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Ref: 10CFR50.90

CPSES-200600591
Log # TXX-06058
File # 00236

March 22, 2006

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

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)
DOCKET NOS. 50-445 AND 50-446
LICENSE AMENDMENT REQUEST (LAR) 06-003
REVISION TO TECHNICAL SPECIFICATION 3.8.1, "AC SOURCES - OPERATING"

Dear Sir or Madam:

Pursuant to 10CFR50.90, TXU Generation Company LP (TXU Power) hereby requests an amendment to the CPSES Unit 1 Operating License (NPF-87) and CPSES Unit 2 Operating License (NPF-89) by incorporating the attached change into the CPSES Unit 1 and 2 Technical Specifications. This change request applies to both Units.

The proposed change will revise TS 3.8.1 entitled "AC Sources - Operating." Specifically, the proposed change would revise the Completion Time for TS 3.8.1, Condition F, Required Action F.1 from 12 hours to 24 hours.

Attachment 1 provides a detailed description of the proposed changes, a technical analysis of the proposed changes, TXU Power's determination that the proposed changes do not involve a significant hazard consideration, a regulatory analysis of the proposed changes and an environmental evaluation. Attachment 2 provides the affected Technical Specification (TS) page marked-up to reflect the proposed change. Attachment 3 provides a proposed change to the Technical Specification Bases for information only. This change will be processed per CPSES site procedures. Attachment 4 provides a retyped Technical Specification page which incorporates the requested change. Attachment 5 provides the retyped Technical Specification Base page which incorporates the proposed change.



A001

TXU Power requests approval of the proposed License Amendment by February 28, 2007, to be implemented within 120 days of the issuance of the license amendment. The approval date was administratively selected to allow for NRC review but the plant does not require this amendment to allow continued safe full power operations.

In accordance with 10CFR50.91(b), TXU Power is providing the State of Texas with a copy of this proposed amendment.

This communication contains no new or revised commitments.

Should you have any questions, please contact Mr. Robert A. Slough at (254) 897-5727.

I state under penalty of perjury that the foregoing is true and correct.

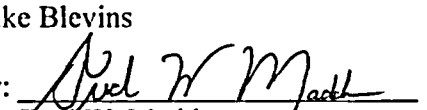
Executed on March 22, 2006.

Sincerely,

TXU Generation Company LP

By: TXU Generation Management Company LLC
Its General Partner

Mike Blevins

By: 
Fred W. Madden
Director, Regulatory Affairs

RAS

Attachments
1. Description and Assessment
2. Proposed Technical Specifications Change
3. Proposed Technical Specifications Bases Change (for information)
4. Retyped Technical Specification Page
5. Retyped Technical Specification Bases Page (for information)

c - B. S. Mallet, Region IV
Mohan Thadani, NRR
Resident Inspectors, CPSES

MS. Alice K. Rogers
Environmental & Consumer Safety Section
Texas Department of State Health Services
1100 West 49th Street
Austin, Texas 78756-3189

**ATTACHMENT 1 to TXX-06058**

**DESCRIPTION AND ASSESSMENT**

# LICENSEE'S EVALUATION

## 1.0 DESCRIPTION

By this letter, TXU Generation Company LP (TXU Power) requests an amendment to the CPSES Unit 1 Operating License (NPF-87) and CPSES Unit 2 Operating License (NPF-89) by incorporating the attached change into the CPSES Unit 1 and 2 Technical Specifications. Proposed change LAR 06-003 is a request to revise Technical Specification (TS) 3.8.1, "AC Sources - Operating" for Comanche Peak Steam Electric Station (CPSES) Units 1 and 2. The proposed change would revise the Completion Time for TS 3.8.1 Condition F, Required Action F.1, "Restore SI sequencer to OPERABLE status" from 12 hours to 24 hours.

No changes to the CPSES Final Safety Analysis Report are anticipated at this time as a result of this License Amendment Request.

## 2.0 PROPOSED CHANGE

The proposed change would revise TS 3.8.1, "AC Sources – Operating" to revise the Completion Time for TS 3.8.1, Condition F, Required Action F.1, from 12 hours to 24 hours.

