function Condition when the same Function is inoperable on more than one Bus.

   For TS 3.7.4 RA B.1 CT:

   ----------NOTE----------

   RICT entry is not permitted for the Loss of Function Condition when more than two required SG PORV lines are inoperable.

EGC Response:

EGC has incorporated the proposed NOTE for TS 3.3.5 into Attachments 2 and 3 for Braidwood TS and Byron TS, respectively.

As discussed during the clarification call on November 25, 2019, EGC has proposed an alternative approach for TS 3.7.4 that eliminates the need for a NOTE for Required Action B.1. An additional Condition eliminates a loss of function condition for TS 3.7.4.

Attachments 2 and 3 provide an update mark-up of the Braidwood and Byron TS pages.

ATTACHMENT 2
Proposed Technical Specifications Changes for Braidwood Station, Units 1 and 2

Braidwood Station, Units 1 and 2

Renewed Facility Operating License Nos. NPF-72 and NPF-77

Updated Mark-up of Technical Specifications Pages for Braidwood Station
B/B TS Inserts

1.3 Completion Times

EXAMPLES (continued)

If after Condition A is entered, Required Action A.1 is not met within either the initial 1 hour or any subsequent 8 hour interval from the previous performance (plus the extension allowed by SR 3.0.2), Condition B is entered. The Completion Time clock for Condition A does not stop after Condition B is entered, but continues from the time Condition A was initially entered. If Required Action A.1 is met after Condition B is entered, Condition B is exited and operation may continue in accordance with Condition A, provided the Completion Time for Required Action A.2 has not expired.

EXAMPLE 1.3-8

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One subsystem inoperable.	A.1 Restore subsystem to OPERABLE status.	7 days OR In accordance with the Risk Informed Completion Time Program
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

1.3 Completion Times

EXAMPLES (continued)

When a subsystem is declared inoperable, Condition A is entered. The 7 day Completion Time may be applied as discussed in Example 1.3-2. However, the licensee may elect to apply the Risk Informed Completion Time Program which permits calculation of a Risk Informed Completion Time (RICT) that may be used to complete the Required Action beyond the 7 day Completion Time. The RICT cannot exceed 30 days. After the 7 day Completion Time has expired, the subsystem must be restored to OPERABLE status within the RICT or Condition B must also be entered.

The Risk Informed Completion Time Program requires recalculation of the RICT to reflect changing plant conditions. For planned changes, the revised RICT must be determined prior to implementation of the change in configuration. For emergent conditions, the revised RICT must be determined within the time limits of the Required Action Completion Time (i.e., not the RICT) or 12 hours after the plant configuration change, whichever is less.

If the 7 day Completion Time clock of Condition A has expired and subsequent changes in plant condition result in exiting the applicability of the Risk Informed Completion Time Program without restoring the inoperable subsystem to OPERABLE status, Condition B is also entered and the Completion Time clocks for Required Actions B.1 and B.2 start.

If the RICT expires or is recalculated to be less than the elapsed time since the Condition was entered and the inoperable subsystem has not been restored to OPERABLE status, Condition B is also entered and the Completion Time clocks for Required Actions B.1 and B.2 start. If the inoperable subsystems are restored to OPERABLE status after Condition B is entered, Conditions A is exited, and therefore, the Required Actions of Condition B may be terminated.

IMMEDIATE COMPLETION TIME	When "Immediately" is used as a Completion Time, the Required Action should be pursued without delay and in a controlled manner.

3.3 INSTRUMENTATION

3.3.1 Reactor Trip System (RTS) Instrumentation

LCO 3.3.1 The RTS instrumentation for each Function in Table 3.3.1-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.1-1.

ACTIONS

----------NOTE----------
Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one or more required channels or trains inoperable.	A.1 Enter the Condition referenced in Table 3.3.1-1 for the channel(s) or train(s).	Immediately
B. One Manual Reactor Trip channel inoperable.	B.1 Restore channel to OPERABLE status. OR B.2 ~~Be in MODE 3.~~	48 hours ← RICT INSERT ~~54 hours~~

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One Power Range Neutron Flux-High channel inoperable.	----------NOTE---------- One channel may be bypassed for up to 12 hours for surveillance testing and setpoint adjustment. ----------	
	D.1 Place channel in trip.	72 hours
	OR	
	~~D.2 Be in MODE 3.~~	~~78 hours~~

RICT INSERT

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. One channel inoperable.	----------NOTE---------- One channel may be bypassed for up to 12 hours for surveillance testing. ----------	
	E.1 Place channel in trip. OR	72 hours RICT INSERT
	~~E.2 Be in MODE 3.~~	~~78 hours~~

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
K. One channel inoperable.	----------NOTES---------- 1. For Functions with installed bypass test capability (Functions 8a, 9, 10), one channel may be bypassed for up to 12 hours for surveillance testing. 2. For Functions with no installed bypass test capability (Functions 12 and 13), the inoperable channel may be bypassed for up to 12 hours for surveillance testing of other channels. ----------	
	K.1 Place channel in trip. OR	72 hours RICT INSERT
INSERT TS 3.3.1 Condition L	~~K.2 Reduce THERMAL POWER to < P-7.~~	~~78 hours~~
~~L.~~ One Turbine Trip channel inoperable. M	----------NOTE---------- The inoperable channel may be bypassed for up to 12 hours for surveillance testing of other channels. ----------	
M	~~L.1~~ Place channel in trip. OR	72 hours RICT INSERT
INSERT TS 3.3.1 Condition N	~~L.2 Reduce THERMAL POWER to < P-8.~~	~~78 hours~~

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
M. One train inoperable.	----------NOTE---------- One train may be bypassed for up to 4 hours for surveillance testing provided the other train is OPERABLE. ----------	
	M.1 Restore train to OPERABLE status. OR	24 hours RICT INSERT
	M.2 Be in MODE 3.	30 hours
N. One RTB train inoperable.	----------NOTE---------- One train may be bypassed for up to 4 hours for surveillance testing, provided the other train is OPERABLE. ----------	
	N.1 Restore train to OPERABLE status. OR	24 hours RICT INSERT
	N.2 Be in MODE 3.	30 hours
O. One or more channels inoperable.	O.1 Verify interlock is in required state for existing unit conditions. OR	1 hour
	O.2 Be in MODE 3.	7 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
P. One or more channels inoperable.	P.1	Verify interlock is in required state for existing unit conditions.	1 hour
	OR		
INSERT TS 3.3.1 Condition S	P.2	Be in MODE 2.	7 hours
Q. One trip mechanism inoperable for one RTB.	Q.1	Restore inoperable trip mechanism to OPERABLE status.	48 hours RICT INSERT
	OR		
INSERT TS 3.3.1 Condition U	Q.2	Be in MODE 3.	54 hours
R. One Reactor Coolant Pump (RCP) Breaker Position channel (per train) inoperable.	----------NOTE---------- The inoperable channel may be bypassed for up to 4 hours for surveillance testing of other channels. ----------		
	R.1	Place channel in trip.	6 hours
	OR		
INSERT TS 3.3.1 Condition W	R.2	Reduce THERMAL POWER to < P-7.	12 hours

Table 3.3.1-1 (page 2 of 6)
Reactor Trip System Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
6.	Overtemperature ΔT	1,2	4	E	SR 3.3.1.1 SR 3.3.1.3 SR 3.3.1.6 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.15	Refer to Note 1
7.	Overpower ΔT	1,2	4	E	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.15	Refer to Note 2
8.	Pressurizer Pressure					
	a. Low	1(e)	4	K	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.15	≥ 1875 psig
	b. High	1,2	4	E	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.15	≤ 2393 psig
9.	Pressurizer Water Level-High	1(e)	3	K	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10	≤ 93.5% of instrument span
10.	Reactor Coolant Flow-Low (per loop)	1(e)	3	K	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.15	≥ 89.3% of loop minimum measured flow
11.	Reactor Coolant Pump (RCP) Breaker Position (per train)	1(e)	4	V → R	SR 3.3.1.13	NA

(continued)

(e) Above the P-7 (Low Power Reactor Trips Block) interlock.

Table 3.3.1-1 (page 3 of 6)
Reactor Trip System Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
12.	Undervoltage RCPs (per train)	1[e]	4	K	SR 3.3.1.9 SR 3.3.1.10 SR 3.3.1.15	≥ 4920 V
13.	Underfrequency RCPs (per train)	1[e]	4	K	SR 3.3.1.9 SR 3.3.1.10 SR 3.3.1.15	≥ 56.08 Hz
14.	Steam Generator (SG) Water Level-Low Low (per SG)					
	a. Unit 1	1,2	4	E	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.15	≥ 16.1% of narrow range instrument span
	b. Unit 2	1,2	4	E	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.15	≥ 34.8% of narrow range instrument span
15.	Turbine Trip					
	a. Emergency Trip Header Pressure (per train)	1[f]	3	M → L	SR 3.3.1.10 SR 3.3.1.14	≥ 910 psig
	b. Turbine Throttle Valve Closure (per train)	1[f]	4	M → L	SR 3.3.1.10 SR 3.3.1.14	≥ 1% open
16.	Safety Injection (SI) Input from Engineered Safety Feature Actuation System (ESFAS)	1,2	2 trains	O → M	SR 3.3.1.13	NA

(continued)

(e) Above the P-7 (Low Power Reactor Trips Block) interlock.

(f) Above the P-8 (Power Range Neutron Flux) interlock.

Table 3.3.1-1 (page 4 of 6)
Reactor Trip System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
17. Reactor Trip System Interlocks					
a. Source Range Block Permissive, P-6	2(d)	2	Q	SR 3.3.1.11 SR 3.3.1.12	≥ 6E-11 amp
b. Low Power Reactor Trips Block, P-7					
(1) P-10 Input	1	3	R	SR 3.3.1.11 SR 3.3.1.12	NA
(2) P-13 Input	1	2	R	SR 3.3.1.10 SR 3.3.1.12	NA
c. Power Range Neutron Flux, P-8	1	3	R	SR 3.3.1.11 SR 3.3.1.12	≤ 32.1% RTP
d. Power Range Neutron Flux, P-10	1,2	3	Q	SR 3.3.1.11 SR 3.3.1.12	≥ 7.9% RTP and ≤ 12.1% RTP
e. Turbine Impulse Pressure, P-13	1	2	R	SR 3.3.1.10 SR 3.3.1.12	≤ 12.1% turbine power
18. Reactor Trip Breakers (RTBs)(g)	1,2	2 trains	P	SR 3.3.1.4	NA
	3(a), 4(a), 5(a)	2 trains	C	SR 3.3.1.4	NA
19. Reactor Trip Breaker Undervoltage and Shunt Trip Mechanisms	1,2	1 each per RTB	T	SR 3.3.1.4	NA
	3(a), 4(a), 5(a)	1 each per RTB	C	SR 3.3.1.4	NA
20. Automatic Trip Logic	1,2	2 trains	O	SR 3.3.1.5	NA
	3(a), 4(a), 5(a)	2 trains	C	SR 3.3.1.5	NA

(a) With Rod Control System capable of rod withdrawal or one or more rods not fully inserted.

(d) Below the P-6 (Source Range Block Permissive) interlock.

(g) Including any reactor trip bypass breakers that are racked in and closed for bypassing an RTB.

3.3 INSTRUMENTATION

3.3.2 Engineered Safety Feature Actuation System (ESFAS) Instrumentation

LCO 3.3.2 The ESFAS instrumentation for each Function in Table 3.3.2-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.2-1.

