South Texas Project Electric Generating Station P.O. Box 289 Wadsworth, Texas 77483

June 26, 2023
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10 CFR 50.4
10 CFR 50.71(e)(4)
10 CFR 50.59(d)(2)
10 CFR 72.48
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South Texas Project
Units 1, 2 & Independent Spent Fuel Storage Installation
Docket Nos. STN 50-498, STN 50-499, 72-1041
Biennial Submittal of Technical Specification Bases Changes, Commitment Changes,
10 CFR 50.59 Evaluation Summary, and 10 CFR 72.48 Evaluation Summary

Pursuant to Technical Specification 6.8.3.m, 10 CFR 50.71(e)(4), 10 CFR 50.59(d)(2), and 10 CFR 72.48(d)(2), STP Nuclear Operating Company (STPNOC) submits the periodic report of changes made to the South Texas Project (STP) Technical Specification Bases and NRC Commitments as well as the 10 CFR 50.59 and 10 CFR 72.48 Evaluation Summaries.

Enclosure 1 contains the periodic report of changes made to the South Texas Project Technical Specification Bases without prior NRC approval and Enclosure 2 contains the revised Technical Specification Bases pages. This report covers the period from June 16, 2021, to June 21, 2023.

Enclosure 3 contains the STP Commitment Change Summary for the period June 21, 2021, through June 21, 2023. This report lists only changes to commitments made during the reporting period that require notification to the NRC in the periodic report. The commitments were evaluated in accordance with the requirements of STP's Regulatory Commitment Change Process, which is consistent with the guidance in the Nuclear Energy Institute's NEI 99-04, "Guidelines for Managing NRC Commitment Changes." Additional documentation is available at STP for your review.

Enclosure 4 contains a brief description and summary of the 10 CFR 50.59 evaluations of changes, tests and experiments performed at the South Texas Project from September 22, 2021, through June 21, 2023.

There were no 10 CFR 72.48 evaluations performed at STP from September 29, 2021, through June 21, 2023, associated with the Independent Spent Fuel Storage Installation (ISFSI).

There are no commitments in this letter.

If there are any questions regarding this summary report, please contact Tim Hammons at (361) 972-7347 or me at (361) 972-7666.

Andrew M. Richards Jr.
Manager, Regulatory Affairs

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Enclosures:

1. Technical Specification Bases Change Summary
2. Revised Technical Specification Bases Pages
3. Commitment Change Summary
4. 10 CFR 50.59 Evaluation Summary

cc:

Regional Administrator, Region IV
U.S. Nuclear Regulatory Commission
1600 E. Lamar Boulevard
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Enclosure 1
Technical Specification Bases Change Summary

Page	Amendment	Description of Change
B 3/4 4-4a, 4-4b, 4-4c, 4-4d, 4-4e	22-5211-15	Revise Reactor Coolant Leakage Requirements
B 3/4 8-6, 8-7, 8-8a, 8-10, 8-12, 8-13	20-8569-2	Remove references to RG 1.108 for DG test frequencies that are out-of-date and non-current
B 3/4 8-8, 8-14	21-6679-2	Update bases for consistency with License Amendment Nos 222/207 for the Diesel Fuel Oil Testing Program

Enclosure 2
Revised Technical Specification Bases Pages

3/4.4.6.2 OPERATIONAL LEAKAGE (Continued)

Applicable Safety Analyses

Except for primary-to-secondary leakage, the safety analyses do not address operational leakage. However, other operational leakage is related to the safety analyses for a LOCA; the amount of leakage can affect the probability of such an event. The safety analysis for an event resulting in steam discharge to the atmosphere assumes that primary-to-secondary leakage from all steam generators is 1 gpm as a result of accident induced conditions. The LCO requirement to limit primary-to-secondary leakage through any one steam generator to less than or equal to 150 gpd is significantly less than the conditions assumed in the safety analysis.

Primary-to-secondary leakage is a factor in the dose releases outside containment resulting from a steam line break (SLB) accident. To a lesser extent, other accidents or transients involve secondary steam release to the atmosphere, such as a steam generator tube rupture (SGTR). The leakage contaminates the secondary fluid.

The UFSAR analysis for SGTR assumes the contaminated secondary fluid is only briefly released via the main steam safety valves and the majority is steamed to the condenser. The 1 gpm primary-to-secondary leakage safety analysis assumption is relatively inconsequential.

The SLB is more limiting for primary-to-secondary leakage. The safety analysis for the SLB assumes 500 gpd and 936 gpd primary-to-secondary leakage in the faulted and intact steam generators respectively as an initial condition. The dose consequences resulting from the SLB accident are bounded by a small fraction (i.e., 10%) of the limits defined in 10 CFR 100. The RCS specific activity assumed was 1.0 µCi/gm DOSE EQUIVALENT 1-131 at a conservatively high letdown flow of 250 gpm, with either a pre-existing or an accident initiated iodine spike. These values bound the Technical Specifications values.

