Comment: RAs A.1 and B.1 specify the periodic performance of an action, RAs A.2, B.2 and C.1 declare another component inoperable, RA B.3 performs OPERABILITY determination and performance of a surveillance. Condition H is a default Condition. Therefore these Conditions are excluded.

3.8 ELECTRICAL POWER SYSTEMS

3.8.1 AC Sources - Operating

LCO 3.8.1 The following AC electrical power sources shall be OPERABLE:

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

b. Two diesel generators (DGs) each capable of supplying one train of the onsite Class 1E AC Electrical Power Distribution System, and

[c. Automatic load sequencers for Train A and Train B.]

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 [required] offsite circuit inoperable.	A.1 Perform SR 3.8.1.1 for OPERABLE [required] offsite circuit. AND	1 hour AND Once per 8 hours thereafter
	A.2 Declare required feature(s) with no offsite power available inoperable when its redundant required feature(s) is inoperable. AND	24 hours from discovery of no offsite power to one train concurrent with inoperability of redundant required feature(s)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	A.3[.1] Restore [required] offsite circuit to OPERABLE status. [Reviewer's Note: Below applicable to TSTF 505 OR A.3.2.1 Establish a RICT AND A.3.2.2 Restore [required] offsite circuit to OPERABLE status.	72 hours 72 hours In accordance with the Risk Informed Completion Time Program, not to exceed 30 days]
B. One [required] DG inoperable.	B.1 Perform SR 3.8.1.1 for OPERABLE [required] offsite circuit(s). AND B.2 Declare required feature(s) supported by the inoperable DG inoperable when its redundant required feature(s) is inoperable. AND B.3.1 Determine OPERABLE DG(s) is not inoperable due to common cause failure. OR B.3.2 Perform SR 3.8.1.2 for OPERABLE DG(s).	1 hour AND Once per 8 hours thereafter 4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s) [24] hours [24] hours

	AND	
	B.4[.1] Restore [required] DG to OPERABLE status.	72 hours
	[Reviewer's Note: Below applicable to TSTF 505	
	OR	
	B.4.2.1 Establish a RICT	72 hours
	AND	
	B.4.2.2 Restore [required] DG to OPERABLE status.	In accordance with the Risk Informed Completion Time Program, not to exceed 30 days]

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Two [required] offsite circuits inoperable.	C.1 Declare required feature(s) inoperable when its redundant required feature(s) is inoperable. AND	12 hours from discovery of Condition C concurrent with inoperability of redundant required feature(s)
	C.2[.1] Restore one [required] offsite circuit to OPERABLE status. [Reviewer's Note: Below applicable to TSTF 505 OR ----------NOTE---------- Required Actions C.2.2.1 and C.2.2.2 may not be voluntarily entered ---------- C.2.2.1 Establish a RICT AND C.2.2.2 Restore one [required] offsite circuit to OPERABLE status.	24 hours 24 hours In accordance with the Risk Informed Completion Time Program, not to exceed 30 days]
D. One [required] offsite circuit inoperable. AND One [required] DG inoperable.	----------NOTE---------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating," when Condition D is entered with no AC power source to any train. ---------- D.1 Restore [required] offsite circuit to OPERABLE status.	12 hours

	OR D.2 Restore [required] DG to OPERABLE status. [Reviewer's Note: Below applicable to TSTF 505 OR D.3.1 Establish a RICT AND D.3.2 Restore [required] offsite circuit or [required] DG to OPERABLE status.	12 hours 12 hours In accordance with the Risk Informed Completion Time Program, not to exceed 30 days]
E. Two [required] DGs inoperable.	E.1 Restore one [required] DG to OPERABLE status. [Reviewer's Note: Below applicable to TSTF 505 OR ----------NOTE---------- Required Actions E.2.1 and E.2.2 may not be voluntarily entered ---------- E.2.1 Establish a RICT AND E.2.2 Restore one [required] DG to OPERABLE status.	2 hours 2 hours In accordance with the Risk Informed Completion Time Program, not to exceed 30 days]