ACTIONS

---NOTE---
Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one or more required channels or trains inoperable.	A.1 Enter the Condition referenced in Table 3.3.2-1 for the channel(s) or train(s).	Immediately
B. One channel inoperable.	B.1 Restore channel to OPERABLE status. OR ~~B.2.1 Be in MODE 3.~~ AND ~~B.2.2 Be in MODE 5.~~	48 hours RICT INSERT ~~54 hours~~ ~~84 hours~~

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One train inoperable.	C.1 --------NOTE-------- One train may be bypassed for up to 4 hours for surveillance testing provided the other train is OPERABLE. ---------- Restore train to OPERABLE status.	24 hours RICT INSERT
	OR	
	~~C.2.1~~ ~~Be in MODE 3.~~	~~30 hours~~
	AND	
	~~C.2.2~~ ~~Be in MODE 5.~~	~~60 hours~~

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One channel inoperable.	D.1 --------NOTE-------- One channel may be bypassed for up to 12 hours for surveillance testing. ----------	
	Place channel in trip.	72 hours RICT INSERT
	OR	
	~~D.2.1~~ ~~Be in MODE 3.~~	~~78 hours~~
	AND	
	~~D.2.2~~ ~~Be in MODE 4.~~	~~84 hours~~

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. One Containment Pressure channel inoperable.	E.1 --------NOTE-------- One additional channel may be bypassed for up to 12 hours for surveillance testing. ---------- Place channel in bypass.	72 hours
	OR	
	~~E.2.1~~ ~~Be in MODE 3.~~	~~78 hours~~
	AND	
	~~E.2.2~~ ~~Be in MODE 4.~~	~~84 hours~~
F. One channel or train inoperable.	F.1 Restore channel or train to OPERABLE status.	48 hours
	OR	
	~~F.2.1~~ ~~Be in MODE 3.~~	~~54 hours~~
	AND	
	~~F.2.2~~ ~~Be in MODE 4.~~	~~60 hours~~

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
G. One train inoperable.	G.1 --------NOTE-------- One train may be bypassed for up to 4 hours for surveillance testing provided the other train is OPERABLE. ---------- Restore train to OPERABLE status.	24 hours RICT INSERT
	OR	
	G.2.1 ~~Be in MODE 3.~~	~~30 hours~~
	AND	
	G.2.2 ~~Be in MODE 4.~~	~~36 hours~~
H. One channel inoperable.	H.1 --------NOTE-------- One channel may be bypassed for up to 2 hours for surveillance testing provided the other channel is OPERABLE. ---------- Place channel in trip.	1 hour
	OR	
	H.2.1 ~~Be in MODE 3.~~	~~7 hours~~
	AND	
	H.2.2 ~~Be in MODE 4.~~	~~13 hours~~

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
I. One channel inoperable.	I.1 --------NOTE-------- The inoperable channel may be bypassed for up to 12 hours for surveillance testing of other channels. ---------- Place channel in trip.	72 hours RICT INSERT
	OR	
	~~I.2 Be in MODE 3.~~	~~78 hours~~
J. One or more trains inoperable.	J.1 Declare associated auxiliary feedwater pump inoperable.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
K. One channel inoperable.	K.1 --------NOTE---------- One channel may be bypassed for up to 12 hours for surveillance testing. ---------- Place channel in trip.	72 hours
	OR	
	~~K.2.1 Be in MODE 3.~~	~~78 hours~~
	AND	
	~~K.2.2 Be in MODE 5.~~	~~108 hours~~

RICT INSERT

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
L. One or more channels inoperable.	L.1 Verify interlock is in required state for existing unit condition.	1 hour
	OR	
	~~L.2.1 Be in MODE 3.~~	~~7 hours~~
INSERT TS 3.3.2 Conditions M, N, and O	AND	
	~~L.2.2 Be in MODE 4.~~	~~13 hours~~

SURVEILLANCE REQUIREMENTS

----------NOTE----------
Refer to Table 3.3.2-1 to determine which SRs apply for each ESFAS Function.

SURVEILLANCE	FREQUENCY
SR 3.3.2.1 Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.2 Perform COT.	In accordance with the Surveillance Frequency Control Program

(continued)

3.3 INSTRUMENTATION

3.3.5 Loss of Power (LOP) Diesel Generator (DG) Start Instrumentation

LCO 3.3.5 Two channels per bus of the loss of voltage Function, two channels per bus of the degraded voltage Function and two channels per bus of the low degraded voltage Function shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4;
When associated DG is required to be OPERABLE by LCO 3.8.2, "AC Sources-Shutdown."

ACTIONS

----------NOTE----------
Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one channel on one or more buses inoperable.	A.1 --------NOTE-------- For loss of voltage Function, the inoperable channel may be bypassed for up to 2 hours for surveillance testing of the other channel. ---------- Place channel in trip.	1 hour RICT INSERT
B. One or more Functions with two channels on one or more buses inoperable.	B.1 Restore one channel for the Function on the affected bus to OPERABLE status.	1 hour RICT INSERT

(continued)

--------NOTE--------
RICT entry is not permitted for the Loss of Function Condition when the same Function is inoperable on more than one bus.

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.11 Pressurizer Power Operated Relief Valves (PORVs)

LCO 3.4.11 Each PORV and associated block valve shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

---------- NOTE ----------
Separate Condition entry is allowed for each PORV and each block valve.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more PORVs inoperable and capable of being manually cycled.	A.1 Close and maintain power to associated block valve.	1 hour
B. One PORV inoperable and not capable of being manually cycled.	B.1 Close associated block valve. AND	1 hour
	B.2 Remove power from associated block valve. AND	1 hour
	B.3 Restore PORV to OPERABLE status.	72 hours RICT INSERT

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One block valve inoperable.	C.1 Place associated PORV in manual control. AND C.2 Restore block valve to OPERABLE status.	1 hour 72 hours RICT INSERT
D. Required Action and associated Completion Time of Condition A, B, or C not met.	D.1 Be in MODE 3. AND D.2 Be in MODE 4.	6 hours 12 hours
E. Two PORVs inoperable and not capable of being manually cycled.	E.1 Be in MODE 3. AND E.2 Be in MODE 4.	6 hours 12 hours
F. Two block valves inoperable.	F.1 Restore one block valve to OPERABLE status.	2 hours
G. Required Action and associated Completion Time of Condition F not met.	G.1 Be in MODE 3. AND G.2 Be in MODE 4.	6 hours 12 hours

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.2 ECCS-Operating

LCO 3.5.2 Two ECCS trains shall be OPERABLE.

----------NOTES----------

1. In MODE 3, both Safety Injection (SI) pump flow paths and a portion of both Residual Heat Removal (RHR) pump flow paths may be isolated by closing the isolation valves for up to 2 hours to perform pressure isolation valve testing per SR 3.4.14.1.

2. In MODE 3, a portion of both Residual Heat Removal (RHR) pump flow paths may be isolated by closing the isolation valves for up to 2 hours to perform pressure isolation valve testing per SR 3.4.14.1, provided an alternate means of cold leg injection is available for each isolated flow path.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One train inoperable.	A.1 Restore train to OPERABLE status.	7 days RICT INSERT
B. Two trains inoperable. AND At least 100% of the ECCS flow equivalent to a single OPERABLE ECCS train available.	B.1 Restore one train to OPERABLE status.	72 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One or more containment air locks inoperable for reasons other than Condition A or B.	C.1 Initiate action to evaluate overall containment leakage rate per LCO 3.6.1. AND C.2 Verify a door is closed in the affected air lock. AND C.3 Restore air lock to OPERABLE status.	Immediately 1 hour 24 hours RICT INSERT
D. Required Action and associated Completion Time not met.	D.1 Be in MODE 3. AND D.2 Be in MODE 5.	6 hours 36 hours

3.6 CONTAINMENT SYSTEMS

3.6.3 Containment Isolation Valves

LCO 3.6.3 Each containment isolation valve shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

---------- NOTES----------
1. Penetration flow path(s) except for 48 inch purge valve flow paths may be unisolated intermittently under administrative controls.
2. Separate Condition entry is allowed for each penetration flow path.
3. Enter applicable Conditions and Required Actions for systems made inoperable by containment isolation valves.
4. Enter applicable Conditions and Required Actions of LCO 3.6.1, "Containment," when isolation valve leakage results in exceeding the overall containment leakage rate acceptance criteria.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ---------NOTE--------- Only applicable to penetration flow paths with two containment isolation valves. ---------- One or more penetration flow paths with one containment isolation valve inoperable except for purge valve leakage not within limit.	A.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic or remote manual valve, closed manual valve, blind flange, or check valve with flow through the valve secured. AND	4 hours RICT INSERT (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2 --------NOTES-------- 1. Isolation devices in high radiation areas may be verified by use of administrative means. 2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means. ---------- Verify the affected penetration flow path is isolated.	Once per 31 days for isolation devices outside containment following isolation AND Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. ---------NOTE--------- Only applicable to penetration flow paths with only one containment isolation valve and a closed system. ---------- One or more penetration flow paths with one containment isolation valve inoperable.	C.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic or remote manual valve, closed manual valve, or blind flange.	72 hours RICT INSERT
	AND	
	C.2 --------NOTES-------- 1. Isolation devices in high radiation areas may be verified by use of administrative means. 2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means. ---------- Verify the affected penetration flow path is isolated.	Once per 31 days following isolation
D. One or more penetration flow paths with one or more containment purge valves not within purge valve leakage limits.	D.1 Restore purge valve leakage to within limits.	24 hours

(continued)

3.7 PLANT SYSTEMS

3.7.2 Main Steam Isolation Valves (MSIVs)

LCO 3.7.2 Four MSIVs and their associated actuator trains shall be OPERABLE.

APPLICABILITY: MODE 1,
MODES 2 and 3 except when all MSIVs are closed.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One MSIV actuator train inoperable.	A.1 Restore MSIV actuator train to OPERABLE status.	7 days RICT INSERT
B. Two MSIVs each with one actuator train inoperable such that the inoperable actuator trains are in different ESF Divisions.	B.1 Restore one MSIV actuator train to OPERABLE status.	72 hours RICT INSERT
C. Two MSIVs each with one actuator train inoperable and both inoperable actuator trains are in the same ESF Division.	C.1 Restore one MSIV actuator train to OPERABLE status.	24 hours
D. Two MSIV actuator trains inoperable on the same MSIV.	D.1 Declare the affected MSIV inoperable.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Three or more MSIV actuator trains inoperable. OR Required Action and associated Completion Time of Condition A, B, or C not met.	E.1 Declare each affected MSIV inoperable.	Immediately
F. One MSIV inoperable in MODE 1.	F.1 Restore MSIV to OPERABLE status.	8 hours RICT INSERT
G. Required Action and associated Completion Time of Condition F not met.	G.1 Be in MODE 2.	6 hours
H. ---------NOTE--------- Separate Condition entry is allowed for each MSIV. ---------- One or more MSIV inoperable in MODE 2 or 3.	H.1 Close MSIV. AND H.2 Verify MSIV is closed.	8 hours Once per 7 days
I. Required Action and associated Completion Time of Condition H not met.	I.1 Be in MODE 3. AND I.2 Be in MODE 4.	6 hours 12 hours

3.7 PLANT SYSTEMS

3.7.4 Steam Generator (SG) Power Operated Relief Valves (PORVs)

LCO 3.7.4 Four SG PORV lines shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SG PORV line inoperable.	A.1 Restore SG PORV line to OPERABLE status.	30 days RICT INSERT
B. Two ~~or more~~ SG PORV lines inoperable.	B.1 Restore ~~all but~~ one SG PORV line to OPERABLE status.	24 hours RICT INSERT
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. AND	6 hours
	C.2 Be in MODE 4.	12 hours

C. Three or more SG PORV lines inoperable.	C.1 Restore all but one SG PORV lines to OPERABLE status.	24 hours

3.7 PLANT SYSTEMS

3.7.5 Auxiliary Feedwater (AF) System

LCO 3.7.5 Two AF trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

----------NOTE----------
LCO 3.0.4.b is not applicable when entering MODE 1.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One AF train inoperable.	A.1 Restore AF train to OPERABLE status.	72 hours RICT INSERT
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	6 hours 12 hours
C. Two AF trains inoperable.	C.1 ---------NOTE-------- LCO 3.0.3 and all other LCO Required Actions requiring MODE changes are suspended until one AF train is restored to OPERABLE status. ---------- Initiate action to restore one AF train to OPERABLE status.	Immediately

3.7 PLANT SYSTEMS

3.7.7 Component Cooling Water (CC) System

LCO 3.7.7 The CC System shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

----------NOTE----------
Enter applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops-MODE 4," for Residual Heat Removal loops made inoperable by CC.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CC flow path inoperable.	A.1 Restore CC flow path to OPERABLE status.	7 days RICT INSERT
B. One required CC pump inoperable.	B.1 Restore required CC pump to OPERABLE status.	7 days RICT INSERT
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	6 hours 36 hours

3.7 PLANT SYSTEMS

3.7.8 Essential Service Water (SX) System

LCO 3.7.8 The following SX trains shall be OPERABLE:

a. Two unit-specific SX trains; and

b. One opposite-unit SX train for unit-specific support.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One unit-specific SX train inoperable.	A.1 --------NOTES-------- 1. Enter applicable Conditions and Required Actions of LCO 3.8.1, "AC Sources-Operating," for Emergency Diesel Generator made inoperable by SX. 2. Enter applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops-MODE 4," for Residual Heat Removal loops made inoperable by SX. ---------- Restore unit-specific SX train to OPERABLE status.	72 hours RICT INSERT

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Opposite-unit SX train inoperable.	B.1 Restore opposite-unit SX train to OPERABLE status.	7 days RICT INSERT
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	6 hours 36 hours

3.8 ELECTRICAL POWER SYSTEMS

3.8.1 AC Sources-Operating

LCO 3.8.1 The following AC electrical sources shall be OPERABLE:

a. Two qualified circuits per bus between the offsite transmission network and the onsite Class 1E AC Electrical Power Distribution System; and

b. Two Diesel Generators (DGs) capable of supplying the onsite Class 1E AC Electrical Power Distribution System.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