The RCS operational leakage satisfies Criterion 2 of 10 CFR 50.36(c)(2)(ii).

Limiting Condition for Operation (LCO)

Reactor Coolant System operational leakage shall be limited to:

a. PRESSURE BOUNDARY LEAKAGE

PRESSURE BOUNDARY LEAKAGE is prohibited as the leak itself could cause further RCPB deterioration, resulting in higher leakage.

3/4.4.6.2 OPERATIONAL LEAKAGE (Continued)

b. UNIDENTIFIED LEAKAGE

One gallon per minute (gpm) of UNIDENTIFIED LEAKAGE is allowed as a reasonable minimum detectable amount that the containment air monitoring and containment sump level monitoring equipment can detect within a reasonable time period. Separating the sources of leakage (i.e., leakage from an identified source versus leakage from an unidentified source) is necessary for prompt identification of potentially adverse conditions, assessment of the safety significance, and corrective action.

Leakage from systems connected to the Reactor Coolant System will initially manifest itself as UNIDENTIFIED LEAKAGE until the source of the leak is identified. If the leakage exceeds the 1 gpm limit for UNIDENTIFIED LEAKAGE, then Action b is entered. When the source of the leakage is identified and UNIDENTIFIED LEAKAGE and IDENTIFIED LEAKAGE are verified within limits, Action b can be exited.

c. Primary-to-Secondary Leakage Through Any One Steam Generator

The limit of 150 gpd per each steam generator is based on the operational leakage performance criterion in NEI 97-06, Steam Generator Program Guidelines (Ref. 1). The Steam Generator Program operational leakage performance criterion in NEI 97-06 states, “The RCS operational primary-to-secondary leakage through any one steam generator shall be limited to 150 gallons per day." The limit is based on operating experience with steam generator tube degradation mechanisms that result in tube leakage. The operational leakage rate criterion in conjunction with the implementation of the Steam Generator Program is an effective measure for minimizing the frequency of steam generator tube ruptures.

d. IDENTIFIED LEAKAGE

Up to 10 gpm of IDENTIFIED LEAKAGE is considered allowable because leakage is from known sources that do not interfere with detection of UNIDENTIFIED LEAKAGE and is well within the capability of the Reactor Coolant System Makeup System. IDENTIFIED LEAKAGE includes leakage to the containment from specifically known and located sources, but does not include controlled reactor coolant pump seal leakoff (a normal function not considered leakage).

e. Reactor Coolant System Pressure Isolation Valve Leakage

The specified allowed leakage from any RCS pressure isolation valve is sufficiently low to ensure early detection of possible in-series check valve failure. It is apparent that when pressure isolation is provided by two in-series check valves and when failure of one valve in the pair can go undetected for a substantial length of time, verification of valve integrity is required. Since these valves are important in preventing overpressurization and rupture of the ECCS low pressure piping which could result in a LOCA that bypasses containment, these valves should be tested periodically to ensure low probability of gross failure.

3/4.4.6.2 OPERATIONAL LEAKAGE (Continued)

Applicability

In MODES 1, 2, 3, and 4, the potential for Reactor Coolant Pressure Boundary leakage is greatest when the Reactor Coolant System is pressurized.

In MODES 5 and 6, leakage limits are not required because the reactor coolant pressure is far lower, resulting in lower stresses and reduced potentials for leakage.

ACTIONS

a. If any PRESSURE BOUNDARY LEAKAGE exists, the affected component, pipe, or vessel must be isolated from the RCS by a closed manual valve, closed and de-activated automatic valve, blind flange, or check valve within 4 hours, or the reactor must be brought to MODE 3 within 6 hours and MODE 5 within the next 30 hours. While in this condition, structural integrity of the system should be considered because the structural integrity of the part of the system within the isolation boundary must be maintained under all licensing basis conditions, including consideration of the potential for further degradation of the isolated location. Normal leakage past the isolation device is acceptable as it will limit RCS LEAKAGE and is included in IDENTIFIED LEAKAGE or UNIDENTIFIED LEAKAGE. This action is necessary to prevent further deterioration of the RCPB.

The allowed completion times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. In MODE 5, the pressure stresses acting on the Reactor Coolant Pressure Boundary are much lower, and further deterioration is much less likely.

b. UNIDENTIFIED LEAKAGE or IDENTIFIED LEAKAGE in excess of the LCO limits must be reduced to within limits within 4 hours. This allows time to verify leakage rates and either identify UNIDENTIFIED LEAKAGE or reduce leakage to within limits before the reactor must be shut down. This ACTION is necessary to prevent further deterioration of the Reactor Coolant Pressure Boundary.

c. If any primary-to-secondary leakage is not within limit, the reactor must be brought to MODE 3 within 6 hours and MODE 5 within the next 30 hours. This ACTION reduces the leakage and also reduces the factors that tend to degrade the pressure boundary.