## 3.0 BACKGROUND

For each Unit, two independent and redundant Solid State Safeguards Sequencer (SSSS) cabinets are provided for sequential loading of the safeguard buses, one for Train A and one for Train B. Each cabinet houses two sequencers, one for the Safety Injection mode sequencing (SIS) and one for loss of offsite power (LOOP) only mode sequencing (BOS). Both the Train A and Train B Sequencer cabinets are located in the main Control Room. Power to the Solid State Safeguards Sequencers (SSSS) is supplied from uninterruptable 118-volt AC panels. Each sequencer cabinet will provide the logic for loading the train-related 6.9 kV emergency bus in a pre-established time sequence in the event of loss and subsequent restoration of bus voltage and/or in the event of a LOCA.

Each sequencer is basically a group of output electromechanical relays operated by solid state logic circuits and timers. The separate and independent timer circuits are initiated for each loading step by solid state logic circuits. The SSSS accepts and combines Safety Injection signals from the Solid State Protection System output relay cabinet and undervoltage (UV) input signals from the train-related safeguards bus, and provides output control signals to the train-related safety related equipment required for the safe shutdown of the plant. The output signals are shown in Figure 8.3-4 in the FSAR. A review of the sequencer circuitry reveals that the sequencer design is relatively direct and simple, not subject to sneak circuits, and is highly reliable.

In the event of Safety Injection actuation, the following sequence of operation is initiated.

a. The Emergency Diesel Generators (EDGs) receive starting signals and the Safety Injection Sequencer (SIS) receives an arming signal from the Solid State Protection System (SSPS).

b. All non-Class 1E loads connected to Class 1E 6.9 kV and 480 V buses are tripped except those which are isolated in accordance with FSAR Section 8.3.1.2.1.7a.3.

c. Large loads required during a DBA are started in sequence by the Safety Injection Sequencer and the associated slave relay(s). The SIS provides 10 independent, time-separated, sequential loading signals to the equipment loads listed in FSAR Table 8.3-1. Additionally, the SIS generates SIS auto-lockout and SIS operator lockout signals. The last SIS step, in addition to providing an output loading signal, also provides a reset signal to the SIS operator lockout circuits.

In the event of safety injection concurrent with a LOOP, the SSSS functions to recognize the simultaneous or sequential occurrence of a 6.9 kV Class 1E bus UV signal and a Safety Injection signal. In this mode, the time-step output signals of both the SI and the Blackout sequencers are deenergized and remain deenergized until the status of the 6.9 kV Class 1E bus UV input returns to normal. The Diesel Generator output breaker will close after the DG rated voltage and frequency have been established, provided the time delay for bus voltage to decay to an acceptable level after both preferred and alternate source breakers are open has elapsed and there is no bus fault. The SIS will be started on restoration of 6.9 kV Class 1E bus voltage and the SIS then proceeds through its operation.

A Safety Injection signal is generated by Hi-1 containment pressure, low pressurizer pressure, low steam line pressure, or manually. The Safety Injection signal starts or stops pumps and opens or shuts valves. The primary function is to align various flow paths from the Refueling Water Storage Tank (RWST) to the Reactor Coolant System (RCS). A Safety Injection signal generates other signals used to support Engineered Safeguards Features (ESF) components and initiates a reactor trip if one has not already been initiated.

The Safety Injection signal is developed by the Solid State Protection System (SSPS). It actuates ESF equipment by energizing slave relays. Since a Safety Injection signal starts many pumps, the Safety Injection Sequencer (SIS) is used to help sequence these loads on the ESF bus and prevent a possible overload of the train-related EDG associated with that bus. The SIS is also used to stop equipment, open fan dampers, etc. The SSPS slave relays directly operate valves, trip open breakers, and start the SIS so that it will perform its function.

If an automatic or manual Safety Injection signal is generated, the SSPS will energize its slave relays. Eight of the sixteen slave relays in a train of SSPS operate contacts to initiate a Safety Injection Sequencer actuation. Upon actuation, the SIS will immediately energize its Operator Lockout relays and Automatic Lockout relays. The Operator Lockout relays prevent the operator from starting selected ESF equipment out of sequence. The Automatic Lockout relays will prevent other automatic start signals from starting the selected ESF equipment out of sequence. The Automatic Lockout relays of the SIS are also used to send a redundant Emergency Start signal to the train-associated EDG.