----------NOTE----------
LCO 3.0.4.b is not applicable to DGs.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more buses with one required qualified circuit inoperable.	A.1 Perform SR 3.8.1.1 for the required OPERABLE qualified circuits. AND A.2 Restore required qualified circuit(s) to OPERABLE status.	1 hour AND Once per 8 hours thereafter 72 hours RICT INSERT

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.5 Restore DG to OPERABLE status.	14 days RICT INSERT
C. Required Action and associated Completion Time of Required Action B.1 not met.	C.1 Restore DG to OPERABLE status.	72 hours
D. One or more buses with two required qualified circuits inoperable.	D.1 Restore one required qualified circuit per bus to OPERABLE status.	24 hours RICT INSERT
E. One DG inoperable and one or more buses with one required qualified circuit inoperable. OR One DG inoperable and one bus with two required qualified circuits inoperable.	----------NOTE---------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems-Operating," when Condition E is entered with no AC power source to a division. ---------- E.1 Restore required qualified circuit(s) to OPERABLE status. OR E.2 Restore DG to OPERABLE status.	12 hours RICT INSERT 12 hours RICT INSERT

(continued)

3.8 ELECTRICAL POWER SYSTEMS

3.8.4 DC Sources-Operating

LCO 3.8.4 Division 11(21) and Division 12(22) DC electrical power subsystems shall be OPERABLE and not crosstied to the opposite unit.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One battery charger inoperable.	A.1	Crosstie opposite-unit bus with associated OPERABLE battery charger to the affected division.	2 hours
	AND		
	A.2	Restore battery terminal voltage to greater than or equal to the minimum established float voltage.	2 hours
	AND		
	A.3	Verify battery float current $\leq$ 3 amps.	Once per 12 hours
	AND		
	A.4	Restore battery charger to OPERABLE status.	7 days

RICT INSERT

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One DC electrical power division crosstied to opposite-unit DC electrical power subsystem that has an inoperable battery charger, while opposite unit is in MODE 1, 2, 3, or 4.	B.1 Open at least one crosstie breaker between the crosstied divisions.	204 hours RICT INSERT
C. One DC electrical power division crosstied to opposite-unit DC electrical power subsystem with an inoperable source, while opposite unit is in MODE 5, 6, or defueled.	C.1 ---------NOTE-------- Only required when opposite unit has an inoperable battery. ---------- Verify opposite-unit DC bus load ≤ 200 amps. AND	Once per 12 hours
	C.2 Open at least one crosstie breaker between the crosstied divisions.	7 days RICT INSERT
D. One DC electrical power subsystem inoperable for reasons other than Condition A, B, or C.	D.1 Restore DC electrical power subsystem to OPERABLE status.	2 hours RICT INSERT
E. Required Action and Associated Completion Time not met.	E.1 Be in MODE 3. AND	6 hours
	E.2 Be in MODE 5.	36 hours

3.8 ELECTRICAL POWER SYSTEMS

3.8.7 Inverters-Operating

LCO 3.8.7 Four instrument bus inverters shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One instrument bus inverter inoperable.	A.1 --------NOTE-------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems-Operating" with any instrument bus de-energized. ---------- Restore inverter to OPERABLE status.	7 days RICT INSERT
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One AC electrical power distribution subsystem inoperable.	A.1 Restore AC electrical power distribution subsystem to OPERABLE status.	8 hours
B. One AC instrument bus electrical power distribution subsystem inoperable.	B.1 Restore AC instrument bus electrical power distribution subsystem to OPERABLE status.	2 hours
C. One DC electrical power distribution subsystem inoperable.	C.1 Restore DC electrical power distribution subsystem to OPERABLE status.	2 hours
D. Required Action and associated Completion Time of Condition A, B, or C not met.	D.1 Be in MODE 3. AND D.2 Be in MODE 5.	6 hours 36 hours

RICT INSERT

(continued)

5.5.19 Surveillance Frequency Control Program

This program provides controls for Surveillance Frequencies. The program shall ensure that Surveillance Requirements specified in the Technical Specifications are performed at intervals sufficient to assure the associated Limiting Conditions for Operation are met.

a. The Surveillance Frequency Control Program shall contain a list of Frequencies of those Surveillance Requirements for which the Frequency is controlled by the program.

b. Changes to the Frequencies listed in the Surveillance Frequency Control Program shall be made in accordance with NEI 04-10, "Risk–Informed Method for Control of Surveillance Frequencies," Revision 1.

c. The Provisions of Surveillance Requirements 3.0.2 and 3.0.3 are applicable to the Frequencies established in the Surveillance Frequency Control Program.

5.5.20 Risk Informed Completion Time Program

This program provides controls to calculate a Risk Informed Completion Time (RICT) and must be implemented in accordance with NEI 06-09-A, Revision 0, "Risk-Managed Technical Specifications (RMTS) Guidelines." The program shall include the following:

a. The RICT may not exceed 30 days;

b. A RICT may only be utilized in MODE 1 and 2;

c. When a RICT is being used, any change to the plant configuration change, as defined in NEI 06-09-A, Appendix A, must be considered for the effect on the RICT.

1. For planned changes, the revised RICT must be determined prior to implementation of the change in configuration.

2. For emergent conditions, the revised RICT must be determined within the time limits of the Required Action Completion Time (i.e., not the RICT) or 12 hours after the plant configuration change, whichever is less.

3. Revising the RICT is not required If the plant configuration change would lower plant risk and would result in a longer RICT.

d. For emergent conditions, if the extent of condition evaluation for inoperable structures, systems, or components (SSCs) is not complete prior to exceeding the Completion Time, the RICT shall account for the increased possibility of common cause failure (CCF) by either:

1. Numerically accounting for the increased possibility of CCF in the RICT calculation; or

2. Risk Management Actions (RMAs) not already credited in the RICT calculation shall be implemented that support redundant or diverse SSCs that perform the function(s) of the inoperable SSCs, and, if practicable, reduce the frequency of initiating events that challenge the function(s) performed by the inoperable SSCs.

e. The risk assessment approaches and methods shall be acceptable to the NRC. The plant PRA shall be based on the as-built, as-operated, and maintained plant; and reflect the operating experience at the plant, as specified in Regulatory Guide 1.200, Revision 2. Methods to assess the risk from extending the Completion Times must be PRA methods approved for use with this program, or other methods approved by the NRC for generic use; and any change in the PRA methods to assess risk that are outside these approval boundaries require prior NRC approval.

B/B TS INSERTS

RICT INSERT

OR

In accordance with
the Risk Informed
Completion Time
Program

INSERT TS 3.3.1 Condition L

L.	Required Action and associated Completion Time of Condition K not met.	L.1	Reduce THERMAL POWER to < P-7.	6 hours

INSERT TS 3.3.1 Condition N

N.	Required Action and associated Completion Time of Condition M not met.	N.1	Reduce THERMAL POWER to < P-8.	6 hours

INSERT TS 3.3.1 Condition S

S.	Required Action and associated Completion Time of Condition R not met.	S.1	Be in MODE 2.	6 hours

INSERT TS 3.3.1 Condition U

U.	Required Action and associated Completion Time of Condition B, D, E, O, P, Q, or T not met.	U.1	Be in MODE 3.	6 hours

INSERT TS 3.3.1 Condition W

W. Required Action and associated Completion Time of Condition V not met.	W.1	Reduce THERMAL POWER to < P-7.	6 hours

INSERT TS 3.3.2 Condition M

M. Required Action and associated Completion Time of Conditions B, C, or K not met.	M.1	Be in MODE 3.	6 hours
	AND		
	M.2	Be in MODE 5.	36 hours

INSERT TS 3.3.2 Condition N

N. Required Action and associated Completion Time of Conditions D, E, F, G, H, or L not met.	N.1	Be in MODE 3.	6 hours
	AND		
	N.2	Be in MODE 4.	12 hours

INSERT TS 3.3.2 Condition O

O. Required Action and associated Completion Time of Condition I not met.	O.1	Be in MODE 3.	6 hours

ATTACHMENT 3
Proposed Technical Specifications Changes for Byron Station, Units 1 and 2

Byron Station, Units 1 and 2

Renewed Facility Operating License Nos. NPF-37 and NPF-66

Updated Mark-up of Technical Specifications Pages for Byron Station
B/B TS Inserts

1.3 Completion Times

EXAMPLES (continued)

If after Condition A is entered, Required Action A.1 is not met within either the initial 1 hour or any subsequent 8 hour interval from the previous performance (plus the extension allowed by SR 3.0.2), Condition B is entered. The Completion Time clock for Condition A does not stop after Condition B is entered, but continues from the time Condition A was initially entered. If Required Action A.1 is met after Condition B is entered, Condition B is exited and operation may continue in accordance with Condition A, provided the Completion Time for Required Action A.2 has not expired.

EXAMPLE 1.3-8

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One subsystem inoperable.	A.1 Restore subsystem to OPERABLE status.	7 days OR In accordance with the Risk Informed Completion Time Program
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

1.3 Completion Times

EXAMPLES (continued)

When a subsystem is declared inoperable, Condition A is entered. The 7 day Completion Time may be applied as discussed in Example 1.3-2. However, the licensee may elect to apply the Risk Informed Completion Time Program which permits calculation of a Risk Informed Completion Time (RICT) that may be used to complete the Required Action beyond the 7 day Completion Time. The RICT cannot exceed 30 days. After the 7 day Completion Time has expired, the subsystem must be restored to OPERABLE status within the RICT or Condition B must also be entered.

The Risk Informed Completion Time Program requires recalculation of the RICT to reflect changing plant conditions. For planned changes, the revised RICT must be determined prior to implementation of the change in configuration. For emergent conditions, the revised RICT must be determined within the time limits of the Required Action Completion Time (i.e., not the RICT) or 12 hours after the plant configuration change, whichever is less.

If the 7 day Completion Time clock of Condition A has expired and subsequent changes in plant condition result in exiting the applicability of the Risk Informed Completion Time Program without restoring the inoperable subsystem to OPERABLE status, Condition B is also entered and the Completion Time clocks for Required Actions B.1 and B.2 start.

If the RICT expires or is recalculated to be less than the elapsed time since the Condition was entered and the inoperable subsystem has not been restored to OPERABLE status, Condition B is also entered and the Completion Time clocks for Required Actions B.1 and B.2 start. If the inoperable subsystems are restored to OPERABLE status after Condition B is entered, Conditions A is exited, and therefore, the Required Actions of Condition B may be terminated.

IMMEDIATE COMPLETION TIME	When "Immediately" is used as a Completion Time, the Required Action should be pursued without delay and in a controlled manner.

3.3 INSTRUMENTATION

3.3.1 Reactor Trip System (RTS) Instrumentation

LCO 3.3.1 The RTS instrumentation for each Function in Table 3.3.1-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.1-1.

