November 29, 2000

Mr. C. Lance Terry
Senior Vice President &
Principal Nuclear Officer
TXU Electric Company
Attn: Regulatory Affairs Department
P. O. Box 1002
Glen Rose, TX 76043

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION, UNITS 1 AND 2 - REPLACEMENT TECHNICAL SPECIFICATION BASES PAGES (TAC NOS. MB0222 AND MB0223)

Dear Mr. Terry:

By letter dated September 15, 2000, you submitted changes to the Bases for the Comanche Peak Steam Electric Station, Units 1 and 2 (CPSES) Technical Specifications (TS). The Bases changes involve both changes made via license amendments, with prior U.S. Nuclear Regulatory Commission (NRC) approval, and those made via 10 CFR Part 50, Section 50.59(c)(1), without prior NRC approval. Enclosed are the revised TS Bases pages that the NRC staff will use to update its copy of the CPSES TS Bases.

Sincerely,

/RA/

David H. Jaffe, Senior Project Manager, Section 1
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Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-445 and 50-446

Enclosure: As stated

cc w/encls: See next page

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COMANCHE PEAK STEAM ELECTRIC STATION
TECHNICAL SPECIFICATIONS BASES
INSTRUCTION SHEET

The following instructional information is provided for guidance in inserting the change pages for the Technical Specification Bases.

Discard the old sheet and insert the new sheets, as listed below.

REMOVE	INSERT
B 3.1-18	B 3.1-18
B 3.1-19	B 3.1-19
B 3.3-5	B 3.3-5
B 3.3-59	B 3.3-59
B 3.3-141	B 3.3-141
B 3.7-18	B 3.7-18
B 3.7-19	B 3.7-19
B 3.7-67	B 3.7-67
B 3.8-15	B 3.8-15
B 3.8-38	B 3.8-38
B 3.8-40 thru B 3.8-44	B 3.8-40 thru B 3.8-44
B 3.8-53	B 3.8-53
B 3.8-54	B 3.8-54
B 3.9-15	B 3.9-15
B 3.9-16	B 3.9-16
EPL-i	EPL-i
EPL-1 thru EPL-10	EPL-1 thru EPL-10

Enclosure

COMANCHE PEAK STEAM ELECTRIC STATION
TS BASES REPLACEMENT PAGES

BASES (continued)

SURVEILLANCE REQUIREMENTS

SR 3.1.3.1

This SR requires measurement of the MTC at BOC prior to entering MODE 1 in order to demonstrate compliance with the most positive MTC LCO. Meeting the limit prior to entering MODE 1 ensures that the limit will also be met at higher power levels.

The BOC MTC value for ARO will be inferred from isothermal temperature coefficient measurements obtained during the physics tests after refueling. The ARO value can be directly compared to the BOC MTC limit of the LCO. If required, measurement results and predicted design values can be used to establish administrative withdrawal limits for control banks.

SR 3.1.3.2

In similar fashion, the LCO requires that the MTC be less negative than the specified value for EOC full power conditions. This measurement may be performed at any THERMAL POWER, but its results must be extrapolated to the conditions of RTP and all banks withdrawn in order to make a proper comparison with the LCO value. Because the RTP MTC value will gradually become more negative with further core depletion and boron concentration reduction, 60 ppm and 300 ppm SR values of MTC should necessarily be less negative than the EOC LCO limit. The 60 ppm and 300 ppm SR value is sufficiently less negative than the EOC LCO limit value to ensure that the LCO limit will be met when the Surveillance criterion is met. | 11

The 60 ppm and 300 ppm SR values are determined consistent with a natural (fresh) Boron-10 (B-10) isotopic abundance in the RCS boron. During normal operation, neutron, neutron absorption reduces the fraction of B-10 in the RCS boron concentration. When the plant operates at steady state full power during the cycle, boration is generally not required and the B-10 is not replenished. A B-10 depletion model that accounts for the reduction in the B-10 isotopic abundance may be used to adjust the measured boron concentration to be more consistent with the calculational basis of the SR values. | 11