One second after the Safety Injection signal has been received, the SIS will start its step timers and begin to sequence on the major equipment (Centrifugal Charging Pumps, Safety Injection Pumps, Residual Heat Removal Pumps, Containment Spray Pumps, Component Cooling Water Pumps, Station Service Water Pumps, Motor Driven Auxiliary Feedwater Pumps) needed for the Safety Injection. Most of the major pumps must receive a SIS start signal and a SSPS slave relay start signal to start. The SSPS slave relay signal will already be present, and the SIS sequencer signal is all that will be needed to start the pump. The one second delay is to assure the complete reset of the SIS, including its output relays, in the case where the sequencer was being run in the "test" mode when a "real" Safety Injection signal occurred.

## 4.0 TECHNICAL ANALYSIS

Currently, TS 3.8.1 Condition F requires that an inoperable SI Sequencer must be restored to OPERABLE status within 12 hours. If this COMPLETION TIME is not met, Condition G becomes applicable and the plant must be shutdown to at least MODE 3 within the following 6 hours. The proposed change to the COMPLETION TIME for TS 3.8.1 Condition F, Required Action F.1, will provide more time to complete necessary repairs and required post-work testing to restore an inoperable Safety Injection Sequencer to OPERABLE status prior to commencing a plant shutdown to MODE 3.

TS 3.3.2, "ESFAS Instrumentation" provides the Limiting Conditions for Operation for the instrumentation which provide the signals used to generate the Safety Injection signal in the Solid State Protection System. Function 1 in TS Table 3.3.2-1 applies to those signals used for Safety Injection actuation. Function 1.b applies to the automatic actuation logic and actuation relays. Condition C of TS 3.3.2 is applicable in the case of an inoperability of one train of Safety Injection automatic actuation logic and actuation relays. The Completion Time specified in TS 3.3.2 Condition C for restoring the inoperable train of Safety Injection automatic actuation logic and actuation relays is 24 hours.

Amendment No. 114 (reference 8.1) to the CPSES Operating Licenses for Units 1 and 2, No. NPF-87 and NPF-89 respectively, was issued by the NRC on January 31, 2005 in response to our application dated January 21, 2004 (reference 8.2), and its supplemental letters dated November 18 and December 3, 2004 (references 8.3 and 8.4, respectively). Amendment 114 revised TS 3.3.1, "Reactor Trip System (RTS) Instrumentation," 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation," and 3.3.6, "Containment Ventilation Isolation Instrumentation," to adopt the completion time, test bypass time, and surveillance frequency time changes approved by the NRC in Topical Reports WCAP-14333-P-A, "Probabilistic Risk Analysis of the RPS [reactor protection system] and ESFAS Test Times and Completion Times," and WCAP-15376-P-A, "Risk-Informed Assessment of the RTS and ESFAS Surveillance Test Intervals and Reactor Trip Breaker Test and Completion Times." In addition to other changes, Amendment 114 increased the completion time for restoring an inoperable train of Safety Injection Automatic Actuation Logic and Actuation Relays per TS 3.3.2, Condition C from six hours to 24 hours.

As described above, the Safety Injection Sequencer step timers and output relays are used to actuate various ESF systems and major equipment. For those ESF systems and signals actuated by the Safety Injection Sequencer, the shortest Completion Time for restoration of the individual system or signal to OPERABLE status is 24 hours, specified in TS 3.3.1, "RTS Instrumentation," Function 17 for the Safety Injection input to the Reactor Trip System from ESFAS. All other applicable individual ESF system TS LCOs specify a Completion Time of 72 hours or more for restoring the individual ESF system or signal to OPERABLE status.

All of the signals used to actuate the Safety Injection Sequencer and all of the systems, equipment, and signals actuated by the Safety Injection Sequencer are allowed to be inoperable for no less than 24 hours. An inoperable Safety Injection Sequencer presents no greater risk and has the same impact upon accident mitigation capability as an inoperable train of Safety Injection automatic actuation logic and actuation relays, a condition which was evaluated for the potential impact on plant risk during the Staff's review of Reference 8.2 which resulted in the issuance of License Amendment 114 (Reference 8.1) and which is currently addressed by TS 3.3.2 Function 1.b. Therefore, it is reasonable to allow 24 hours to restore an inoperable Safety Injection Sequencer to OPERABLE status.

## 5.0 REGULATORY ANALYSIS

### 5.1 No Significant Hazards Consideration

TXU Power has evaluated whether or not a significant hazards consideration is involved with the proposed amendment(s) by focusing on the three standards set forth in 10CFR50.92, "Issuance of amendment," as discussed below:

1. Do the proposed changes involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response: No

   The proposed change to the Completion Time for TS 3.3.2, Condition F does not change the overall protection system performance which will remain within the bounds of the previously performed accident analyses since no hardware changes are proposed. The same reactor trip system (RTS) and engineered safety feature actuation system (ESFAS) instrumentation will continue to be used. The protection systems will continue to function in a manner consistent with the plant design basis. This change to the Technical Specifications does not result in a condition where the design, material, and construction standards that were applicable prior to the change are altered.