ACTIONS

----------NOTE----------
Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one or more required channels or trains inoperable.	A.1 Enter the Condition referenced in Table 3.3.1-1 for the channel(s) or train(s).	Immediately
B. One Manual Reactor Trip channel inoperable.	B.1 Restore channel to OPERABLE status. OR ~~B.2 Be in MODE 3.~~	48 hours RICT INSERT ~~54 hours~~

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One Power Range Neutron Flux-High channel inoperable.	----------NOTE---------- One channel may be bypassed for up to 12 hours for surveillance testing and setpoint adjustment. ---------- D.1 Place channel in trip. OR ~~D.2 Be in MODE 3.~~	72 hours RICT INSERT ~~78 hours~~
E. One channel inoperable.	----------NOTE---------- One channel may be bypassed for up to 12 hours for surveillance testing. ---------- E.1 Place channel in trip. OR ~~E.2 Be in MODE 3.~~	72 hours RICT INSERT ~~78 hours~~

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
J. One Source Range Neutron Flux channel inoperable.	J.1 Restore channel to OPERABLE status. OR J.2.1 Initiate action to fully insert all rods. AND J.2.2 Place the Rod Control System in a condition incapable of rod withdrawal.	48 hours 48 hours 49 hours
K. One channel inoperable.	----------NOTES---------- 1. For Functions with installed bypass test capability (Functions 8a, 9, 10), one channel may be bypassed for up to 12 hours for surveillance testing. 2. For Functions with no installed bypass test capability (Functions 12 and 13), the inoperable channel may be bypassed for up to 12 hours for surveillance testing of other channels. ---------- K.1 Place channel in trip. OR ~~K.2 Reduce THERMAL POWER to < P-7.~~	 72 hours ~~78 hours~~

INSERT TS 3.3.1 Condition L

RICT INSERT

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
~~L~~. One Turbine Trip channel inoperable.	----------NOTE---------- The inoperable channel may be bypassed for up to 12 hours for surveillance testing of other channels. ----------	
	~~L~~.1 Place channel in trip.	72 hours RICT INSERT
	OR	
INSERT TS 3.3.1 Condition N	~~L.2~~ ~~Reduce THERMAL POWER to < P-8.~~	~~78 hours~~
M. One train inoperable.	----------NOTE---------- One train may be bypassed for up to 4 hours for surveillance testing provided the other train is OPERABLE. ----------	
	M.1 Restore train to OPERABLE status.	24 hours RICT INSERT
	OR	
	~~M.2~~ ~~Be in MODE 3.~~	~~30 hours~~

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
N. One RTB train inoperable. (P)	----------NOTE---------- One train may be bypassed for up to 4 hours for surveillance testing, provided the other train is OPERABLE. ----------	
	N.1 Restore train to OPERABLE status. (P)	24 hour RICT INSERT
	OR	
	N.2 Be in MODE 3.	30 hours
O. One or more channels inoperable. (Q)	O.1 Verify interlock is in required state for existing unit conditions. (Q)	1 hour
	OR	
	O.2 Be in MODE 3.	7 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
P. One or more channels inoperable.	P.1 Verify interlock is in required state for existing unit conditions. OR P.2 Be in MODE 2.	1 hour 6 hours
Q. One trip mechanism inoperable for one RTB.	Q.1 Restore inoperable trip mechanism to OPERABLE status. OR Q.2 Be in MODE 3.	48 hours 54 hours
R. One Reactor Coolant Pump (RCP) Breaker Position channel(per train) inoperable.	----------NOTE---------- The inoperable channel may be bypassed for up to 4 hours for surveillance testing of other channels. ---------- R.1 Place channel in trip. OR R.2 Reduce THERMAL POWER to < P-7.	 6 hours 12 hours

R
INSERT TS 3.3.1 Condition S
R
T
INSERT TS 3.3.1 Condition U
T
RICT INSERT
V
INSERT TS 3.3.1 Condition W
V
Add line

Table 3.3.1-1 (page 2 of 6)
Reactor Trip System Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
6.	Overtemperature ΔT	1,2	4	E	SR 3.3.1.1 SR 3.3.1.3 SR 3.3.1.6 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.15	Refer to Note 1
7.	Overpower ΔT	1,2	4	E	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.15	Refer to Note 2
8.	Pressurizer Pressure					
	a. Low	1(e)	4	K	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.15	≥ 1875 psig
	b. High	1,2	4	E	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.15	≤ 2393 psig
9.	Pressurizer Water Level-High	1(e)	3	K	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10	≤ 93.5% of instrument span
10.	Reactor Coolant Flow-Low (per loop)	1(e)	3	K	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.15	≥ 89.3% of loop minimum measured flow
11.	Reactor Coolant Pump (RCP) Breaker Position (per train)	1(e)	4	V → R	SR 3.3.1.13	NA

(continued)

(e) Above the P-7 (Low Power Reactor Trips Block) interlock.

Table 3.3.1-1 (page 3 of 6)
Reactor Trip System Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
12.	Undervoltage RCPs (per train)	1[e]	4	K	SR 3.3.1.9 SR 3.3.1.10 SR 3.3.1.15	≥ 4920 V
13.	Underfrequency RCPs (per train)	1[e]	4	K	SR 3.3.1.9 SR 3.3.1.10 SR 3.3.1.15	≥ 56.08 Hz
14.	Steam Generator (SG) Water Level-Low Low (per SG)					
	a. Unit 1	1,2	4	E	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.15	≥ 16.1% of narrow range instrument span
	b. Unit 2	1,2	4	E	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.15	≥ 34.8% of narrow range instrument span
15.	Turbine Trip					
	a. Emergency Trip Header Pressure (per train)	1[f]	3	M → L	SR 3.3.1.10 SR 3.3.1.14	≥ 910 psig
	b. Turbine Throttle Valve Closure (per train)	1[f]	4	M → L	SR 3.3.1.10 SR 3.3.1.14	≥ 1% open
16.	Safety Injection (SI) Input from Engineered Safety Feature Actuation System (ESFAS)	1,2	2 trains	O → M	SR 3.3.1.13	NA

(continued)

(e) Above the P-7 (Low Power Reactor Trips Block) interlock.

(f) Above the P-8 (Power Range Neutron Flux) interlock.

Table 3.3.1-1 (page 4 of 6)
Reactor Trip System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
17. Reactor Trip System Interlocks					
a. Source Range Block Permissive, P-6	2[d]	2	Q → O	SR 3.3.1.11 SR 3.3.1.12	≥ 6E-11 amp
b. Low Power Reactor Trips Block, P-7					
(1) P-10 Input	1	3	R → P	SR 3.3.1.11 SR 3.3.1.12	NA
(2) P-13 Input	1	2	R → P	SR 3.3.1.10 SR 3.3.1.12	NA
c. Power Range Neutron Flux, P-8	1	3	R → P	SR 3.3.1.11 SR 3.3.1.12	≤ 32.1% RTP
d. Power Range Neutron Flux, P-10	1,2	3	Q → O	SR 3.3.1.11 SR 3.3.1.12	≥ 7.9% RTP and ≤ 12.1% RTP
e. Turbine Impulse Pressure, P-13	1	2	R → P	SR 3.3.1.10 SR 3.3.1.12	≤ 12.1% turbine power
18. Reactor Trip Breakers (RTBs)[g]	1,2	2 trains	P → N	SR 3.3.1.4	NA
	3[a], 4[a], 5[a]	2 trains	C	SR 3.3.1.4	NA
19. Reactor Trip Breaker Undervoltage and Shunt Trip Mechanisms	1,2	1 each per RTB	T → Q	SR 3.3.1.4	NA
	3[a], 4[a], 5[a]	1 each per RTB	C	SR 3.3.1.4	NA
20. Automatic Trip Logic	1,2	2 trains	O → M	SR 3.3.1.5	NA
	3[a], 4[a], 5[a]	2 trains	C	SR 3.3.1.5	NA

(a) With Rod Control System capable of rod withdrawal or one or more rods not fully inserted.

(d) Below the P-6 (Source Range Block Permissive) interlock.

(g) Including any reactor trip bypass breakers that are racked in and closed for bypassing an RTB.

3.3 INSTRUMENTATION

3.3.2 Engineered Safety Feature Actuation System (ESFAS) Instrumentation

LCO 3.3.2 The ESFAS instrumentation for each Function in Table 3.3.2-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.2-1.

ACTIONS

----------NOTE----------
Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one or more required channels or trains inoperable.	A.1 Enter the Condition referenced in Table 3.3.2-1 for the channel(s) or train(s).	Immediately
B. One channel inoperable.	B.1 Restore channel to OPERABLE status. OR ~~B.2.1 Be in MODE 3.~~ AND ~~B.2.2 Be in MODE 5.~~	48 hours RICT INSERT ~~54 hours~~ ~~84 hours~~

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One train inoperable.	C.1 --------NOTE-------- One train may be bypassed for up to 4 hours for surveillance testing provided the other train is OPERABLE. ---------- Restore train to OPERABLE status.	24 hours ← RICT INSERT
	OR	
	~~C.2.1~~ ~~Be in MODE 3.~~	~~30 hours~~
	AND	
	~~C.2.2~~ ~~Be in MODE 5.~~	~~60 hours~~

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One channel inoperable.	D.1 --------NOTE-------- One channel may be bypassed for up to 12 hours for surveillance testing. ---------- Place channel in trip.	72 hours RICT INSERT
	OR	
	~~D.2.1 Be in MODE 3.~~	~~78 hours~~
	AND	
	~~D.2.2 Be in MODE 4.~~	~~84 hours~~

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. One Containment Pressure channel inoperable.	E.1 --------NOTE-------- One additional channel may be bypassed for up to 12 hours for surveillance testing. ---------- Place channel in bypass.	72 hours
	OR	
	~~E.2.1~~ ~~Be in MODE 3.~~	~~78 hours~~
	AND	
	~~E.2.2~~ ~~Be in MODE 4.~~	~~84 hours~~
F. One channel or train inoperable.	F.1 Restore channel or train to OPERABLE status.	48 hours
	OR	
	~~F.2.1~~ ~~Be in MODE 3.~~	~~54 hours~~
	AND	
	~~F.2.2~~ ~~Be in MODE 4.~~	~~60 hours~~

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
G. One train inoperable.	G.1 --------NOTE-------- One train may be bypassed for up to 4 hours for surveillance testing provided the other train is OPERABLE. ---------- Restore train to OPERABLE status.	24 hours
	OR	
	G.2.1 Be in MODE 3.	30 hours
	AND	
	G.2.2 Be in MODE 4.	36 hours
H. One channel inoperable.	H.1 --------NOTE-------- One channel may be bypassed for up to 2 hours for surveillance testing provided the other channel is OPERABLE. ---------- Place channel in trip.	1 hour
	OR	
	H.2.1 Be in MODE 3.	7 hours
	AND	
	H.2.2 Be in MODE 4.	13 hours

RICT INSERT

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
I. One channel inoperable.	I.1	--------NOTE-------- The inoperable channel may be bypassed for up to 12 hours for surveillance testing of other channels. ----------	
		Place channel in trip.	72 hours
	OR		RICT INSERT
	~~I.2~~	~~Be in MODE 3.~~	~~78 hours~~
J. One or more trains inoperable.	J.1	Declare associated auxiliary feedwater pump inoperable.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
K. One channel inoperable.	K.1 --------NOTE-------- One channel may be bypassed for up to 12 hours for surveillance testing. ---------- Place channel in trip.	72 hours RICT INSERT
	OR	
	~~K.2.1 Be in MODE 3.~~	~~78 hours~~
	AND	
	~~K.2.2 Be in MODE 5.~~	~~108 hours~~

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
L. One or more channels inoperable.	L.1 Verify interlock is in required state for existing unit condition. OR ~~L.2.1 Be in MODE 3.~~ AND ~~L.2.2 Be in MODE 4.~~	1 hour ~~7 hours~~ ~~13 hours~~

INSERT TS 3.3.2 Conditions M, N, and O

SURVEILLANCE REQUIREMENTS

----------NOTE----------
Refer to Table 3.3.2-1 to determine which SRs apply for each ESFAS Function.

SURVEILLANCE		FREQUENCY
SR 3.3.2.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.2	Perform COT.	In accordance with the Surveillance Frequency Control Program

(continued)

3.3 INSTRUMENTATION

3.3.5 Loss of Power (LOP) Diesel Generator (DG) Start Instrumentation

LCO 3.3.5 Two channels per bus of the loss of voltage Function, two channels per bus of the degraded voltage Function and two channels per bus of the low degraded voltage Function shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4;
When associated DG is required to be OPERABLE by LCO 3.8.2, "AC Sources-Shutdown."

ACTIONS

----------NOTE----------
Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one channel on one or more buses inoperable.	A.1 --------NOTE-------- For loss of voltage Function, the inoperable channel may be bypassed for up to 2 hours for surveillance testing of the other channel. ---------- Place channel in trip.	1 hour RICT INSERT
B. One or more Functions with two channels on one or more buses inoperable.	B.1 Restore one channel for the Function on the affected bus to OPERABLE status.	1 hour RICT INSERT

(continued)

--------NOTE--------
RICT entry is not permitted for the Loss of Function Condition when the same Function is inoperable on more than one bus.

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.11 Pressurizer Power Operated Relief Valves (PORVs)

LCO 3.4.11 Each PORV and associated block valve shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

---------- NOTE ----------
Separate Condition entry is allowed for each PORV and each block valve.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more PORVs inoperable and capable of being manually cycled.	A.1 Close and maintain power to associated block valve.	1 hour
B. One PORV inoperable and not capable of being manually cycled.	B.1 Close associated block valve. AND	1 hour
	B.2 Remove power from associated block valve. AND	1 hour
	B.3 Restore PORV to OPERABLE status.	72 hours RICT INSERT

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One block valve inoperable.	C.1 Place associated PORV in manual control. AND C.2 Restore block valve to OPERABLE status.	1 hour 72 hours RICT INSERT
D. Required Action and associated Completion Time of Condition A, B, or C not met.	D.1 Be in MODE 3. AND D.2 Be in MODE 4.	6 hours 12 hours
E. Two PORVs inoperable and not capable of being manually cycled.	E.1 Be in MODE 3. AND E.2 Be in MODE 4.	6 hours 12 hours
F. Two block valves inoperable.	F.1 Restore one block valve to OPERABLE status.	2 hours
G. Required Action and associated Completion Time of Condition F not met.	G.1 Be in MODE 3. AND G.2 Be in MODE 4.	6 hours 12 hours

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.2 ECCS-Operating

LCO 3.5.2 Two ECCS trains shall be OPERABLE.