Surveillance Requirements

4.4.6.2.1 Verifying Reactor Coolant System leakage to be within the LCO limits ensures the integrity of the Reactor Coolant Pressure Boundary is maintained. PRESSURE BOUNDARY LEAKAGE would at first appear as UNIDENTIFIED LEAKAGE and can only be positively identified by inspection. UNIDENTIFIED LEAKAGE and IDENTIFIED LEAKAGE are determined by performance of a Reactor Coolant System water inventory balance.

3/4.4.6.2 OPERATIONAL LEAKAGE (Continued)

The RCS water inventory balance must be met with the reactor at steady state operating conditions and near operating pressure. The Surveillance is modified by two Notes. Note 1 states that this Surveillance Requirement is not required to be performed in until 12 hours after establishment of steady state operation.

Steady state operation is required to perform a proper water inventory balance; calculations during maneuvering are not useful and a Note requires the Surveillance to be met when steady state is established. For RCS operational leakage determination by water inventory balance, steady state is defined as stable RCS pressure, temperature, power level, pressurizer and makeup tank levels, makeup and letdown, and Reactor Coolant Pump seal injection and return flows.

An early warning of PRESSURE BOUNDARY LEAKAGE or UNIDENTIFIED LEAKAGE is provided by the automatic systems that monitor containment atmosphere radioactivity, containment normal sump inventory and discharge, and reactor head flange leakoff. These leakage detection systems are specified in LCO 3.4.6.1, “Reactor Coolant System Leakage Detection Systems.”

3/4.4.6.2 OPERATIONAL LEAKAGE (Continued)

The Note in 4.4.6.2.1 states that this Surveillance Requirement is not applicable to primary-to-secondary leakage. This is because leakage of 150 gpd cannot be measured accurately by a RCS water inventory balance.

The frequency specified in the Surveillance Frequency Control Program is a reasonable interval to trend leakage and recognizes the importance of early leakage detection in the prevention of accidents.

4.4.6.2.2 The Surveillance Requirements for Reactor Coolant System Pressure Isolation Valves provide added assurance of valve integrity thereby reducing the probability of gross valve failure and consequent intersystem LOCA. Leakage from the RCS pressure isolation valve is IDENTIFIED LEAKAGE and will be considered as a portion of the allowed limit.

4.4.6.2.3 This Surveillance Requirement verifies that primary-to-secondary leakage is less than or equal to 150 gpd through any one steam generator. Satisfying the primary-to-secondary leakage limit ensures that the operational leakage performance criterion in the Steam Generator Program is met. If this Surveillance Requirement is not met, compliance with LCO 3.4.5 should be evaluated. The 150-gpd limit is measured at room temperature as described in Reference 1. The operational leakage rate limit applies to leakage through any one steam generator. If it is not practical to assign the leakage to an individual steam generator, all the primary-to-secondary leakage should be conservatively assumed to be from one steam generator.

The Surveillance Requirement is modified by a Note, which states that the Surveillance is not required to be performed until 12 hours after establishment of steady state operation. For Reactor Coolant System primary-to-secondary leakage determination, steady state is defined as stable Reactor Coolant System pressure, temperature, power level, pressurizer and makeup tank levels, makeup and letdown, and reactor coolant pump seal injection and return flows.

The frequency specified in the Surveillance Frequency Control Program is a reasonable interval to trend primary-to-secondary leakage and recognizes the importance of early leakage detection in the prevention of accidents. During normal operation the primary-to-secondary leakage is determined using continuous process radiation monitors or radiochemical grab sampling. In MODES 3 and 4, the primary system radioactivity level may be very low, making it difficult to measure primary-to-secondary leakage. Leakage verification is provided by chemistry procedures that provide alternate means of calculating and confirming primary-to-secondary leakage is less than or equal to 150 gpd through any one SG (Ref. 2).

References

1. NEI 97-06, "Steam Generator Program Guidelines"

2. EPRI TR-104788, "Pressurized Water Reactor Primary-to-Secondary Leak Guidelines”

3/4.4.7 NOT USED

A.C. SOURCES, D.C. SOURCES, and ONSITE POWER DISTRIBUTION (Continued)

Surveillance Requirements

The AC sources are designed to permit inspection and testing of all important areas and features, especially those that have a standby function, in accordance with 10 CFR 50, Appendix A, GDC 18. Periodic component tests are supplemented by extensive functional tests during refueling outages (under simulated accident conditions). The Technical Specification Surveillance Requirements (SRs) for demonstrating the OPERABILITY of the standby diesel generators are in accordance with the Surveillance Frequency Control Program (SFCP), Regulatory Guide 1.137, as addressed in the FSAR and NUREG-1431.