   The proposed change will not modify any system interface. The proposed change will not affect the probability of any event initiators. There will be no degradation in the performance of or an increase in the number of challenges imposed on safety-related equipment assumed to function during an accident situation. There will be no change to normal plant operating parameters or accident mitigation performance. The proposed change will not alter any assumptions or change any mitigation actions in the radiological consequence evaluations in the FSAR.

   The proposed change to the Completion Time does not increase the probability of any accident previously evaluated. The proposed change does not change the response of the plant to any accidents and has no impact on the reliability of the RTS and ESFAS signals. The RTS and ESFAS will remain highly reliable and the proposed change does not result in an increase in the risk of plant operation.

The proposed change does not adversely affect accident initiators or precursors nor alter the design assumptions, conditions, or configuration of the facility or the manner in which the plant is operated and maintained. The proposed change does not alter or prevent the ability of structures, systems, and components (SSCs) from performing their intended function to mitigate the consequences of an initiating event within the assumed acceptance limits. The proposed change does not affect the source term, containment isolation, or radiological release assumptions used in evaluating the radiological consequences of an accident previously evaluated. The proposed change is consistent with safety analysis assumptions and resultant consequences.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Do the proposed changes create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No

The proposed change involves no hardware changes nor are there any changes in the method by which any safety-related plant system performs its safety function. The proposed change will not affect the normal method of plant operation. No performance requirements will be affected or eliminated. The proposed change will not result in physical alteration to any plant system nor will there be any change in the method by which any safety-related plant system performs its safety function.

There will be no setpoint changes or changes to accident analysis assumptions.

No new accident scenarios, transient precursors, failure mechanisms, or limiting single failures are introduced as a result of this change. There will be no adverse effect or challenges imposed on any safety-related system as a result of these changes.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Do the proposed changes involve a significant reduction in a margin of safety?

Response: No

The proposed change does not affect the acceptance criteria for any analyzed event nor is there a change to any Safety Analysis Limit (SAL). There will be no effect on the manner in which safety limits, limiting safety system settings, or limiting conditions for operation are determined nor will there be any effect on those plant systems necessary to assure the accomplishment of protection functions. There will be no impact on the overpower limit, DNBR limits, FQ, FΔH, LOCA PCT, peak local power density, or any other margin of safety. The radiological dose consequence acceptance criteria listed in the Standard Review Plan will continue to be met.

Redundant RTS and ESFAS trains are maintained and diversity with regard to the signals that provide reactor trip and engineered safety features actuation is also maintained. All signals credited as primary or secondary, and all operator actions credited in the accident analyses will remain the same. The proposed changes will not result in plant operation in a configuration outside the design basis.

Implementation of the proposed changes is expected to result in an overall improvement in safety since longer repair times associated with increased Completion Times will lead to higher quality repairs and improved reliability. The increased Completion Time for an inoperable Safety Injection Sequencer will provide additional time to complete test and maintenance activities while at power, potentially reducing the number of forced outages related to compliance with TS 3.3.2, Condition G which requires plant shutdown to Mode 3 within 6 hours.

Therefore the proposed change does not involve a reduction in a margin of safety.

Based on the above evaluations, TXU Power concludes that the proposed amendment(s) present no significant hazards under the standards set forth in 10CFR50.92(c) and, accordingly, a finding of "no significant hazards consideration" is justified.

**5.2 Applicable Regulatory Requirements/Criteria**

GDC 13 requires that instrumentation shall be provided to monitor variables and systems over their anticipated ranges for normal operation, for anticipated operational occurrences, and for accident conditions as appropriate to assure adequate safety, including those variables and systems that can affect the fission process, the integrity of the reactor core, the reactor coolant pressure boundary, and the containment and its associated systems.

GDC 20 requires that the protection system(s) shall be designed (1) to initiate automatically the operation of appropriate systems including the reactivity control systems, to assure that specified acceptable fuel design limits are not exceeded as a result of anticipated operational occurrences and (2) to sense accident conditions and to initiate the operation of systems and components important to safety.