----------NOTES----------

1. In MODE 3, both Safety Injection (SI) pump flow paths and a portion of both Residual Heat Removal (RHR) pump flow paths may be isolated by closing the isolation valves for up to 2 hours to perform pressure isolation valve testing per SR 3.4.14.1.

2. In MODE 3, a portion of both Residual Heat Removal (RHR) pump flow paths may be isolated by closing the isolation valves for up to 2 hours to perform pressure isolation valve testing per SR 3.4.14.1, provided an alternate means of cold leg injection is available for each isolated flow path.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One train inoperable.	A.1 Restore train to OPERABLE status.	7 days RICT INSERT
B. Two trains inoperable. AND At least 100% of the ECCS flow equivalent to a single OPERABLE ECCS train available.	B.1 Restore one train to OPERABLE status.	72 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One or more containment air locks inoperable for reasons other than Condition A or B.	C.1 Initiate action to evaluate overall containment leakage rate per LCO 3.6.1. AND C.2 Verify a door is closed in the affected air lock. AND C.3 Restore air lock to OPERABLE status.	Immediately 1 hour 24 hours RICT INSERT
D. Required Action and associated Completion Time not met.	D.1 Be in MODE 3. AND D.2 Be in MODE 5.	6 hours 36 hours

3.6 CONTAINMENT SYSTEMS

3.6.3 Containment Isolation Valves

LCO 3.6.3 Each containment isolation valve shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

---------- NOTES----------
1. Penetration flow path(s) except for 48 inch purge valve flow paths may be unisolated intermittently under administrative controls.
2. Separate Condition entry is allowed for each penetration flow path.
3. Enter applicable Conditions and Required Actions for systems made inoperable by containment isolation valves.
4. Enter applicable Conditions and Required Actions of LCO 3.6.1, "Containment," when isolation valve leakage results in exceeding the overall containment leakage rate acceptance criteria.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ---------NOTE--------- Only applicable to penetration flow paths with two containment isolation valves. ---------- One or more penetration flow paths with one containment isolation valve inoperable except for purge valve leakage not within limit.	A.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic or remote manual valve, closed manual valve, blind flange, or check valve with flow through the valve secured. AND	4 hours ← RICT INSERT (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2 --------NOTES-------- 1. Isolation devices in high radiation areas may be verified by use of administrative means. 2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means. ---------- Verify the affected penetration flow path is isolated.	Once per 31 days for isolation devices outside containment following isolation AND Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. --------NOTE-------- Only applicable to penetration flow paths with only one containment isolation valve and a closed system. ---------- One or more penetration flow paths with one containment isolation valve inoperable.	C.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic or remote manual valve, closed manual valve, or blind flange. AND C.2 --------NOTES-------- 1. Isolation devices in high radiation areas may be verified by use of administrative means. 2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means. ---------- Verify the affected penetration flow path is isolated.	72 hours RICT INSERT Once per 31 days following isolation
D. One or more penetration flow paths with one or more containment purge valves not within purge valve leakage limits.	D.1 Restore purge valve leakage to within limits.	24 hours

(continued)

3.7 PLANT SYSTEMS

3.7.2 Main Steam Isolation Valves (MSIVs)

LCO 3.7.2 Four MSIVs and their associated actuator trains shall be OPERABLE.

APPLICABILITY: MODE 1,
MODES 2 and 3 except when all MSIVs are closed.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One MSIV actuator train inoperable.	A.1 Restore MSIV actuator train to OPERABLE status.	7 days RICT INSERT
B. Two MSIVs each with one actuator train inoperable such that the inoperable actuator trains are in different ESF Divisions.	B.1 Restore one MSIV actuator train to OPERABLE status.	72 hours RICT INSERT
C. Two MSIVs each with one actuator train inoperable and both inoperable actuator trains are in the same ESF Division.	C.1 Restore one MSIV actuator train to OPERABLE status.	24 hours
D. Two MSIV actuator trains inoperable on the same MSIV.	D.1 Declare the affected MSIV inoperable.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Three or more MSIV actuator trains inoperable. OR Required Action and associated Completion Time of Condition A, B, or C not met.	E.1 Declare each affected MSIV inoperable.	Immediately
F. One MSIV inoperable in MODE 1.	F.1 Restore MSIV to OPERABLE status.	8 hours RICT INSERT
G. Required Action and associated Completion Time of Condition F not met.	G.1 Be in MODE 2.	6 hours
H. ---------NOTE--------- Separate Condition entry is allowed for each MSIV. ---------- One or more MSIV inoperable in MODE 2 or 3.	H.1 Close MSIV. AND H.2 Verify MSIV is closed.	8 hours Once per 7 days
I. Required Action and associated Completion Time of Condition H not met.	I.1 Be in MODE 3. AND I.2 Be in MODE 4.	6 hours 12 hours

3.7 PLANT SYSTEMS

3.7.4 Steam Generator (SG) Power Operated Relief Valves (PORVs)

LCO 3.7.4 Four SG PORV lines shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SG PORV line inoperable.	A.1 Restore SG PORV line to OPERABLE status.	30 days RICT INSERT
B. Two or more SG PORV lines inoperable.	B.1 Restore all but one SG PORV line to OPERABLE status.	24 hours RICT INSERT
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 4.	6 hours 12 hours

C. Three or more SG PORV lines inoperable.	C.1 Restore all but one SG PORV lines to OPERABLE status.	24 hours

3.7 PLANT SYSTEMS

3.7.5 Auxiliary Feedwater (AF) System

LCO 3.7.5 Two AF trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

----------NOTE----------
LCO 3.0.4.b is not applicable when entering MODE 1.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One AF train inoperable.	A.1 Restore AF train to OPERABLE status.	72 hours ← RICT INSERT
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	6 hours 12 hours
C. Two AF trains inoperable.	C.1 ---------NOTE-------- LCO 3.0.3 and all other LCO Required Actions requiring MODE changes are suspended until one AF train is restored to OPERABLE status. --- Initiate action to restore one AF train to OPERABLE status.	 Immediately

3.7 PLANT SYSTEMS

3.7.7 Component Cooling Water (CC) System

LCO 3.7.7 The CC System shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

---NOTE---
Enter applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops-MODE 4," for Residual Heat Removal loops made inoperable by CC.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CC flow path inoperable.	A.1 Restore CC flow path to OPERABLE status.	7 days RICT INSERT
B. One required CC pump inoperable.	B.1 Restore required CC pump to OPERABLE status.	7 days RICT INSERT
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	6 hours 36 hours

3.7 PLANT SYSTEMS

3.7.8 Essential Service Water (SX) System

LCO 3.7.8 The following SX trains shall be OPERABLE:

a. Two unit-specific SX trains; and

b. One opposite-unit SX train for unit-specific support.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One unit-specific SX train inoperable.	A.1 --------NOTES-------- 1. Enter applicable Conditions and Required Actions of LCO 3.8.1, "AC Sources-Operating," for Emergency Diesel Generator made inoperable by SX. 2. Enter applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops-MODE 4," for Residual Heat Removal loops made inoperable by SX. ---------- Restore unit-specific SX train to OPERABLE status.	72 hours RICT INSERT

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Opposite-unit SX train inoperable.	B.1 Restore opposite-unit SX train to OPERABLE status.	7 days RICT INSERT
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	6 hours 36 hours

3.8 ELECTRICAL POWER SYSTEMS

3.8.1 AC Sources-Operating

LCO 3.8.1 The following AC electrical sources shall be OPERABLE:

a. Two qualified circuits per bus between the offsite transmission network and the onsite Class 1E AC Electrical Power Distribution System; and

b. Two Diesel Generators (DGs) capable of supplying the onsite Class 1E AC Electrical Power Distribution System.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

----------NOTE----------
LCO 3.0.4.b is not applicable to DGs.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more buses with one required qualified circuit inoperable.	A.1 Perform SR 3.8.1.1 for the required OPERABLE qualified circuits. AND	1 hour AND Once per 8 hours thereafter
	A.2 Restore required qualified circuit(s) to OPERABLE status.	72 hours RICT INSERT

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.5 Restore DG to OPERABLE status.	14 days RICT INSERT
C. Required Action and associated Completion Time of Required Action B.1 not met.	C.1 Restore DG to OPERABLE status.	72 hours
D. One or more buses with two required qualified circuits inoperable.	D.1 Restore one required qualified circuit per bus to OPERABLE status.	24 hours RICT INSERT
E. One DG inoperable and one or more buses with one required qualified circuit inoperable. OR One DG inoperable and one bus with two required qualified circuits inoperable.	----------NOTE---------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems-Operating," when Condition E is entered with no AC power source to a division. ---------- E.1 Restore required qualified circuit(s) to OPERABLE status. OR E.2 Restore DG to OPERABLE status.	12 hours RICT INSERT 12 hours RICT INSERT

(continued)

3.8 ELECTRICAL POWER SYSTEMS

3.8.4 DC Sources-Operating

LCO 3.8.4 Division 11(21) and Division 12(22) DC electrical power subsystems shall be OPERABLE and not crosstied to the opposite unit.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One battery charger inoperable.	A.1	Crosstie opposite-unit bus with associated OPERABLE battery charger to the affected division.	2 hours
	AND		
	A.2	Restore battery terminal voltage to greater than or equal to the minimum established float voltage.	2 hours
	AND		
	A.3	Verify battery float current $\leq$ 3 amps.	Once per 12 hours
	AND		
	A.4	Restore battery charger to OPERABLE status.	7 days RICT INSERT

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One DC electrical power division crosstied to opposite-unit DC electrical power subsystem that has an inoperable battery charger, while opposite unit is in MODE 1, 2, 3, or 4.	B.1 Open at least one crosstie breaker between the crosstied divisions.	204 hours RICT INSERT
C. One DC electrical power division crosstied to opposite-unit DC electrical power subsystem with an inoperable source, while opposite unit is in MODE 5, 6, or defueled.	C.1 ---------NOTE-------- Only required when opposite unit has an inoperable battery. ---------- Verify opposite-unit DC bus load ≤ 200 amps. AND C.2 Open at least one crosstie breaker between the crosstied divisions.	Once per 12 hours 7 days RICT INSERT
D. One DC electrical power subsystem inoperable for reasons other than Condition A, B, or C.	D.1 Restore DC electrical power subsystem to OPERABLE status.	2 hours RICT INSERT
E. Required Action and Associated Completion Time not met.	E.1 Be in MODE 3. AND E.2 Be in MODE 5.	6 hours 36 hours

3.8 ELECTRICAL POWER SYSTEMS

3.8.7 Inverters-Operating

LCO 3.8.7 Four instrument bus inverters shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One instrument bus inverter inoperable.	A.1 --------NOTE--------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems-Operating" with any instrument bus de-energized. ---------- Restore inverter to OPERABLE status.	7 days RICT INSERT
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND	6 hours
	B.2 Be in MODE 5.	36 hours

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One AC electrical power distribution subsystem inoperable.	A.1 Restore AC electrical power distribution subsystem to OPERABLE status.	8 hours RICT INSERT
B. One AC instrument bus electrical power distribution subsystem inoperable.	B.1 Restore AC instrument bus electrical power distribution subsystem to OPERABLE status.	2 hours RICT INSERT
C. One DC electrical power distribution subsystem inoperable.	C.1 Restore DC electrical power distribution subsystem to OPERABLE status.	2 hours RICT INSERT
D. Required Action and associated Completion Time of Condition A, B, or C not met.	D.1 Be in MODE 3. AND D.2 Bc in MODE 5.	6 hours 36 hours

(continued)

5.5 Programs and Manuals

5.5.19 Surveillance Frequency Control Program

This program provides controls for Surveillance Frequencies. The program shall ensure that Surveillance Requirements specified in the Technical Specifications are performed at intervals sufficient to assure the associated Limiting Conditions for Operation are met.

a. The Surveillance Frequency Control Program shall contain a list of Frequencies of those Surveillance Requirements for which the Frequency is controlled by the program.

b. Changes to the Frequencies listed in the Surveillance Frequency Control Program shall be made in accordance with NEI 04-10, "Risk-Informed Method for Control of Surveillance Frequencies," Revision 1.

c. The provisions of Surveillance Requirements 3.0.2 and 3.0.3 are applicable to the Frequencies established in the Surveillance Frequency Control Program.

5.5.20 Risk Informed Completion Time Program

This program provides controls to calculate a Risk Informed Completion Time (RICT) and must be implemented in accordance with NEI 06-09-A, Revision 0, "Risk-Managed Technical Specifications (RMTS) Guidelines." The program shall include the following:

a. The RICT may not exceed 30 days;

b. A RICT may only be utilized in MODE 1 and 2;

c. When a RICT is being used, any change to the plant configuration change, as defined in NEI 06-09-A, Appendix A, must be considered for the effect on the RICT.