SR 4.8.1.1.1.a

This SR ensures proper circuit continuity for the offsite AC electrical power supply to the onsite distribution network and availability of offsite AC electrical power. The breaker alignment verifies that each breaker is in its correct position to ensure that distribution busses and loads are connected to their preferred power source, and that appropriate independence of offsite circuits is maintained. The frequency specified in the Surveillance Frequency Control Program is adequate since breaker position is not likely to change without the operator being aware of it and because its status is displayed in the control room.

SR 4.8.1.1.1.b

Transfer of each 4.16 kV ESF bus power supply from the normal offsite circuit to the alternate offsite circuit demonstrates the OPERABILITY of the alternate circuit distribution network to power the shutdown loads. The 18 month Frequency of the Surveillance is based on engineering judgment, taking into consideration the unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths. Operating experience has shown that the components usually pass the SR when performed at a frequency found in the Surveillance Frequency Control Program. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

SR 4.8.1.1.2.a.1

This SR provides verification that the level of fuel oil in the fuel tank is at or above the required level.

SR 4.8.1.1.2.a.2 and SR 4.8.1.1.2.a.5

These SR helps to ensure the availability of the standby electrical power supply to mitigate DBAs and transients and to maintain the unit in a safe shutdown condition.

To minimize the wear on moving parts that do not get lubricated when the engine is not running, these SRs are modified by a Note (Note 2) to indicate that all DG starts for these Surveillances may be preceded by an engine prelube period and followed by a warmup period prior to loading.

For purposes of this testing, the DGs are started from standby conditions. Standby condition for a DG mean that the diesel engine coolant and oil are being continuously circulated and temperature is being maintained consistent with manufacturer recommendations.

A.C. SOURCES, D. C. SOURCES, AND ONSITE POWER DISTRIBUTION (Continued)

In order to reduce stress and wear on diesel engines, some manufacturers recommend a modified start in which the starting speed of DGs is limited, warmup is limited to this lower speed, and the DGs are gradually accelerated to synchronous speed prior to loading. In addition, the modified start may involve reduced fuel (load limit). These start procedures are the intent of Note 3, which is only applicable when such modified start procedures are recommended by the manufacturer.

At a frequency found in the Surveillance Frequency Control Program, SRs 4.8.1.1.2.a.2 and 4.8.1.1.2.a.5 require that the DG starts from standby conditions and achieves required voltage and frequency within 10 seconds. The 10 second start requirement supports the assumptions of the design basis LOCA analysis in the FSAR.

The 10 second start requirement is not applicable to SR 4.8.1.1.2.a.2 (see Note 3) when a modified start procedure as described above is used.

The criteria that in ≤ 10 seconds the DG achieves 4160 ±416 volts and 60 ± 1.2 Hz when the DG is started from a standby condition are starting and accelerating design criteria for the DG and are specified to confirm the capability of the DG to recover from a loading transient.

SR 4.8.1.1.2.a.5 also demonstrates that the DG can achieve steady-state voltage and frequency within the specified band around the nominal values of 4160 volts and 60 Hz. The band placed around these nominal values is based on the capability of the voltage regulator and governor. WCAP-17308-NP-A contains the methodology for evaluating the impact of variations in voltage and frequency, due to the voltage regulator and governor, on the following:

- Pump flow and developed head to meet design basis requirements,
- DG loading calculations,
- DG fuel consumption calculations, and
- Motor Operated Valve (MOV) performance.

The frequency specified in the Surveillance Frequency Control Program for SR 4.8.1.1.2.a is consistent with Generic Letter 94-01. The frequency specified in the Surveillance Frequency Control Program for SR 4.8.1.1.2.a.5 is a reduction in cold testing consistent with Generic Letter 84-15. These Frequencies provide adequate assurance of DG OPERABILITY, while minimizing degradation resulting from testing.

SR 4.8.1.1.2.a.3

This Surveillance verifies that the DGs are capable of synchronizing with the offsite electrical system and accepting loads greater than or equal to the equivalent of the maximum expected accident loads. A minimum run time of 60 minutes is required to stabilize engine temperature, while minimizing the time that the DG is connected to the offsite source.

The load band is provided to avoid routine overloading of the DG. Routine overloading may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY.

A.C. SOURCES, D. C. SOURCES, AND ONSITE POWER DISTRIBUTION (Continued)

This SR is modified by two Notes. Note 4 indicates that diesel engine runs for this Surveillance may include gradual loading, as recommended by the manufacturer, so that mechanical stress and wear on the diesel engine are minimized. Note 6 states that momentary transients, because of changing bus loads, do not invalidate this test.