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.1.3.2 (continued)

SR 3.1.3.2 is modified by three Notes that include the following requirements:

1. The SR is not required to be performed until 7 effective full power days (EFPDs) after reaching the equivalent of an equilibrium RTP all rods out (ARO) boron concentration of 300 ppm. The measured equilibrium boron concentration should be adjusted to RTP, ARO conditions and may be adjusted for B-10 isotopic abundance. Normally, the measured concentration will be greater than the adjusted concentration near this time in cycle life. The SR should not be performed prior to the adjusted concentration indicating ≤300 ppm. The SR shall be performed prior to exceeding 7 EFPDs after achieving an adjusted concentration of 300 ppm. | 11

2. If the 300 ppm Surveillance limit is exceeded, it is possible that the EOC limit on MTC could be reached before the planned EOC. Because the MTC changes slowly with core depletion, the Frequency of 14 effective full power days (EFPDs) is sufficient to avoid exceeding the EOC limit.

3. The Surveillance limit for RTP boron concentration of 60 ppm is conservative. If the measured MTC at 60 ppm is more positive than the 60 ppm Surveillance limit, the EOC limit will not be exceeded because of the gradual manner in which MTC changes with core burnup.

REFERENCES

1. 10 CFR 50, Appendix A, GDC 11.

2. FSAR, Chapter 15.

BASES

BACKGROUND Allowable Values and Trip Setpoints (continued)

The trip setpoints used in the bistables are based on the analytical limits stated in Reference 2. The selection of these trip setpoints is such that adequate protection is provided when all sensor and processing time delays are taken into account. To allow for calibration tolerances, instrumentation uncertainties, instrument drift, and severe environment errors for those RTS channels that must function in harsh environments as defined by 10 CFR 50.49 (Ref. 4), the Allowable Values specified in Table 3.3.1-1 in the accompanying LCO are conservative with respect to the analytical limits. | 7

The methodology to derive the Trip Setpoints is based upon combining all of the uncertainties in the channels. The essential elements of the methodology are described in Reference 9. Changes in accordance with this methodology have been reviewed by the staff in the original Unit 2 Technical Specifications and in several subsequent license amendments (e.g., amendments 21/7 and 22/8 to the Unit 1/Unit 2 Technical Specifications). The actual nominal trip setpoint entered into the bistable is more conservative than that specified by the Allowable Value to account for changes in random measurement errors detectable by a COT. One example of such a change in measurement error is drift during the surveillance interval. If the measured setpoint does not exceed the Allowable Value, the bistable is considered OPERABLE. The trip setpoint is the value at which the bistable is set and is the expected value to be achieved during calibration. The trip setpoint value ensures the LSSS and the safety analysis limits are met for the time period of the surveillance interval when a channel is adjusted based on stated channel uncertainties. Any bistable is considered to be properly adjusted when the "as left" setpoint value is within the band for CHANNEL CALIBRATION uncertainty allowance (i.e., ± rack calibration + comparator setting uncertainties). The trip setpoint value of Table B3.3-1.1 is therefore considered a "nominal" value (i.e., expressed as a vaolue without inequalities) for the purposes of COT and CHANNEL CALIBRATION. | 7

Trip setpoints consistent with the requirements of the Allowable Value ensure that design limits are not violated during AOOs (and that the consequences of DBAs will be acceptable, providing the unit is operated from within the LCOs at the onset of the AOO or DBA and the equipment functions as designed). Note that in the accompanying LCO 3.3.1, the Allowable Values of Table 3.3.1-1 are the LSSS. | 7

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.1.9 (continued)

This SR is modified by a Note that excludes verification of setpoints from the TADOT. Since this SR applies to RCP undervoltage and underfrequency relays, setpoint verification requires elaborate bench calibration and is accomplished during the CHANNEL CALIBRATION.