1. For planned changes, the revised RICT must be determined prior to implementation of the change in configuration.

2. For emergent conditions, the revised RICT must be determined within the time limits of the Required Action Completion Time (i.e., not the RICT) or 12 hours after the plant configuration change, whichever is less.

3. Revising the RICT is not required If the plant configuration change would lower plant risk and would result in a longer RICT.

5.5 Programs and Manuals

d. For emergent conditions, if the extent of condition evaluation for inoperable structures, systems, or components (SSCs) is not complete prior to exceeding the Completion Time, the RICT shall account for the increased possibility of common cause failure (CCF) by either:

1. Numerically accounting for the increased possibility of CCF in the RICT calculation; or

2. Risk Management Actions (RMAs) not already credited in the RICT calculation shall be implemented that support redundant or diverse SSCs that perform the function(s) of the inoperable SSCs, and, if practicable, reduce the frequency of initiating events that challenge the function(s) performed by the inoperable SSCs.

e. The risk assessment approaches and methods shall be acceptable to the NRC. The plant PRA shall be based on the as-built, as-operated, and maintained plant; and reflect the operating experience at the plant, as specified in Regulatory Guide 1.200, Revision 2. Methods to assess the risk from extending the Completion Times must be PRA methods approved for use with this program, or other methods approved by the NRC for generic use; and any change in the PRA methods to assess risk that are outside these approval boundaries require prior NRC approval.

B/B TS INSERTS

RICT INSERT

OR

In accordance with
the Risk Informed
Completion Time
Program

INSERT TS 3.3.1 Condition L

L.	Required Action and associated Completion Time of Condition K not met.	L.1	Reduce THERMAL POWER to < P-7.	6 hours

INSERT TS 3.3.1 Condition N

N.	Required Action and associated Completion Time of Condition M not met.	N.1	Reduce THERMAL POWER to < P-8.	6 hours

INSERT TS 3.3.1 Condition S

S.	Required Action and associated Completion Time of Condition R not met.	S.1	Be in MODE 2.	6 hours

INSERT TS 3.3.1 Condition U

U.	Required Action and associated Completion Time of Condition B, D, E, O, P, Q, or T not met.	U.1	Be in MODE 3.	6 hours

INSERT TS 3.3.1 Condition W

W. Required Action and associated Completion Time of Condition V not met.	W.1	Reduce THERMAL POWER to < P-7.	6 hours

INSERT TS 3.3.2 Condition M

M. Required Action and associated Completion Time of Conditions B, C, or K not met.	M.1	Be in MODE 3.	6 hours
	AND		
	M.2	Be in MODE 5.	36 hours

INSERT TS 3.3.2 Condition N

N. Required Action and associated Completion Time of Conditions D, E, F, G, H, or L not met.	N.1	Be in MODE 3.	6 hours
	AND		
	N.2	Be in MODE 4.	12 hours

INSERT TS 3.3.2 Condition O

O. Required Action and associated Completion Time of Condition I not met.	O.1	Be in MODE 3.	6 hours

ATTACHMENT 4
Enclosure 1, Revision 1, to LAR to Adopt
Risk Informed Completion Times TSTF-505, Revision 2

Braidwood Station, Units 1 and 2

Renewed Facility Operating License Nos. NPF-72 and NPF-77

Byron Station, Units 1 and 2

Renewed Facility Operating License Nos. NPF-37 and NPF-66

List of Revised Required Actions to Corresponding PRA Functions

Enclosure 1, Revision 1
List of Revised Required Actions to Corresponding PRA Functions

1. Introduction

Section 4.0, Item 2 of the NRC Final Safety Evaluation (Reference 1 of this Enclosure) for NEI 06-09-A, Revision 0-A, Risk-Informed Technical Specifications Initiative 4b, Risk-Managed Technical Specifications (RMTS) Guidelines, (Reference 2) identifies the following needed content:

- The license amendment request (LAR) will provide identification of the TS Limiting Conditions for Operation (LCOs) and action requirements to which the RMTS will apply.
- The LAR will provide a comparison of the TS functions to the PRA modeled functions of the structures, systems, and components (SSCs) subject to those LCO actions.
- The comparison should justify that the scope of the PRA model, including applicable success criteria such as number of SSCs required, flow rate, etc., are consistent with licensing basis assumptions (i.e., 50.46 ECCS flowrates) for each of the TS requirements, or an appropriate disposition or programmatic restriction will be provided.

This enclosure provides confirmation that the Byron and Braidwood Stations (BYR/BWD) PRA models include the necessary scope of SSCs and their functions to address each proposed application of the Risk-Informed Completion Time (RICT) Program to the proposed scope TS LCO Conditions, and provides the information requested for Section 4.0, Item 2 of the NRC Final Safety Evaluation. The scope of the comparison includes each of the TS LCO conditions and associated required actions within the scope of the RICT Program. The BYR/BWD PRA model has the capability to model directly or through use of a bounding surrogate the risk impact of entering each of the TS LCOs in the scope of the RICT Program.

Table E1-1 below lists each TS LCO Condition to which the RICT Program is proposed to be applied and documents the following information regarding the TSs with the associated safety analyses, the analogous PRA functions and the results of the comparison:

- Column "Tech Spec Description": Lists all of the LCOs and condition statements within the scope of the RICT Program.
- Column "SSCs Covered by TS LCO Condition": The SSCs addressed by each action requirement.
- Column "Modeled in PRA?": Indicates whether the SSCs addressed by the TS LCO Condition are included in the PRA.
- Column "Function Covered by TS LCO Condition": A summary of the required functions from the design basis analyses.
- Column "Design Success Criteria": A summary of the success criteria from the design basis analyses.
- Column "PRA Success Criteria": The function success criteria modeled in the PRA.
- Column "Comments": Provides the justification or resolution to address any inconsistencies between the TS and PRA functions regarding the scope of SSCs and the success criteria. Where the PRA scope of SSCs is not consistent with the TS, additional information is provided to describe how the LCO condition can be evaluated using appropriate surrogate events. Differences in the success criteria for TS functions are addressed to demonstrate the PRA criteria provide a realistic estimate of the risk of the TS condition as required by NEI 06-09-A, Revision 0-A.

Enclosure 1, Revision 1
List of Revised Required Actions to Corresponding PRA Functions

The corresponding SSCs for each TS LCO and the associated TS functions are identified and compared to the PRA. This description also includes the design success criteria and the applicable PRA success criteria. Any differences between the scope or success criteria are described in the table. Scope differences are justified by identifying appropriate surrogate events which permit a risk evaluation to be completed using the CRMP tool for the RICT program. Differences in success criteria typically arise due to the requirement in the PRA standard to make PRAs realistic rather than bounding, whereas design basis criteria are necessarily conservative and bounding. The use of realistic success criteria is necessary to conform to capability Category II of the PRA standard as required by NEI 06-09-A, Revision 0-A.

Examples of calculated RICT are provided in Table E1-2 for each individual condition to which the RICT applies (assuming no other SSCs modeled in the PRA are unavailable). These example calculations demonstrate the scope of the SSCs covered by TSs modeled in the PRA. RICTs were calculated for both BYR and BWD; however, due to the close similarity between Unit 1 and Unit 2 at each site, only the Unit 1 RICT result is shown in Table E1-2. Also note that the more limiting of the CDF and LERF RICT result is shown.

Following 4b implementation, the actual RICT values will be calculated on a plant- and unit-specific basis, using the actual plant configuration and the current revision of the PRA model representing the as-built, as-operated condition of the plant, as required by NEI 06-09-A, Revision 0-A, and the NRC safety evaluation, and may differ from the RICTs presented.

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List of Revised Required Actions to Corresponding PRA Functions

Table E1-1: In Scope TS/LCO Conditions to Corresponding PRA Functions								
BYR Tech Spec	**BWD Tech Spec**	**Tech Spec Description**	**SSCs Covered by TS LCO Condition**	**Modeled in PRA**	**Function Covered by TS LCO Condition**	**Design Success Criteria**	**PRA Success Criteria**	**Comments**
3.3.1.B	3.3.1.B	One Manual Reactor Trip channel inoperable.	Two manual Reactor Trip Channels	Yes	Reactor Trip Initiation	One of two reactor trip channels	Same	(Note 4)
3.3.1.D	3.3.1.D	One Power Range Neutron Flux-High channel inoperable.	Four Power Range Neutron Flux-High sensors	Yes	Reactor Trip Initiation	Two of four channels	Same	(Notes 1 and 2)
3.3.1.E	3.3.1.E	One channel inoperable.	Power Range Neutron Flux-Low, Power Range Neutron Flux-High Positive Rate, Overtemperature ΔT, Overpower ΔT, Pressurizer Pressure-High, SG Water Level (Low-Low) (Reference 4, Response to DORL RAI-1)	Yes	Reactor Trip Initiation	Power Range Neutron Flow-Low: two of four channels Power Range Neutron Flux-High Positive Rate: two of four channels Overtemperature ΔT: two of four channels Overpower ΔT: two of four channels Pressurizer Pressure-High: two of four channels SG Water Level (Low-Low): two of four channels on any one SG	Same	The functions Power Range Neutron Flux-High Positive Rate, Power-Range Neutron Flux-Low, and Pressurizer Pressure-High are not explicitly modeled in PRA, but loss of the associated channel will be used as a conservative surrogate in the RICT calculation. (Notes 1 and 2)

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List of Revised Required Actions to Corresponding PRA Functions

Table E1-1: In Scope TS/LCO Conditions to Corresponding PRA Functions								
BYR Tech Spec	**BWD Tech Spec**	**Tech Spec Description**	**SSCs Covered by TS LCO Condition**	**Modeled in PRA**	**Function Covered by TS LCO Condition**	**Design Success Criteria**	**PRA Success Criteria**	**Comments**
3.3.1.K	3.3.1.K	One channel inoperable.	RCPs (Undervoltage, Underfrequency) (per train), Pressurizer (Pressure Low, Water Level-High), Reactor Coolant Flow-Low (per loop)	Yes	Reactor Trip Initiation	RCP Undervoltage (per train): two of four channels RCP Underfrequency (per train): two of four channels Pressurizer Pressure Low: two of four channels Pressurizer Water Level-High: two of three channels Reactor Coolant Flow-Low: two of three channels in any loop	Same	(Notes 1 and 2)
3.3.1.M	3.3.1.M	One Turbine Trip channel inoperable.	Emergency Trip Header Pressure Trip (three sensors), Turbine Throttle Valve Closure (four sensors)	Yes	Reactor Trip Initiation	Two of Three Electro-Hydraulic (EH) Fluid Pressure switches OR Four of Four Turbine Throttle Valve limit switches (Reference 4, Response to EICB RAI-5)	Same	(Notes 1 and 2)
3.3.1.O	3.3.1.O	One train inoperable.	SI Input from ESFAS, Automatic Trip logic	Yes	Reactor Trip Initiation	One of two trains	Same	(Note 3)

Enclosure 1, Revision 1
List of Revised Required Actions to Corresponding PRA Functions

Table E1-1: In Scope TS/LCO Conditions to Corresponding PRA Functions								
BYR Tech Spec	**BWD Tech Spec**	**Tech Spec Description**	**SSCs Covered by TS LCO Condition**	**Modeled in PRA**	**Function Covered by TS LCO Condition**	**Design Success Criteria**	**PRA Success Criteria**	**Comments**
3.3.1.P	3.3.1.P	One RTB train inoperable.	Reactor Trip Breakers	Yes	Reactor Trip Initiation	One of two RTBs open	Same	(Note 5)
3.3.1.T	3.3.1.T	One trip mechanism inoperable for one RTB.	RTB Undervoltage and Shunt Trip Mechanisms	Yes	Reactor Trip Initiation	One trip mechanism	Same	(Notes 3 and 4)
3.3.2.B	3.3.2.B	One channel inoperable.	Manual Initiation (SI, CS, CI (Phase A and B Isolation))	Yes	ESF Actuation	SI/CI Phase A: Actuation of one switch at one of two panels CS/CI Phase B: Actuation of two of two switches at one of two panels (Reference 4, Response to EICB RAI-4)	Same	The functions Containment Spray and Containment Isolation - Phase B Isolation - Automatic Actuation Logic and Actuation Relays are not explicitly modeled in PRA, but loss of the associated channel will be used as a conservative surrogate in the RICT calculation. (Notes 1 and 2)

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List of Revised Required Actions to Corresponding PRA Functions