A successful DG start under SR 4.8.1.1.2.a.2 must precede this test to credit satisfactory performance.

SR 4.8.1.1.2.b

Microbiological fouling is a major cause of fuel oil degradation. There are numerous bacteria that can grow in fuel oil and cause fouling, but all must have a water environment in order to survive. Removal of water from the fuel oil tanks at a frequency found in the Surveillance Frequency Control Program eliminates the necessary environment for bacterial survival. This is the most effective means of controlling microbiological fouling. In addition, it eliminates the potential for water entrainment in the fuel oil during DG operation. Water may come from any of several sources, including condensation, ground water, rain water, contaminated fuel oil, and breakdown of the fuel oil by bacteria. Frequent checking for and removal of accumulated water minimizes fouling and provides data regarding the watertight integrity of the fuel oil system. The Surveillance Frequencies are established by Regulatory Guide 1.137. This SR is for preventative maintenance. The presence of water does not necessarily represent failure of the SR, provided the accumulated water is removed during the performance of this Surveillance.

SR 4.8.1.1.2.c

The tests listed below are a means of determining whether new fuel oil is of the appropriate grade and has not been contaminated with substances that would have an immediate, detrimental impact on diesel engine combustion. If results from these tests are within acceptable limits, the fuel oil may be added to the storage tanks without concern for contaminating the entire volume of fuel oil in the storage tanks. These tests are to be conducted prior to adding the new fuel to the storage tank(s), but in no case is the time between receipt of new fuel and conducting the tests to exceed 31 days. The tests, limits, and applicable ASTM Standards are as follows:

a. Sample the new fuel oil in accordance with ASTM D4057-19,

b. Verify the sample has a specific gravity at 60/60°F of ≥ 0.815 and ≤ 0.89 or an API gravity at 60°F of ≥ 27° and ≤ 42° when tested in accordance with ASTM D287-12b or D1298-12b, a kinematic viscosity at 40°C of ≥ 1.9 centistokes and ≤ 4.1 centistokes, and a flash point of ≥ 125°F in accordance with the tests specified in ASTM D975-10, and

c. Verify that the new fuel oil has a clear and bright appearance with proper color when tested in accordance with ASTM D4176-04 or a water and sediment content within limits when tested in accordance with ASTM D2709-16.

A.C. SOURCES, D. C. SOURCES, AND ONSITE POWER DISTRIBUTION (Continued)

Failure to meet any of the above limits is cause for rejecting the new fuel oil but does not represent a failure to meet the LCO concern since the fuel oil is not added to the storage tanks. Within 31 days following the initial new fuel oil sample, the fuel oil is analyzed to establish that the other properties specified in Table 1 of ASTM D975-10 are met for new fuel oil when tested in accordance with ASTM D975-10, except that the analysis for sulfur may be performed in accordance with ASTM D1552-16, ASTM D2622-16, or ASTM D4294-16. The 31-day period is acceptable because the fuel oil properties of interest, even if they were not within stated limits, would not have an immediate effect on DG operation. This Surveillance ensures the availability of high-quality fuel oil for the DGs.

Fuel oil degradation during long term storage shows up as an increase in particulate, due mostly to oxidation. The presence of particulate does not mean the fuel oil will not burn properly in a diesel engine. The particulate can cause fouling of filters and fuel oil injection equipment, however, which can cause engine failure.

Particulate concentrations should be determined in accordance with ASTM D6217-18. This method involves a gravimetric determination of total particulate concentration in the fuel oil and has a limit of 10 mg/l. It is acceptable to obtain a field sample for subsequent laboratory testing in lieu of field testing. If B5 biodiesel fuel oil is used, particulate concentrations should be determined in accordance with ASTM D7321-18a, biodiesel may degrade the filter paper used in ASTM D6217-18.

The frequency of this test takes into consideration fuel oil degradation trends that indicate that particulate concentration is unlikely to change significantly between frequency intervals.

SR 4.8.1.1.2.e.1 NOT USED

SR 4.8.1.1.2.e.2

Each DG is provided with an engine overspeed trip to prevent damage to the engine. Recovery from the transient caused by the loss of a large load could cause diesel engine overspeed, which, if excessive, might result in a trip of the engine. This Surveillance demonstrates the DG load response characteristics and capability to reject the largest single load (785.3 kW) without exceeding predetermined voltage and frequency.

This SR is modified by two Notes. Note 4 indicates that diesel engine runs for this Surveillance may include gradual loading, as recommended by the manufacturer, so that mechanical stress and wear on the diesel engine are minimized. Note 5 allows the diesel start for this surveillance to be a modified start as stated in SR 4.8.1.1.2.a.2.