SR 3.3.1.10

A CHANNEL CALIBRATION is performed every 18 months, or approximately at every refueling. CHANNEL CALIBRATION is a complete check of the instrument loop, including the sensor. The test verifies that the channel responds to a measured parameter within the necessary range and accuracy. This SR is modified by Note 1 stating that N-16 detectors are excluded from the CHANNEL CALIBRATION because the unit must be in at least MODE 1 to obtain N-16 indications. However, after achieving equilibrium conditions in MODE 1, detector plateau curves should be obtained, evaluated and compared to manufacturer's data. | 9 | 9

CHANNEL CALIBRATIONS must be performed consistent with the assumptions of the setpoint methodology.

The Frequency of 18 months is based on the assumption of an 18 month calibration interval in the determination of the magnitude of equipment drift in the setpoint methodology.

SR 3.3.1.10 is modified by Note 2 stating that this test shall include verification that the time constants are adjusted to the prescribed values where applicable. This surveillance does not include verification of time delay relays. These relays are verified via response time testing per SR 3.3.1.16. Whenever an RTD is replaced in Functions 6 or 7, the next required CHANNEL CALIBRATION of the RTDs is accomplished by an inplace cross calibration that compares other sensing elements with the recently installed element. | 9

The SR is modified by Note 3 stating that, prior to entry into MODES 2 or 1, power and intermediate range detector plateau verification is not required to be performed until 72 hours after achieving equilibrium conditions with THERMAL POWER $\geq$ 90% RTP. | 9

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.3.2

For the hydrogen monitors, a sensor module calibration is performed every 92 days. The calibration sequence uses sample gas in accordance with the manufacturer's recommendations and verifies that the current calibration constants are contained in the microprocessor database. This SR is modified by a Note indicating that this SR is only applicable to the hydrogen monitors. The Frequency is based on manufacturer's recommendations.

SR 3.3.3.3

A CHANNEL CALIBRATION is performed every 18 months, or approximately at every refueling. CHANNEL CALIBRATION is a complete check of the instrument loop, including the sensor. The test verifies that the channel responds to measured parameter with the necessary range and accuracy. The calibration method for neutron detectors is specified in the Bases of LCO 3.3.1, "Reactor Trip System (RTS) Instrumentation." Whenever an RTD is replaced in Function 3 or 4, the next required CHANNEL CALIBRATION of the RTDs is accomplished by an inplace cross calibration that compares other sensing elements with the recently installed element. Whenever a core exit thermocouple replaced in Functions 15 thru 18, the next required CHANNEL CALIBRATION of the core exit thermocouples is accomplished by an in-place cross calibration that compares the other sensing elements with the recently installed sensing element. The Frequency is based on operating experience and consistency with the typical industry refueling cycle. Containment Radiation Level (High Range) CHANNEL CALIBRATION may consist of an electronic calibration of the channel, not including the detector, for range decades above 10R/hr and a one point calibration check of the detector below 10R/hr with an installed or portable gamma source. | 9 | 9

(continued)

BASES (continued)

APPLICABILITY

The FIVs and the associated bypass valves must be OPERABLE whenever there is significant mass and energy in the Reactor Coolant System and steam generators. This ensures that, in the event of an HELB, a single failure cannot result in the blowdown of more than one steam generator. In MODES 1, 2, and 3, the FIVs and the associated bypass valves are required to be OPERABLE to limit the amount of available fluid that could be added to containment in the case of a secondary system pipe break inside containment. When the valves are closed and de-activated or isolated by a closed manual valve, they are already performing their safety function. In MODES 4, 5, and 6, steam generator energy is low. Therefore, the FIVs and the associated bypass valves are normally closed since MFW is not required.

ACTIONS

The ACTIONS table is modified by a Note indicating that separate Condition entry is allowed for each valve.