Table E1-1: In Scope TS/LCO Conditions to Corresponding PRA Functions								
BYR Tech Spec	**BWD Tech Spec**	**Tech Spec Description**	**SSCs Covered by TS LCO Condition**	**Modeled in PRA**	**Function Covered by TS LCO Condition**	**Design Success Criteria**	**PRA Success Criteria**	**Comments**
3.3.2.C	3.3.2.C	One train inoperable.	Automatic Actuation Logic and Actuation Relays (SI, CS, CI (Phase A and B Isolation, Switchover to Containment Sump)	Yes	ESF Actuation	One of two trains	Same	The functions Containment Spray and Containment Isolation - Phase B Isolation - Automatic Actuation Logic and Actuation Relays are not explicitly modeled in PRA, but loss of the associated channel will be used as a conservative surrogate in the RICT calculation. (Notes 1 and 2)

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List of Revised Required Actions to Corresponding PRA Functions

Table E1-1: In Scope TS/LCO Conditions to Corresponding PRA Functions								
BYR Tech Spec	**BWD Tech Spec**	**Tech Spec Description**	**SSCs Covered by TS LCO Condition**	**Modeled in PRA**	**Function Covered by TS LCO Condition**	**Design Success Criteria**	**PRA Success Criteria**	**Comments**
3.3.2.D	3.3.2.D	One channel inoperable.	SI (Containment Pressure-High 1, Pressurizer Pressure-Low, Steam Line Pressure Low), Steam Line Isolation (Containment Pressure-High 2), Steam Line Pressure (Low, Negative Rate-High), Turbine Trip and Feedwater Isolation (SG Water Level-High High- P-14), Auxiliary Feedwater (SG Water Level-Low Low)	Yes	ESF Actuation, P-14: Trips Main Feed Pumps, Trips Main Turbine, Closes Feedwater Isolation and Discharge Valves	SI (Containment Pressure-High 1): two of three SI (PZR Pressure Low): two of four SI (steam line pressure low): two of three in one steam line Steam Line Isolation (Containment Pressure-High 2): two of three Steam Line Pressure (Low, Negative Rate-High): two of three in one steam line Turbine Trip and Feedwater Isolation (SG Water Level-High High-P-14): two of four channels on any SG Auxiliary Feedwater (SG Water Level-Low Low): two of four channels on any SG	Same	The functions Steam Line Isolation - Containment Pressure High-2, Steam Line Isolation - Steam Line Pressure - Negative Rate-High are not explicitly modeled in PRA, but loss of the associated channel will be used as a conservative surrogate in the RICT calculation. (Notes 1 and 2)

Enclosure 1, Revision 1
List of Revised Required Actions to Corresponding PRA Functions

Table E1-1: In Scope TS/LCO Conditions to Corresponding PRA Functions								
BYR Tech Spec	**BWD Tech Spec**	**Tech Spec Description**	**SSCs Covered by TS LCO Condition**	**Modeled in PRA**	**Function Covered by TS LCO Condition**	**Design Success Criteria**	**PRA Success Criteria**	**Comments**
3.3.2.G	3.3.2.G	One train inoperable.	Automatic Actuation Logic and Actuation Relays (Steam Line Isolation, Turbine Trip and Feedwater Isolation, Auxiliary Feedwater)	Yes	ESF Actuation	One of two trains	Same	
3.3.2.I	3.3.2.I	One channel inoperable.	Undervoltage Reactor Coolant Pump (per train)	Not explicitly	ESF Actuation	Two of four	Same	This function is not explicitly modeled, but loss of the associated channel will be used as a conservative surrogate in the RICT calculation. (Notes 1 and 2)
3.3.2.K	3.3.2.K	One channel inoperable.	Switchover to Containment Sump (coincident with an SI signal) – Refueling Water Storage Tank (RWST) Level-Low Low	Yes	ESF Actuation	Two of four	Same	(Notes 1 and 2)

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List of Revised Required Actions to Corresponding PRA Functions

Table E1-1: In Scope TS/LCO Conditions to Corresponding PRA Functions

BYR Tech Spec	BWD Tech Spec	Tech Spec Description	SSCs Covered by TS LCO Condition	Modeled in PRA	Function Covered by TS LCO Condition	Design Success Criteria	PRA Success Criteria	Comments
3.3.5.A	3.3.5.A	One or more Functions with one channel on one or more buses inoperable.	There are three types of loss of power DG start instrumentation functions, and each function has two channels: -Loss of Voltage -Degraded Voltage -Low Degraded Voltage	Not explicitly	Diesel Generator - Loss of Voltage Start as well as 4kV Bus load shedding and initiating and sequencing	Two of two channels per function per bus. (Reference 4, Response to EEOB RAI-2, Part 2)	Same	These channels are not explicitly modeled, but DG fail-to-start will be used as a conservative surrogate in the RICT calculation.
3.3.5.B	3.3.5.B	One or more Functions with two channels on one or more buses inoperable.	See LCO Condition 3.3.5.A					
3.4.11. B	3.4.11. B	One PORV inoperable and not capable of being manually cycled.	Two PORVS	Yes	RCS depressurization, once through core cooling (feed and bleed)	One PORV (Reference 3, Response to APLA RAI 11, Part b)	One PORV with One CV pump OR Two PORVs with One SI pump	

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List of Revised Required Actions to Corresponding PRA Functions

Table E1-1: In Scope TS/LCO Conditions to Corresponding PRA Functions								
BYR Tech Spec	**BWD Tech Spec**	**Tech Spec Description**	**SSCs Covered by TS LCO Condition**	**Modeled in PRA**	**Function Covered by TS LCO Condition**	**Design Success Criteria**	**PRA Success Criteria**	**Comments**
3.4.11.C	3.4.11.C	One block valve inoperable.	Two PORV block valves	Yes	Isolate associated PORV	Two PORV Block valves closable.	Same	
3.5.2.A	3.5.2.A	One train inoperable.	Two ECCS trains (ECCS train consists of one Centrifugal Charging, one Safety Injection, and one Residual Heat Removal subsystem.)	Yes	Emergency make up to the RCS via injection from the RWST to the cold legs, and recirculation from the containment sump	3 ECCS subsystems between two trains such that at least 100% ECCS flow equivalent to a single operable ECCS train is available.	Same	
3.6.2.C	3.6.2.C	One or more containment air locks inoperable for reasons other than Condition A or B.	Containment Airlocks	Not explicitly	Containment integrity	Airlock leakage within allowable containment leakage.	Same	The containment airlocks are not modeled but their unavailability will be conservatively analyzed as an early containment failure in the RICT calculation.

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List of Revised Required Actions to Corresponding PRA Functions

Table E1-1: In Scope TS/LCO Conditions to Corresponding PRA Functions								
BYR Tech Spec	**BWD Tech Spec**	**Tech Spec Description**	**SSCs Covered by TS LCO Condition**	**Modeled in PRA**	**Function Covered by TS LCO Condition**	**Design Success Criteria**	**PRA Success Criteria**	**Comments**
3.6.3.A	3.6.3.A	One or more penetration flow paths with one containment isolation valve inoperable except for purge valve leakage not within limit.	Two active or passive isolation devices on each fluid penetration line	Yes	Containment boundary and minimization of RCS inventory loss	One of two isolation devices per penetration.	Same	Selected CI valves are modeled and can be used to bound the impact of the failure.
3.6.3.C	3.6.3.C	One or more penetration flow paths with one containment isolation valve inoperable.	One active or passive device on each fluid penetration	Yes	Containment boundary and minimization of RCS inventory loss	Integrity of closed system or containment isolation valve.	Same	Selected CI valves are modeled and can be used to bound the impact of the failure.
3.7.2.A	3.7.2.A	One MSIV actuator train inoperable.	Main Steam Isolation Valves (MSIVs)	Yes	Isolate Main Steam Lines	One MSIV closure per steam generator (one of two actuator trains)	Same	

Enclosure 1, Revision 1
List of Revised Required Actions to Corresponding PRA Functions

Table E1-1: In Scope TS/LCO Conditions to Corresponding PRA Functions								
BYR Tech Spec	**BWD Tech Spec**	**Tech Spec Description**	**SSCs Covered by TS LCO Condition**	**Modeled in PRA**	**Function Covered by TS LCO Condition**	**Design Success Criteria**	**PRA Success Criteria**	**Comments**
3.7.2.B	3.7.2.B	Two MSIVs each with one actuator train inoperable such that the inoperable actuator trains are in different ESF Divisions.	See LCO Condition 3.7.2.A					
3.7.2.F	3.7.2.F	One MSIV inoperable in MODE 1.	Main Steam Isolation Valves (MSIVs)	Yes	Isolate Main Steam Lines	Closure of 3 of 4 MSIVs.	Same	
3.7.4.A	3.7.4.A	One SG PORV line inoperable.	Steam Generator (SG) Power Operated Relief Valves (PORV)	Yes	Pressure relief and plant cooldown	Two of four SG PORVs	SGTR: two of four SG PORVs open All transients and LOCA with scram and power available: one of four SG PORVs	
3.7.4.B	3.7.4.B	Two SG PORV lines inoperable.	See LCO Condition 3.7.4.A					

Enclosure 1, Revision 1
List of Revised Required Actions to Corresponding PRA Functions

Table E1-1: In Scope TS/LCO Conditions to Corresponding PRA Functions								
BYR Tech Spec	**BWD Tech Spec**	**Tech Spec Description**	**SSCs Covered by TS LCO Condition**	**Modeled in PRA**	**Function Covered by TS LCO Condition**	**Design Success Criteria**	**PRA Success Criteria**	**Comments**
3.7.5.A	3.7.5.A	One AF train inoperable.	AF valves, flowpath and pumps	Yes	Supply feedwater to steam generators to remove RCS decay heat	One of two AF trains	One AF pump supplying 3 SGs OR One AF pump supplying 2 SGs with manually throttled flow OR One AF pump injecting to 4 SGs (ATWS)	
3.7.7.A	3.7.7.A	One CC flow path inoperable.	Two CC trains comprised of one pump and head tank with associated valves, heat exchanger, instrumentation and controls.	Yes	Heat sink for removing process and operating heat from safety related components during a Design Basis Accident or transient	One of two cooling trains	Same	
3.7.7.B	3.7.7.B	One required CC pump inoperable.	See LCO Condition 3.7.7.A					

Enclosure 1, Revision 1
List of Revised Required Actions to Corresponding PRA Functions

Table E1-1: In Scope TS/LCO Conditions to Corresponding PRA Functions								
BYR Tech Spec	**BWD Tech Spec**	**Tech Spec Description**	**SSCs Covered by TS LCO Condition**	**Modeled in PRA**	**Function Covered by TS LCO Condition**	**Design Success Criteria**	**PRA Success Criteria**	**Comments**
3.7.8.A	3.7.8.A	One unit-specific SX train inoperable.	Two SX trains comprised of SX pumps, valves, strainers and heat exchangers	Yes	Provides a heat sink for the removal of process and operating heat from safety related components during a Design Basis Accident or transient	One of two SX trains per unit	One of two SX pumps on accident unit, 1 SX pump on opposite unit with crossties open.	
3.7.8.B	3.7.8.B	Opposite-unit SX train inoperable.	One SX train on the opposite unit comprised of SX pumps, valves, strainers, heat exchangers, and a cross-tie flowpath	Yes	Provides a heat sink for the removal of process and operating head from safety related components during a Design Basis Accident or transient	One SX train on the opposite unit	One of two SX pumps on accident unit OR one SX pump on opposite unit with crossties open.	
3.8.1.A	3.8.1.A	One or more buses with one required qualified circuit inoperable.	Two qualified circuits between the offsite transmission network and the onsite 1E AC Electrical Power Distribution System.	Yes	Provide power from offsite transmission network to onsite Class one buses	One qualified circuit between the offsite transmission network and the onsite 1E AC Electrical Power Distribution System.	Same	

Enclosure 1, Revision 1
List of Revised Required Actions to Corresponding PRA Functions

Table E1-1: In Scope TS/LCO Conditions to Corresponding PRA Functions								
BYR Tech Spec	**BWD Tech Spec**	**Tech Spec Description**	**SSCs Covered by TS LCO Condition**	**Modeled in PRA**	**Function Covered by TS LCO Condition**	**Design Success Criteria**	**PRA Success Criteria**	**Comments**
3.8.1.B	3.8.1.B	One required DG inoperable.	Two EDGs capable of supplying onsite 1E AC Electrical Power Distribution System	Yes	Provide power to safety related buses when offsite power to them is lost	1 of 2 EDGs per unit	Same	
3.8.1.D	3.8.1.D	One or more buses with two required qualified circuits inoperable.	See LCO Condition 3.8.1.A					
3.8.1.E	3.8.1.E	One DG inoperable and one or more buses with one required qualified circuit inoperable. OR One DG inoperable and one bus with two required qualified circuits inoperable.	See LCO Condition 3.8.1.A and 3.8.1.B					

Enclosure 1, Revision 1
List of Revised Required Actions to Corresponding PRA Functions