GDC 21 requires that the protection system(s) shall be designed for high functional reliability and testability.

GDC 22 through GDC 25 and GDC 29 require various design attributes for the protection system(s), including independence, safe failure modes, separation from control systems, requirements for reactivity control malfunctions, and protection against anticipated operational occurrences.

Regulatory Guide 1.22 discusses an acceptable method of satisfying GDC 20 and GDC 21 regarding the periodic testing of protection system actuation functions. These periodic tests should duplicate, as closely as practicable, the performance that is required of the actuation devices in the event of an accident.

10CFR50.55a(h) requires that the protection systems meet IEEE 279-1971. Section 4.2 of IEEE 279-1971 discusses the general functional requirement for protection systems to assure they satisfy the single failure criterion.

There will be no changes to the RTS or ESFAS instrumentation design such that compliance with any of the regulatory requirements and guidance documents above would come into question. The above evaluations confirm that the plant will continue to comply with all applicable regulatory requirements.

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

## 6.0 ENVIRONMENTAL CONSIDERATION

TXU Power has determined that the proposed amendment would change requirements with respect to the installation or use of a facility component located within the restricted area, as defined in 10CFR20, or would change an inspection or surveillance requirement. TXU Power has evaluated the proposed changes and has determined that the changes do not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amount of effluent that may be released offsite, or (iii) a significant increase in the individual or cumulative occupational radiation exposure. Accordingly, the proposed change meets the eligibility criterion for categorical exclusion set forth in 10CFR51.22(c)(9). Therefore, pursuant to 10CFR51.22(b), an environmental assessment of the proposed change is not required.

## 7.0 PRECEDENTS

7.1 The Technical Specifications for both the Palo Verde Nuclear Generating Station units and the Shearon Harris Nuclear Plant provide 24 hrs to restore an inoperable Safety Injection Sequencer to operable status. While the Palo Verde Nuclear Generating Station units are Combustion Engineering designs, the Shearon Harris plant is a 4-loop Westinghouse PWR similar to the Comanche Peak Steam Electric Station units.

## 8.0. REFERENCES

8.1 CPSES License Amendment 114, "Plant Protection Test Times, Completion Times, And Surveillance Test Intervals," dated January 31, 2005.

8.2 TXU Power letter logged TXX-03187 from Mike Blevins to USNRC dated January 21, 2004, "License Amendment Request (LAR) 03-008: Common Stars License Amendment, Implementation of WCAP-14333 and WCAP-15376 RTS and ESFAS Test Times, Completion Times, and Surveillance Test Intervals."

8.3 TXU Power letter logged TXX-04207 from Mike Blevins to USNRC dated November 18, 2004, "Response to Request for Additional Information to License Amendment Request (LAR) 03-008: Common Stars License Amendment, Implementation of WCAP-14333 and WCAP-15376 RTS and ESFAS Test Times, Completion Times, and Surveillance Test Intervals" (TAC No. MB1845/1846).

8.4 TXU Power letter logged TXX-04217 from Mike Blevins to USNRC dated December 3, 2004, "Response to Request for Additional Information to License Amendment Request (LAR) 03-008: Common Stars License Amendment, Implementation of WCAP-14333 and WCAP-15376 RTS and ESFAS Test Times, Completion Times, and Surveillance Test Intervals" (TAC No. MB1845/1846).

**ATTACHMENT 2 to TXX-06058**

**PROPOSED TECHNICAL SPECIFICATION CHANGE (MARK-UP)**

**Page** 3.8-5

SURVEILLANCE REQUIREMENTS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|---|
| D. One required offsite circuit inoperable.<br><br>AND<br><br>One DG inoperable. | ----------NOTE----------<br>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.<br>----------<br>D.1 Restore required offsite circuit to OPERABLE status.<br><br>OR<br><br>D.2 Restore DG to OPERABLE status. | <br><br><br><br>12 hours<br><br><br>12 hours |
| E. Two DGs inoperable. | E.1 Restore one DG to OPERABLE status. | 2 hours |
| F. One SI sequencer inoperable. | ----------NOTE----------<br>One required SI sequencer channel may be bypassed for up to 4 hours for surveillance testing provided the other channel is operable.<br>----------<br>F.1 Restore SI sequencer to OPERABLE status. | <br><br><br><br>24<br>~~12~~ hours |

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**ATTACHMENT 3 to TXX-06058**

**PROPOSED TECHNICAL SPECIFICATIONS BASES CHANGE**
**(Markup For Information Only)**

**Page B 3.8-13**

BASES

ACTIONS

D.1 and D.2 (continued)

In Condition D, individual redundancy is lost in both the offsite electrical power system and the onsite AC electrical power system. Since power system redundancy is provided by two diverse sources of power, however, the reliability of the power systems in this Condition may appear higher than that in Condition C (loss of both required offsite circuits). This difference in reliability is offset by the susceptibility of this power system configuration to a single bus or switching failure. The 12 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period.