A.1 and A.2

With one FIV in one or more flow paths inoperable, action must be taken to restore the affected valves to OPERABLE status, or to close or isolate inoperable affected valves within 4 hours. When these valves are closed or isolated, they are performing their required safety function. Alternately, for the repair of the FIV hydraulic system only, if within 4 hours the FCV and associated FCV bypass valve in the same flowpath are verified to be capable of performing the isolation function, the closure/isolation of inoperable affected valves can be extended to 24 hours. If the FCV or associated bypass valve in the same flowpath are not capable of performing the isolation function then the inoperable FIVs must be closed or isolated within 4 hours. The FCV and associated FCV bypass valve are considered to be capable of performing the isolation function when TRM SRs 13.7.40.1 and 13.7.40.2 have been performed within the required testing interval. 10

The 24 hour Completion Time takes into account the redundancy afforded by the FCV and associated bypass valve which are capable of performing the isolation function. The 24 hour and the 4 hour Completion Times take into account the low probability of an event occurring during this time period that would require isolation of the MFW flow paths. The Completion Times are reasonable, based on operating experience. 10 10

(continued)

BASES

ACTIONS (continued)

Inoperable FIVs that are closed or isolated must be verified on a periodic basis that they are closed or isolated. This is necessary to ensure that the assumptions in the safety analysis remain valid. The 7 day Completion Time is reasonable, based on engineering judgment, in view of valve status indications available in the control room, and other administrative controls, to ensure that these valves are closed or isolated. LCO 3.0.5 allows the FIVs to be opened as needed for post maintenance testing to demonstrate operability.

B.1 and B.2

With one associated bypass valve in one or more flow paths inoperable, action must be taken to restore the affected valves to OPERABLE status, or to close or isolate inoperable affected valves within 4 hours. When these valves are closed or isolated, they are performing their required safety function.

The 4 hour Completion Time takes into account the redundancy afforded by the remaining OPERABLE valves and the low probability of an event occurring during this time period that would require isolation of the MFW flow paths. The 4 hour Completion Time is reasonable, based on operating experience.

Inoperable associated bypass valves that are closed or isolated must be verified on a periodic basis that they are closed or isolated. This is necessary to ensure that the assumptions in the safety analysis remain valid. The 7 day Completion Time is reasonable, based on engineering judgment, in view of valve status indications available in the control room, and other administrative controls, to ensure that these valves are closed or isolated. LCO 3.0.5 allows the FIV bypass valves to be opened as needed for post maintenance testing to demonstrate operability.

C.1 and C.2

If the FIVs and the associated bypass valve(s) cannot be restored to OPERABLE status, or closed, or isolated within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4 within 12 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

(continued)

B 3.7 PLANT SYSTEMS

B 3.7.12 Primary Plant Ventilation System (PPVS) - ESF Filtration Trains

BASES

BACKGROUND

The Primary Plant Ventilation System (PPVS) serves all the areas housing engineered safety features equipment which recirculate post-accident reactor coolant outside containment after a LOCA as well as the radwaste areas and the fuel handling and storage areas. The PPVS supply consists of eight non-safety related, primary plant supply fans (30,000 scfm each) sharing common ductwork and dampers and two non-safety related, ventilation equipment room supply fans. The PPVS exhaust consists of twelve non-ESF filtration units and fans (15,000 scfm each), four ESF filtration units and fans (15,000 scfm each), and two non-safety related, ventilation equipment room exhaust fans. The exhaust units are run during normal conditions to provide a slightly negative pressure in the primary plant areas. | 11 | 11

The PPVS supply fans provide cooling air during normal operation. The non-ESF exhaust filtration units filter air from each units Safeguards building and from the common Auxiliary and Fuel buildings during normal operation. The PPVS exhaust ESF Filtration units filter air from these areas which contain the active ECCS components during the recirculation phase of a loss of coolant accident (LOCA). The ESF filtration units may be used in normal operation if the capacity of the non-ESF units is insufficient for a condition (e.g., maximum outdoor design conditions) or a mode (e.g., containment purge) or if a non-ESF unit is unavailable.