A.C. SOURCES, D.C. SOURCES, and ONSITE POWER DISTRIBUTION (Continued)

operated at full flow, or residual heat removal (RHR) systems performing a decay heat removal function are not desired to be realigned to the ECCS mode of operation. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the DG systems to perform these functions is acceptable. This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified.

The frequency specified in the Surveillance Frequency Control Program takes into consideration unit conditions required to perform the Surveillance and is intended to be consistent with expected fuel cycle lengths.

SR 4.8.1.1.2.e.4 also demonstrates that the DG can achieve steady-state voltage and frequency within the specified band around the nominal values of 4160 volts and 60 Hz. The band placed around these nominal values is based on the capability of the voltage regulator and governor. WCAP-17308-NP-A contains the methodology for evaluating the impact of variations in voltage and frequency, due to the voltage regulator and governor, on the following:

- Pump flow and developed head to meet design basis requirements,
- DG loading calculations,
- DG fuel consumption calculations, and
- Motor Operated Valve (MOV) performance.

SR 4.8.1.1.2.e.5

This Surveillance demonstrates that the DG automatically starts and achieves the required voltage and frequency within the specified time (10 seconds) from the design basis actuation signal (LOCA signal) and operates ≥ 5 minutes. The 5 minute period provides sufficient time to demonstrate stability.

The frequency specified in the Surveillance Frequency Control Program takes into consideration unit conditions required to perform the Surveillance and is intended to be consistent with the expected fuel cycle lengths.

The criteria that in ≤ 10 seconds the DG achieves 4160 ±416 volts and 60 ± 1.2 Hz when the DG is started from a standby condition are starting and accelerating design criteria for the DG and are specified to confirm the capability of the DG to recover from a loading transient.

SR 4.8.1.1.2.e.5 also demonstrates that the DG can achieve steady-state voltage and frequency within the specified band around the nominal values of 4160 volts and 60 Hz. The band placed around these nominal values is based on the capability of the voltage regulator and governor. WCAP-17308-NP-A contains the methodology for evaluating the impact of variations in voltage and frequency, due to the voltage regulator and governor, on the following:

- Pump flow and developed head to meet design basis requirements,
- DG loading calculations,
- DG fuel consumption calculations, and
- Motor Operated Valve (MOV) performance.

A.C. SOURCES, D.C. SOURCES, and ONSITE POWER DISTRIBUTION (Continued)

SR 4.8.1.1.2.e.8

This SR is used to verify that the loads for the diesel do not exceed the 2000 hour rating approved by Cooper.

SR 4.8.1.1.2.e.9

As required by Regulatory Guide 1.108, paragraph 2.a.(6), this Surveillance ensures that the manual synchronization and automatic load transfer from the DG to the offsite source can be made and the DG can be returned to ready to load status when offsite power is restored. It also ensures that the autostart logic is reset to allow the DG to reload if a subsequent loss of offsite power occurs. The DG is considered to be in ready to load status when the DG is at rated speed and voltage, the output breaker is open and can receive an autoclose signal on bus undervoltage, and the load sequence times are reset.

The frequency specified in the Surveillance Frequency Control Program takes into consideration unit conditions required to perform the Surveillance.

SR 4.8.1.1.2.e.10

Demonstration of the test mode override ensures that the DG availability under accident conditions will not be compromised as a result of testing and the DG will automatically reset to ready to load operation if a LOCA actuation signal is received during operation in the test mode. Read to load operation is defined as the DG running at rated speed and voltage with the DG output breaker open. These provisions for automatic switchover are required by IEEE-308, paragraph 6.2.6(2).

The intent in the requirement is to show that the emergency loading was not affected by the DG operation in test mode. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the emergency loads to perform these functions is acceptable. This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified.

The frequency specified in the Surveillance Frequency Control Program is consistent with the recommendation of Regulatory Guide 1.108, paragraph 2.a.(8), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

A.C. SOURCES, D.C. SOURCES, and ONSITE POWER DISTRIBUTION (Continued)

SR 4.8.1.1.2.e.11

As required by Regulatory Guide 1.108, paragraph 2.a.(2), each DG is required to demonstrate proper operation for the DBA loading sequence to ensure that voltage and frequency are maintained within the required limits. Under accident conditions, prior to connecting the DGs to their respective busses, all loads are shed except load center feeders and those motor control centers that power Class 1E loads (referred to as "permanently connected" loads). Upon reaching 90% of rated voltage and frequency, the DGs are then connected to their respective busses.

Loads are then sequentially connected to the bus by the automatic load sequencer. This sequencing logic controls the permissive and starting signals to motor breakers to prevent overloading of the DGs due to high motor starting currents. The 10% load sequence time interval tolerance ensures that sufficient time exists for the DG to restore frequency and voltage prior to applying the next load and that safety analysis assumptions regarding ESF equipment time delays are not violated.