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
-----REVIEWER'S NOTE----- [This Condition may be deleted if the unit design is such that any sequencer failure mode will only affect the ability of the associated DG to power its respective safety loads following a loss of offsite power independent of, or coincident with, a Design Basis Event. ---------- F. One [required] [automatic load sequencer] inoperable.	F.1 Restore [required] [automatic load sequencer] to OPERABLE status. [Reviewer's Note: Below applicable to TSTF 505 OR F.2.1 Establish a RICT AND F.2.2 Restore [required] [automatic load sequencer] to OPERABLE status.	[12] hours] [12] hours In accordance with the Risk Informed Completion Time Program, not to exceed 30 days]
G. Required Action and Associated Completion Time of Condition A, B, C, D, E, or [F] not met.	G.1 Be in MODE 3. AND G.2 Be in MODE 5.	12 hours 36 hours
H. Three or more [required] AC sources inoperable.	H.1 Enter LCO 3.0.3. [Reviewer's Note: Below applicable to TSTF 505 OR ----------NOTE---------- Required Actions H.2.1 and H.2.2 may not be voluntarily entered ---------- H.2.1 Establish a RICT AND H.2.2 Restore [required] inoperable AC sources to OPERABLE status.	Immediately 1 hour In accordance with the Risk Informed Completion Time

		Program, not to exceed 30 days]

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.1.1	Verify correct breaker alignment and indicated power availability for each [required] offsite circuit.	7 days

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.2	----------NOTES---------- 1. All DG starts may be preceded by an engine prelube period and followed by a warmup period prior to loading. [2. A modified DG start involving idling and gradual acceleration to synchronous speed may be used for this SR as recommended by the manufacturer. When modified start procedures are not used, the time, voltage, and frequency tolerances of SR 3.8.1.7 must be met.] ---------- Verify each DG starts from standby conditions and achieves steady state voltage ≥ [3740] V and ≤ [4580] V, and frequency ≥ [58.8] Hz and ≤ [61.2] Hz.	31 days
SR 3.8.1.3	----------NOTES---------- 1. DG loadings may include gradual loading as recommended by the manufacturer. 2. Momentary transients outside the load range do not invalidate this test. 3. This Surveillance shall be conducted on only one DG at a time. 4. This SR shall be preceded by and immediately follow, without shutdown, a successful performance of SR 3.8.1.2 or SR 3.8.1.7. ---------- Verify each DG is synchronized and loaded and operates for ≥ 60 minutes at a load ≥ [4500] kW and ≤ [5000] kW.	31 days
SR 3.8.1.4	Verify each day tank [and engine mounted tank] contains ≥ [220] gal of fuel oil.	31 days

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.5	Check for and remove accumulated water from each day tank [and engine mounted tank].	[31] days
SR 3.8.1.6	Verify the fuel oil transfer system operates to [automatically] transfer fuel oil from storage tank[s] to the day tank [and engine mounted tank].	[92] days
SR 3.8.1.7	----------NOTE---------- All DG starts may be preceded by an engine prelube period. ---------- Verify each DG starts from standby condition and achieves: a. In ≤ [10] seconds, voltage ≥ [3740] V and frequency ≥ [58.8] Hz and b. Steady state voltage ≥ [3740] V and ≤ [4580] V, and frequency ≥ [58.8] Hz and ≤ [61.2] Hz.	184 days
SR 3.8.1.8	----------NOTE---------- [This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ---------- Verify [automatic [and] manual] transfer of AC power sources from the normal offsite circuit to each alternate [required] offsite circuit.	[18] months]