The PPVS exhaust consists of two electrically independent and redundant trains sharing common ductwork and plenums. Each train has six non-ESF Filtration units and two ESF Filtration units. Each ESF Filtration unit consists of a heater, a demister, a high efficiency particulate air (HEPA) filter, an activated charcoal adsorber section for removal of gaseous activity (principally iodines), and a fan. Ductwork, dampers, and instrumentation also form part of the system, as well as demisters functioning to reduce the relative humidity of the air stream. A second bank of HEPA filters follows the adsorber section to collect

(continued)

BASES (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 (Ref. 8). Periodic component tests are supplemented by extensive functional tests during refueling outages (under simulated accident conditions). The SR for demonstrating the OPERABILITY of the DGs are consistent with the recommendations of Regulatory Guide 1.9 (Ref. 3), and Regulatory Guide 1.137 (Ref. 10).

Where the SR discussed herein specify voltage and frequency tolerances, the following is applicable.

The minimum steady state output voltage of 6480 V allows for voltage drops to motors and other equipment down to the 120 V level to ensure that the loads will not experience voltage less than the minimum rated voltage. The maximum steady state output voltage of 7150 V ensures that, under lightly loaded conditions, motors and other equipment down to the 120 V level will not experience voltages more than the maximum rated voltage. The specified minimum and maximum frequencies of the DG are 58.8 Hz and 61.2 Hz, respectively. These values are equal to ± 2% of the 60 Hz nominal frequency and are derived from the recommendations given in Regulatory Guide 1.9 (Ref. 3).

Specific Surveillance Requirements may be modified by a Note stating to verify the requirements during MODES 3, 4, 5, 6 or with the core off-loaded. These notes neither approve nor prohibit testing in MODES 1 and 2; however, for testing that is performed in MODES 1 and 2 (e.g., for post work testing) the testing may not be credited to satisfy the SR. Only the testing performed in MODES 3, 4, 5, 6 or with core off-loaded can be credited to satisfy the SR. | 11

SR 3.8.1.1

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 buses and loads are connected to their preferred power source, and that appropriate independence of offsite circuits is maintained. The 7 day Frequency 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.

(continued)

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air

BASES

BACKGROUND

Each diesel generator (DG) is provided with a storage tank having a fuel oil capacity sufficient to operate that diesel for a period of 7 days while the DG is supplying maximum post loss of coolant accident load demand discussed in the FSAR, Section 9.5.4.1 (Ref. 1). The maximum load demand is calculated using the assumption that a minimum of any two DGs is available. This onsite fuel oil capacity is sufficient to operate the DGs for longer than the time to replenish the onsite supply from outside sources.

Fuel oil is transferred from storage tank to day tank by either of two transfer pumps associated with each storage tank. Redundancy of pumps and piping precludes the failure of one pump, or the rupture of any pipe, valve or tank to result in the loss of more than one DG. All outside tanks, pumps, and piping are located underground.

For proper operation of the standby DGs, it is necessary to ensure the proper quality of the fuel oil. Regulatory Guide 1.137 (Ref. 2) addresses the recommended fuel oil practices as supplemented by ANSI N195 (Ref. 3). The fuel oil properties governed by these SR are the water and sediment content, the kinematic viscosity, specific gravity (or API gravity), and impurity level.

The DG lubrication system is designed to provide sufficient lubrication to permit proper operation of its associated DG under all loading conditions. The system is required to circulate the lube oil to the diesel engine working surfaces and to remove excess heat generated by friction during operation. Each engine oil sump contains an inventory capable of supporting a minimum of 7 days of operation based on conservative lube oil consumption rate. | 9

Each DG has an air start system which is sized with adequate capacity for five successive start attempts on the DG without recharging the air start receiver(s).

(continued)

BASES (continued)

ACTIONS

The ACTIONS Table is modified by a Note indicating that separate Condition entry is allowed for each DG. This is acceptable, since the Required Actions for each Condition provide appropriate compensatory actions for each inoperable DG subsystem. Complying with the Required Actions for one inoperable DG subsystem may allow for continued operation, and subsequent inoperable DG subsystem(s) are governed by separate Condition entry and application of associated Required Actions.