The sequencer is considered a support system for the associated diesel generator and those components actuated by a Mode 1 signal (CR 00-10707).

The frequency specified in the Surveillance Frequency Control Program takes into consideration unit conditions required to perform the Surveillance and is intended to be consistent with expected fuel cycle lengths.

SR 4.8.1.1.2.e.12

This SR verifies that the diesel will not start when the emergency stop lockout feature is tripped. This prevents any further damage to the diesel engine or generator.

SR 4.8.1.1.2.e.13

This SR verifies the requirements of Branch Technical Position PSB-1 that the load shedding scheme automatically prevents load shedding during the sequencing of the emergency loads to the bus. It also verifies the reinstatement of the load shedding feature upon completion of the load sequencing action.

SR 4.8.1.1.2.f

This Surveillance demonstrates that the DG starting independence has not been compromised. Also, this Surveillance demonstrates that each engine can achieve proper speed within the specified time when the DGs are started simultaneously.

The criteria that in ≤ 10 seconds the DG achieves 4160 ± 416 volts and 60 ± 1.2 Hz when the DG is started from a standby condition are starting and accelerating design criteria for the DG and are specified to confirm the capability of the DG to recover from a loading transient.

A.C. SOURCES, D.C. SOURCES, and ONSITE POWER DISTRIBUTION (Continued)

SR 4.8.1.1.2.e.5 also demonstrates that the DG can achieve steady-state voltage and frequency within the specified band around the nominal values of 4160 volts and 60 Hz. The band placed around these nominal values is based on the capability of the voltage regulator and governor. WCAP-17308-NP-A contains the methodology for evaluating the impact of variations in voltage and frequency, due to the voltage regulator and governor, on the following:

- Pump flow and developed head to meet design basis requirements,
- DG loading calculations,
- DG fuel consumption calculations, and
- Motor Operated Valve (MOV) performance.

The frequency specified in the Surveillance Frequency Control Program is consistent with the recommendations of Regulatory Guide 1.108, paragraph 2.b, and Regulatory Guide 1.137, paragraph C.2.f.

SR 4.8.1.1.2.g

This SR provided assurance that any accumulation of sediment over time or the normal wear on the system has not degraded the diesels.

The Surveillance Requirements for demonstrating the OPERABILITY of the diesel generators are in accordance with the recommendations of Regulatory Guides 1.9, "Selection of Diesel Generator Set Capacity for Standby Power Supplies," Revision 2, December 1979; 1.108, "Periodic Testing of Diesel Generator Units Used as Onsite Electric Power Systems at Nuclear Power Plants," Revision 1, August 1977. The standby diesel generators auxiliary systems are designed to circulate warm oil and water through the diesel while the diesel is not running, to preclude cold ambient starts. For the purposes of surveillance testing, ambient conditions are considered to be the hot prelube condition.

3.8.1.3

The OPERABILITY of the minimum AC sources during MODE 6 with ≥23’ of water in the cavity is based on the following conditions:

a. The unit can be maintained in the shutdown or refueling condition for extended periods;

b. Sufficient instrumentation and control capability is available for monitoring and maintaining the unit status; and

Enclosure 3
Commitment Change Summary

Condition Report Number	Source Document	Source Date	Date of Change	Original Commitment Description	Revised Commitment Description	Justification for change
21-9679-3 21-9679-4	NOC-AE-13002989 - South Texas Project Phase 1 Extended Loss of All AC Power (ELAP) ERO Staffing Analysis Report NOC-AE-14003189 - South Texas Project Units 1 & 2, November 2014 Phase 2 Staffing Assessment	4/25/13 11/25/14	3/31/22	Commitment 1. Ensure that the required number of qualified individuals are added to fill all necessary roles of the expanded ERO (Table 5-2 positions) • TSC Technical Manager • Engineering Supervisor • Engineer - Nuclear • Engineer - Mechanical • Engineer - Electrical • Electrical - I&C • TSC Operations Communicator	Ensure that the required number of qualified individuals are added to fill all necessary roles of the expanded ERO (Table 5-2 positions) • ~~TSC Technical Manager~~ • ~~Engineering Supervisor~~ • Engineer - Nuclear • Engineer - Mechanical • Engineer - Electrical • Electrical - I&C • TSC Operations Coordinator • ~~TSC Operations Communicator~~	Effective April 6, 2022, STP's new E-Plan will be in effect. Per the new E-Plan, certain ERO staff positions are no longer required as part of the expanded ERO. The roles and responsibilities previously assigned to the TSC Technical Manager and Engineering Supervisor have been subsumed by the TSC Engineering Coordinator. The roles and responsibilities previously assigned to the TSC Operations Communicator have been subsumed by the TSC Operations Coordinator. Although the TSC Technical Manager, Engineering Supervisor, and TSC Operations Communicator specific positions are no longer required as part of the expanded ERO, STP will still be able to maintain the required response capability for responding to a multi-unit event, per the guidance in NEI 12-01, Rev 0 (Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities).