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.9	----------NOTES---------- [1. This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. 2. If performed with the DG synchronized with offsite power, it shall be performed at a power factor ≤ [0.9]. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition the power factor shall be maintained as close to the limit as practicable.] ---------- Verify each DG rejects a load greater than or equal to its associated single largest post-accident load, and: a. Following load rejection, the frequency is ≤ [63] Hz, b. Within [3] seconds following load rejection, the voltage is ≥ [3740] V and ≤ [4580] V, and c. Within [3] seconds following load rejection, the frequency is ≥ [58.8] Hz and ≤ [61.2] Hz.	[18] months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.10	----------NOTES---------- [1. This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. 2. If performed with the DG synchronized with offsite power, it shall be performed at a power factor ≤ [0.9]. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition the power factor shall be maintained as close to the limit as practicable.] ---------- Verify each DG does not trip, and voltage is maintained ≤ [5000] V during and following a load rejection of ≥ [4500] kW and ≤ [5000] kW.	[18] months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.11	----------NOTES---------- 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ---------- Verify on an actual or simulated loss of offsite power signal: a. De-energization of emergency buses, b. Load shedding from emergency buses, and c. DG auto-starts from standby condition and: 1. Energizes permanently connected loads in ≤ [10] seconds, 2. Energizes auto-connected shutdown load through [automatic load sequencer], 3. Maintains steady-state voltage ≥ [3740] V and ≤ [4580] V, 4. Maintains steady-state frequency ≥ [58.8] Hz and ≤ [61.2] Hz, and 5. Supplies permanently connected and auto-connected shutdown loads for ≥ 5 minutes.	[18] months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.12	----------NOTES---------- 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not normally be performed in MODE 1 or 2. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ---------- Verify on an actual or simulated [Engineered Safety Feature (ESF)] actuation signal each DG auto-starts from standby condition and: a. In ≤ [12] seconds after auto-start and during tests, achieves voltage ≥ [3740] V and frequency ≥ [58.8] Hz, b. Achieves steady state voltage ≥ [3740] V and≤ [4580] V and frequency ≥ [58.8] Hz and ≤ [61.2] Hz, c. Operates for ≥ 5 minutes, d. Permanently connected loads remain energized from the offsite power system, and e. Emergency loads are energized [or auto-connected through the automatic load sequencer] from the offsite power system.	[18] months]

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.13	----------NOTE---------- [This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.] ---------- Verify each DG's noncritical automatic trips are bypassed on [actual or simulated loss of voltage signal on the emergency bus concurrent with an actual or simulated ESF actuation signal].	[18] months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.14	----------NOTES---------- 1. Momentary transients outside the load and power factor ranges do not invalidate this test. 2. This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. 3. If performed with DC synchronized with offsite power, it shall be performed at a power factor ≤ [0.9]. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition the power factor shall be maintained as close to the limit as practicable. ---------- Verify each DG operates for ≥ 24 hours: a. For ≥ [2] hours loaded ≥ [5250] kW and ≤ [6000] kW and b. For the remaining hours of the test loaded ≥ [4500] kW and ≤ [5000] kW.	[18] months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.15	----------NOTES---------- 1. This Surveillance shall be performed within 5 minutes of shutting down the DG after the DG has operated ≥ [2] hours loaded ≥ [4500] kW and ≤ [5000] kW. Momentary transients outside of load range do not invalidate this test. 2. All DG starts may be preceded by an engine prelube period. ---------- Verify each DG starts and achieves: a. In ≤ [10] seconds, voltage ≥ [3740] V and frequency ≥ [58.8] Hz and b. Steady state voltage ≥ [3740] V and ≤ [4580] V, and frequency ≥ [58.8] Hz and ≤ [61.2] Hz.	[18] months
SR 3.8.1.16	----------NOTE---------- This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ---------- Verify each DG: a. Synchronizes with offsite power source while loaded with emergency loads upon a simulated restoration of offsite power, b. Transfers loads to offsite power source, and c. Returns to ready-to-load operation.	[18] months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.17	----------NOTE---------- [This Surveillance shall not normally be performed in MODE 1, 2, or 3. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ---------- Verify, with a DG operating in test mode and connected to its bus, an actual or simulated ESF actuation signal overrides the test mode by: a. Returning DG to ready-to-load operation and [b. Automatically energizing the emergency load from offsite power.]	[18] months]
SR 3.8.1.18	----------NOTE---------- [This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.] ---------- Verify interval between each sequenced load block is within ± [10% of design interval] for each emergency [and shutdown] load sequencer.	[18] months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.19	----------NOTES---------- 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ---------- Verify on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ESF actuation signal: a. De-energization of emergency buses, b. Load shedding from emergency buses, c. DG auto-starts from standby condition and: 1. Energizes permanently connected loads in ≤ [10] seconds, 2. Energizes auto-connected emergency loads through [load sequencer], 3. Achieves steady-state voltage ≥ [3740] V and ≤ [4580] V, 4. Achieves steady-state frequency ≥ [58.8] Hz and ≤ [61.2] Hz, and 5. Supplies permanently connected and auto-connected emergency loads for ≥ [5] minutes.	[18] months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.20	----------NOTE---------- All DG starts may be preceded by an engine prelube period. ----------	
	Verify, when started simultaneously from standby condition, each DG achieves, in ≤ [10] seconds, voltage ≥ [3740] V and ≤ [4580] V, and frequency ≥ [58.8] Hz and ≤ [61.2] Hz.	10 years