A.1

In this Condition, the 7 day fuel oil supply for a DG is not available. However, the Condition is restricted to fuel oil level reductions that maintain at least a 6 day supply. These circumstances may be caused by events, such as full load operation required after an inadvertent start while at minimum required level, or feed and bleed operations, which may be necessitated by increasing particulate levels or any number of other oil quality degradations. This restriction allows sufficient time for obtaining the requisite replacement volume and performing the analyses required prior to addition of fuel oil to the tank. A period of 48 hours is considered sufficient to complete restoration of the required level prior to declaring the DG inoperable. This period is acceptable based on the remaining capacity (> 6 days), the fact that procedures will be initiated to obtain replenishment, and the low probability of an event during this brief period. The amount of fuel oil required during Modes 5 & 6 is less because fewer loads are required to maintain the plant during shutdown conditions.

B.1

With lube oil inventory less than a level 1.75 inches below the static low level mark on the lube oil dipstick, sufficient lubricating oil to support 7 days of continuous DG operation at full load conditions may not be available. However, the Condition is restricted to lube oil volume reductions that maintain greater than a level 5.5 inches below the static low level mark on the lube oil dipstick. This level ensures that if the engine starts, the run level is above where vortexing occurs and at least 48 hours of run time is available before lube oil addition is required. This restriction allows sufficient time to obtain the requisite replacement volume. A period of 48 hours is considered sufficient to complete restoration of the required volume prior to declaring the DG inoperable. This period is acceptable based on the remaining capacity, the low rate of usage, the fact that procedures will be initiated to obtain replenishment, and the low probability of an event during this brief period. | 9 | 9

(continued)

BASES

ACTIONS (continued)

C.1

This Condition is entered as a result of a failure to meet the acceptance criterion of SR 3.8.3.3. Normally, trending of particulate levels allows sufficient time to correct high particulate levels prior to reaching the limit of acceptability. Poor sample procedures (bottom sampling), contaminated sampling equipment, and errors in laboratory analysis can produce failures that do not follow a trend. Since the presence of particulates does not mean failure of the fuel oil to burn properly in the diesel engine, and particulate concentration is unlikely to change significantly between Surveillance Frequency intervals, and proper engine performance has been recently demonstrated (within 31 days), it is prudent to allow a brief period prior to declaring the associated DG inoperable. The 7 day Completion Time allows for further evaluation, resampling and re-analysis of the DG fuel oil.

D.1

With the new fuel oil properties defined in the Bases for SR 3.8.3.3 not within the required limits, a period of 30 days is allowed for restoring the stored fuel oil properties. This period provides sufficient time to test the stored fuel oil to determine that the new fuel oil, when mixed with previously stored fuel oil, remains acceptable, or to restore the stored fuel oil properties. This restoration may involve feed and bleed procedures, filtering, or combinations of these procedures. Even if a DG start and load was required during this time interval and the fuel oil properties were outside limits, there is a high likelihood that the DG would still be capable of performing its intended function.

(continued)

BASES

ACTIONS (continued)

E.1

With a Required Action and associated Completion Time not met, or one or more DG's fuel oil, lube oil, or starting air subsystem not within limits for reasons other than addressed by Conditions A through D, the associated DG may be incapable of performing its intended function and must be immediately declared inoperable.

SURVEILLANCE REQUIREMENTS

SR 3.8.3.1

This SR provides verification that there is an adequate inventory of fuel oil in the storage tanks to support each DG's operation for approximately 7 days at full load. A small volume in the day tank in excess of the day tank requirements is credited to ensure a full 7 day supply. The 7 day period is sufficient time to place the unit in a safe shutdown condition and to bring in replenishment fuel from an offsite location.

The 31 day Frequency is adequate to ensure that a sufficient supply of fuel oil is available, since low level alarms are provided and unit operators would be aware of any large uses of fuel oil during this period.