22-2939-2	NOC-AE-10002558	5/10/10	5/16/22	3. The condition for departure from the exemption is based on the Emergency Operations Facility Director's determination that adequate staffing is available to meet the requirements of 10 CFR 26.205(c) and (d).	3. The condition for departure from the exemption is based on the Plant General Manager's determination that adequate staffing is available to meet the requirements of 10 CFR 26.205(c) and (d).	Previous revisions of 0PGP02-ZV-0002, Hurricane Plan, assumed entry into the Emergency Plan was probable, and therefore the Augmented Emergency Response Organization was assigned the responsibility for leading the site preparation and response actions for a Hurricane threat. The EOF Director was the lead management position for the response. STP is implementing a process change and modifying the Hurricane Plan to have the Management Duty Team responsible for implementation of site response for a tropical threat, with the Plant General Manager being the lead management position of the response. This change does not alter the intent or technical basis of the original exemption request. EOF Directors typically are at Department or General Manager level positions in the STP Organization, and in some cases have been a Plant General Manager. The management position leading the site response for a tropical threat will still be the individual responsible for implementing and terminating the exemption following the pre-defined conditions specified.

Enclosure 4
10 CFR 50.59 Evaluation Summary

Number	Condition Report Number	Description
1	21-4819-5	UFSAR Change CN-3348 to update the UFSAR 9A discussion of maximum flooding rate in the ECWIS in combination with design basis accidents.
2	21-1267-29	UFSAR Change CN-3331 for changing the Aluminum Bronze strategy regarding cast components.
3	22-12639-9	Temporary modification T2-22-12639-6 to address rising vibration levels on Unit 2 Reactor Coolant Pump 2C.

1. 21-4819-5: UFSAR Change CN-3348 to update the UFSAR 9A discussion of maximum flooding rate in the ECWIS in combination with design basis accidents.

Description: UFSAR CN-3348 revises the UFSAR Appendix 9A description of the basis for the maximum allowed leakage rate in the Essential Cooling Water Intake Structure (ECWIS).

Summary: The maximum allowed leakage rate previously relied on the design internal flooding calculation which is not conservative for all safety-related equipment in the ECWIS pump rooms. A new calculation based on protecting safety-related equipment needed to maintain performance of the Essential Cooling Water (ECW) train shortens the time available before providing temporary drainage from 7 days to 4 days.

The evaluation determined that prior NRC approval was not required.

2. 21-1267-29: UFSAR Change CN-3331 for changing the Aluminum Bronze strategy regarding cast components.

Description: Change UFSAR section 19A.I.37, Selective Leaching of Aluminum Bronze, and Table 19A.4-l, License Renewal Commitments, Item 44, first bullet. Specifically, this change is to go from a "replace all" to a "replace as needed" strategy based on inspection results and analysis for the Selective Leaching of Aluminum Bronze aging management program.

Summary: This change allows STP to revise the Aluminum Bronze Management Program procedure to use a program or procedurally controlled programs to manage selective leaching of Aluminum Bronze moving forward and into the period of extended operation. These programs contain the process to identify selective leaching, establish a frequency for inspections, provide analytical approaches to evaluate structural integrity, provide acceptance criteria, and replacement requirements when needed. This is a UFSAR change and not a design or physical change. The Aluminum Bronze susceptible components will continue to meet the requirements of the ASME Boiler and Pressure Vessel Code, Section IIJ, 1974 Edition up to and including Winter 1975 Addenda, Sub. Section-NC. This includes meeting the design basis accidents.

The evaluation determined that prior NRC approval was not required.

3. **22-12639-9:** Temporary modification T2-22-12639-6 to address rising vibration levels on Unit 2 Reactor Coolant Pump 2C.

Description: This temporary modification bypasses the Reactor Coolant Pump 2C excessive/high vibration shaft alarms located on CP014 and removes monitoring for the RCP 2C shaft vibration and keyphasor probes and proximitors.

Summary: Criterion (i) was evaluated and it was determined that the removal of the alarms has a negligible effect on the frequency of the occurrence of an accident previously evaluated in the UFSAR. Criterion (ii) was evaluated and determined the Shaft Vibration Monitoring equipment cannot and does not increase the likelihood of the malfunction of the Reactor Coolant Pump 2C, an SSC Important to Safety. The monitoring equipment is a tool that in conjunction with other more primary means of indication can be useful to aid in recognizing the symptoms of a future failure or malfunction. All other criteria were determined not to be applicable to the scope of the intended change.