E.1

With Train A and Train B DGs inoperable, there are no remaining standby AC sources. Thus, with an assumed loss of offsite electrical power, insufficient standby AC sources are available to power the minimum required ESF functions. Since the offsite electrical power system is the only source of AC power for this level of degradation, the risk associated with continued operation for a very short time could be less than that associated with an immediate controlled shutdown (the immediate shutdown could cause grid instability, which could result in a total loss of AC power). Since any inadvertent generator trip could also result in a total loss of offsite AC power, however, the time allowed for continued operation is severely restricted. The intent here is to avoid the risk associated with an immediate controlled shutdown and to minimize the risk associated with this level of degradation.

According to Reference 6, with both DGs inoperable, operation may continue for a period that should not exceed 2 hours.

F.1

The SI sequencer(s) is an essential support system to both the offsite circuit and the DG associated with a given ESF bus. Furthermore, the sequencer is on the primary success path for most major AC electrically powered safety systems powered from the associated ESF bus. Therefore, loss of an ESF bus sequencer affects every major ESF system in the train. The ~~12~~ 24 hour Completion Time provides a period of time to correct the problem commensurate with the importance of

(continued)

**ATTACHMENT 4 to TXX-06058**

**RETYPED TECHNICAL SPECIFICATION PAGE**

**Page** 3.8-5

SURVEILLANCE REQUIREMENTS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|---|
| D. One required offsite circuit inoperable.<br><br>AND<br><br>One DG inoperable. | ----------NOTE----------<br>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.<br>----------<br><br>D.1 Restore required offsite circuit to OPERABLE status.<br><br>OR<br><br>D.2 Restore DG to OPERABLE status. | <br><br><br><br>12 hours<br><br>12 hours<br><br><br> |
| E. Two DGs inoperable. | E.1 Restore one DG to OPERABLE status. | 2 hours |
| F. One SI sequencer inoperable. | ----------NOTE----------<br>One required SI sequencer channel may be bypassed for up to 4 hours for surveillance testing provided the other channel is operable.<br>----------<br><br>F.1 Restore SI sequencer to OPERABLE status. | <br><br><br><br><br><br>24 hours |

(continued)

**ATTACHMENT 5 to TXX-06058**

**RETYPED TECHNICAL SPECIFICATION BASES PAGE**
**(For Information Only)**

**Page** B 3.8-13

BASES

ACTIONS

D.1 and D.2 (continued)

In Condition D, individual redundancy is lost in both the offsite electrical power system and the onsite AC electrical power system. Since power system redundancy is provided by two diverse sources of power, however, the reliability of the power systems in this Condition may appear higher than that in Condition C (loss of both required offsite circuits). This difference in reliability is offset by the susceptibility of this power system configuration to a single bus or switching failure. The 12 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period.

E.1

With Train A and Train B DGs inoperable, there are no remaining standby AC sources. Thus, with an assumed loss of offsite electrical power, insufficient standby AC sources are available to power the minimum required ESF functions. Since the offsite electrical power system is the only source of AC power for this level of degradation, the risk associated with continued operation for a very short time could be less than that associated with an immediate controlled shutdown (the immediate shutdown could cause grid instability, which could result in a total loss of AC power). Since any inadvertent generator trip could also result in a total loss of offsite AC power, however, the time allowed for continued operation is severely restricted. The intent here is to avoid the risk associated with an immediate controlled shutdown and to minimize the risk associated with this level of degradation.

According to Reference 6, with both DGs inoperable, operation may continue for a period that should not exceed 2 hours.

F.1

The SI sequencer(s) is an essential support system to both the offsite circuit and the DG associated with a given ESF bus. Furthermore, the sequencer is on the primary success path for most major AC electrically powered safety systems powered from the associated ESF bus. Therefore, loss of an ESF bus sequencer affects every major ESF system in the train. The 24 hour Completion Time provides a period of time to correct the problem commensurate with the importance of

(continued)