Table E1-1: In Scope TS/LCO Conditions to Corresponding PRA Functions								
BYR Tech Spec	**BWD Tech Spec**	**Tech Spec Description**	**SSCs Covered by TS LCO Condition**	**Modeled in PRA**	**Function Covered by TS LCO Condition**	**Design Success Criteria**	**PRA Success Criteria**	**Comments**
3.8.4.A	3.8.4.A	One battery charger inoperable.	DC Battery chargers	Yes	Ensure availability of required DC power to shut down the reactor and maintain it in a safe condition after an Anticipated Operational Occurrence or a postulated DBA	One of two DC divisions	Same	(Note 6)
3.8.4.B	3.8.4.B	One DC electrical power division crosstied to opposite-unit DC electrical power subsystem that has an inoperable battery charger, while opposite unit is in MODE 1, 2, 3 or 4.	DC batteries and battery chargers	Yes	Ensure availability of required DC power to shut down the reactor and maintain it in a safe condition after an Anticipated Operational Occurrence or a postulated DBA	One of two DC divisions	Same	(Note 6)

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Table E1-1: In Scope TS/LCO Conditions to Corresponding PRA Functions								
BYR Tech Spec	**BWD Tech Spec**	**Tech Spec Description**	**SSCs Covered by TS LCO Condition**	**Modeled in PRA**	**Function Covered by TS LCO Condition**	**Design Success Criteria**	**PRA Success Criteria**	**Comments**
3.8.4.C	3.8.4.C	One DC electrical power division crosstied to opposite-unit DC electrical power subsystem with an inoperable source, while opposite unit is in MODE 5, 6, or defueled.	See LCO Condition 3.8.4.B					
3.8.4.D	3.8.4.D	One DC electrical power subsystem inoperable for reasons other than Condition A, B, or C.	DC batteries, battery chargers, cabling and controls	Yes	Ensure availability of required DC power to shut down the reactor and maintain it in a safe condition after an Anticipated Operational Occurrence or a postulated DBA	One of two DC divisions	Same	(Note 6)

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List of Revised Required Actions to Corresponding PRA Functions

Table E1-1: In Scope TS/LCO Conditions to Corresponding PRA Functions								
BYR Tech Spec	**BWD Tech Spec**	**Tech Spec Description**	**SSCs Covered by TS LCO Condition**	**Modeled in PRA**	**Function Covered by TS LCO Condition**	**Design Success Criteria**	**PRA Success Criteria**	**Comments**
3.8.7.A	3.8.7.A	One instrument bus inverter inoperable.	Four inverters per unit	Yes	Ensure availability of AC electrical power for the systems instrumentation required to shut down the reactor and maintain it in a safe shutdown condition after an Anticipated Operational Occurrence or a postulated DBA	Two of four inverters	Same	
3.8.9.A	3.8.9.A	One AC electrical power distribution subsystem inoperable.	Two subsystems	Yes	Ensure availability of required AC power to shut down the reactor and maintain it in a safe condition after an Anticipated Operational Occurrence or a postulated DBA	One of two AC distribution subsystems	Same	

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List of Revised Required Actions to Corresponding PRA Functions

Table E1-1: In Scope TS/LCO Conditions to Corresponding PRA Functions								
BYR Tech Spec	**BWD Tech Spec**	**Tech Spec Description**	**SSCs Covered by TS LCO Condition**	**Modeled in PRA**	**Function Covered by TS LCO Condition**	**Design Success Criteria**	**PRA Success Criteria**	**Comments**
3.8.9.B	3.8.9.B	One AC instrument bus electrical power distribution subsystem inoperable.	Two subsystems	Yes	Ensure availability of required AC instrument bus electrical power to shut down the reactor and maintain it in a safe condition after an Anticipated Operational Occurrence or a postulated DBA	One of two AC distribution subsystems	Same	
3.8.9.C	3.8.9.C	One DC electrical power distribution subsystem inoperable.	Two subsystems	Yes	Ensure availability of required DC power to shut down the reactor and maintain it in a safe condition after an Anticipated Operational Occurrence or a postulated DBA	One of two DC distribution subsystems	Same	(Note 6)

Table E1-1 Notes:

[1] The reactor protection system is segmented into four distinct but interconnected modules: field transmitters and process sensors, Signal Process Control and Protection System, Solid State Protection System (SSPS), and reactor trip switchgears. Field transmitters provide measurements of the unit parameters to the Signal Process Control and Protection System via separate, redundant channels. The Signal Process Control and Protection System forwards outputs to the SSPS, which consists of two redundant trains, to initiate a reactor trip or actuate Engineering Safety Functions.

[2] Depending on the measured parameter, three or four instrumentation channels are provided to ensure protective action when required and to prevent inadvertent isolation resulting from instrumentation malfunctions. The output trip signal of each instrumentation channel initiates a trip logic. Failure of any one trip logic does not result in an inadvertent trip. Generally, if a parameter is used only for input to the protection circuits, three channels with a two-out-of-three logic are sufficient to provide the required reliability and redundancy. If a parameter is used for input to the SSPS and a control function, four channels with a two-out-of-four logic are sufficient.

[3] Each instrumentation channel provides input to both trains of the SSPS, which initiates a reactor trip on one-out-of-two logic. Each train of SSPS provides input to the Reactor Trip Breakers (RTBs) by de-energizing the RTB undervoltage coils, which trips open the RTBs, tripping the reactor. One-out-of-two open RTBs will trip the reactor.

[4] Each RTB is equipped with a shunt trip device that is energized to trip the RTB open upon receipt of a manual reactor trip signal, thus providing a redundant and diverse trip mechanism. Two Manual Reactor Trip channels provide the signal from reactor trip switches located in the Main Control Room to the RTBs.

[5] A trip breaker train consists of all trip breakers associated with a single Reactor Trip System logic train that are racked in, closed, and capable of supplying power to the Rod Control System.

[6] PRA Success Criteria for bleed and feed cooling requires one CV pump and one PORV or one SI pump and two PORVs. Each PORV requires power from its respective DC division to perform its safety function for feed and bleed.

Enclosure 1, Revision 1
List of Revised Required Actions to Corresponding PRA Functions

Table E1-2: In Scope TS/LCO Conditions RICT Estimate			
Tech Spec	LCO Condition	RICT Estimate[1,2,3]	
		BYR	BWD
3.3.1.B	One Manual Reactor Trip channel inoperable.	30 days	30 days
3.3.1.D	One Power Range Neutron Flux-High channel inoperable.	30 days	30 days
3.3.1.E	One channel inoperable.	30 days	30 days
3.3.1.K	One channel inoperable.	30 days	30 days
3.3.1.M	One Turbine Trip channel inoperable.	30 days	30 days
3.3.1.O	One train inoperable.	30 days	30 days
3.3.1.P	One RTB train inoperable.	30 days	30 days
3.3.1.T	One trip mechanism inoperable for one RTB.	30 days	30 days
3.3.2.B	One channel inoperable.	30 days	30 days
3.3.2.C	One train inoperable.	30 days	30 days
3.3.2.D	One channel inoperable.	30 days	30 days
3.3.2.G	One train inoperable.	30 days	30 days
3.3.2.I	One channel inoperable.	30 days	30 days
3.3.2.K	One channel inoperable.	30 days	30 days
3.3.5.A	One or more Functions with one channel on one or more buses inoperable.	30 days	30 days
3.3.5.B	One or more Functions with two channels on one or more buses inoperable.	30 days	30 days
3.4.11.B	One PORV inoperable and not capable of being manually cycled.	30 days	30 days
3.4.11.C	One block valve inoperable.	30 days	30 days
3.5.2.A	One train inoperable.	30 days	30 days
3.6.2.C	One or more containment air locks inoperable for reasons other than Condition A or B.	177 hrs	175 hrs
3.6.3.A	One or more penetration flow paths with one containment isolation valve inoperable except for purge valve leakage not within limit.	13 hrs	14 hrs
3.6.3.C	One or more penetration flow paths with one containment isolation valve inoperable.	13 hrs	14 hrs
3.7.2.A	One MSIV actuator train inoperable.	30 days	30 days
3.7.2.B	Two MSIVs each with one actuator train inoperable such that the inoperable actuator trains are in different ESF Divisions.	30 days	30 days
3.7.2.F	One MSIV inoperable in MODE 1.	30 days	30 days
3.7.4.A	One SG PORV line inoperable.	30 days	30 days
3.7.4.B	Two SG PORV lines inoperable.	30 days	30 days
3.7.5.A	One AF train inoperable.	139 hrs	196 hrs
3.7.7.A	One CC flow path inoperable.	30 days	30 days
3.7.7.B	One required CC pump inoperable.	30 days	30 days
3.7.8.A	One unit-specific SX train inoperable.	30 days	30 days
3.7.8.B	Opposite-unit SX train inoperable.	30 days	30 days
3.8.1.A	One or more buses with one required qualified circuit inoperable.	30 days	30 days
3.8.1.B	One required DG inoperable.	30 days	30 days
3.8.1.D	One or more buses with two required qualified circuits inoperable.	30 days	30 days
3.8.1.E	One DG inoperable and one or more buses with one required qualified circuit inoperable OR One DG inoperable and one bus with two required qualified circuits inoperable.	581 hrs	616 hrs

Enclosure 1, Revision 1
List of Revised Required Actions to Corresponding PRA Functions

Table E1-2: In Scope TS/LCO Conditions RICT Estimate			
Tech Spec	**LCO Condition**	**RICT Estimate[1,2,3]**	
		BYR	**BWD**
3.8.4.A	One battery charger inoperable.	30 days	30 days
3.8.4.B	One DC electrical power division crosstied to opposite-unit DC electrical power subsystem that has an inoperable battery charger, while opposite unit is in MODE 1, 2, 3 or 4.	30 days	30 days
3.8.4.C	One DC electrical power division crosstied to opposite-unit DC electrical power subsystem with an inoperable source, while opposite unit is in MODE 5, 6, or defueled.	30 days	30 days
3.8.4.D	One DC electrical power subsystem inoperable for reasons other than Condition A, B, or C.	38 hrs	55 hrs
3.8.7.A	One instrument bus inverter inoperable.	473 hrs	30 days
3.8.9.A	One AC electrical power distribution subsystem inoperable.	26 hrs	23 hrs
3.8.9.B	One AC instrument bus electrical power distribution subsystem inoperable.	109 hrs	131 hrs
3.8.9.C	One DC electrical power distribution subsystem inoperable.	38 hrs	55 hrs

Table E1-2 Notes:

1. RICTs were calculated for both units at BYR and BWD; however, due to the close similarity between the Unit 1 and Unit 2 at each site, only the Unit 1 RICT is shown. Following 4b implementation, the actual RICT values will be calculated on a plant- and unit-specific basis, using the actual plant configuration and the current revision of the PRA model representing the as-built, as-operated condition of the plant, as required by NEI 06-09-A, Revision 0-A and the NRC safety evaluation, and may differ from the RICTs presented.

2. RICTs are based on the internal events, internal flood, and internal fire PRA model calculations with seismic and high winds CDF and LERF penalties. RICTs calculated to be greater than 30 days are capped at 30 days based on NEI 06-09-A, Revision 0-A. RICTs not capped at 30 days are rounded to nearest number of hours.

3. Per NEI 06-09-A, Revision 0-A, for cases where the total CDF or LERF is greater than 1E-03/yr or 1E-04/yr, respectively, the RICT Program will not be entered.

2. References

1. Letter from Jennifer M. Golder (NRC) to Biff Bradley (NEI), "Final Safety Evaluation for Nuclear Energy Institute (NEI) Topical Report (TR) NEI 06-09-A, 'Risk-Informed Technical Specifications Initiative 4b, Risk-Managed Technical Specifications (RMTS) Guidelines,'" dated May 17, 2007 (ADAMS Accession No. ML071200238)

2. Nuclear Energy Institute (NEI) Topical Report (TR) NEI 06-09-A, "Risk-Informed Technical Specifications Initiative 4b, Risk-Managed Technical Specifications (RMTS) Guidelines," Revision 0-A, dated October 12, 2012 (ADAMS Accession No. ML12286A322)

3. Letter from P. R. Simpson (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, "Response to Request for Additional Information Regarding Application to Revise Braidwood Station and Byron Station Technical Specifications to Adopt Risk Informed Completion Times TSTF-505, Revision 2, 'Provide Risk-Informed Extended Completion Times – RITSTF Initiative 4b'," dated September 5, 2019 (ADAMS Accession No. ML19248C699)

4. Letter from D. Murray (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, "Response to Request for Additional Information Regarding Application to Revise Braidwood Station and Byron Station Technical Specifications to Adopt Risk Informed Completion Times TSTF-505, Revision 2, 'Provide Risk-Informed Extended Completion Times – RITSTF Initiative 4b'," dated October 7, 2019 (ADAMS Accession No. ML19280D178)