SR 3.8.3.2

The surveillance contains a note that states that it is required only when the engine has been in shutdown for > 10 hours. This allowance is required because the lube oil level drops when the engine is running and does not immediately return to static conditions. | 9

This Surveillance ensures that sufficient lube oil inventory is available to support at least 7 days of full load operation for each DG based on an engine lube oil consumption rate of 1.5 gallon per hour. The 1.75" below the low static level requirement is based on conservative DG consumption values. Implicit in this SR is the requirement to verify adequate inventory for 7 days of full load operation without the level reaching the manufacturer recommended minimum level. | 9

A 31 day Frequency is adequate to ensure that a sufficient lube oil supply is onsite, since DG starts and run time are closely monitored by the unit staff.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.3.3

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 D4057-1981 (Ref. 6);

b. Verify in accordance with the tests specified in ASTM D975-1981 (Ref. 6) that the sample has an absolute specific gravity at 60/60°F of $\geq$ 0.8348 and $\leq$ 0.8984, or an API gravity $\geq$ 26° and $\leq$ 38°, a kinematic viscosity at 40°C of $\geq$ 1.9 centistokes and $\leq$ 4.1 centistokes (alternately, Saybolt viscosity, SUS at 100°F of $\geq$ 32.6, but $\leq$ 40.1), and a flash point of $\geq$ 125°F; and | 7

c. Verify that the new fuel oil has a clear and bright appearance with proper color when tested in accordance with ASTM D4176-1982 (Ref. 6).

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.3.3 (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 D975-1981 (Ref. 7) are met for new fuel oil when tested in accordance with ASTM D975-1981 (Ref. 6), except that the analysis for sulfur may be performed in accordance with ASTM D1552-1979 (Ref. 6) or ASTM D2622-1982 (Ref. 6). 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 D2276-1978, Method A (Ref. 6). 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. For those designs in which the total stored fuel oil volume is contained in two or more interconnected tanks, each tank must be considered and tested separately.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.4.7 (continued)

The Surveillance Frequency of 18 months is consistent with the recommendations of Regulatory Guide 1.32 (Ref. 10) and Regulatory Guide 1.129 (Ref. 11), which state that the battery service test should be performed during refueling operations or at some other outage, with intervals between tests, not to exceed 18 months.

This SR is modified by two Notes. Note 1 allows the performance of a modified performance discharge test in lieu of a service test. | 3

The modified performance discharge test is a simulated duty cycle consisting of just two rates; the one minute rate published for the battery or the largest current load of the duty cycle, followed by the test rate employed for the performance test, both of which envelope the duty cycle of the service test. Since the ampere-hours removed by a rated one minute discharge represents a very small portion of the battery capacity, the test rate can be changed to that for the performance test without compromising the results of the performance discharge test. The battery terminal voltage for the modified performance discharge test should remain above the minimum battery terminal voltage specified in the battery service test for the duration of time equal to that of the service test.

A modified performance discharge test is a test of the battery capacity and its ability to provide a high rate, short duration load. This will confirm | 3
the battery's ability to meet the critical period of the load duty cycle, in addition to determining its percentage of rated capacity. Initial conditions for the modified performance discharge test will be identical to those | 3
specified for a service test and the test discharge rate will envelope the |
duty cycle of the service test if the modified performance discharge test is performed in lieu of a service test.

The SR is modified by Note 2. Note 2 says to verify the requirement during MODES 3, 4, 5, 6 or with the core off-loaded. This note does not prohibit the application of LCO 3.0.5 or the performance of this SR to restore equipment operability. Note 2 neither approves nor prohibits | 11
testing in MODES 1 and 2; however, for testing that is performed in |
MODES 1 and 2 (e.g., for post work testing) the testing may not be |
credited to satisfy the SR. Only the testing performed in MODES 3, 4, 5, |
6 or with core off-loaded can be credited to satisfy the SR. |

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.4.8

A battery performance discharge test is a test of constant current capacity of a battery, normally done in the as found condition, after having been in service, to detect any change in the capacity determined by the acceptance test. The test is intended to determine overall battery degradation due to age and usage.

A battery modified performance discharge test is described in the Bases for SR 3.8.4.7. Either the battery performance discharge test or the modified performance discharge test is acceptable for satisfying SR 3.8.4.8; however, only the modified performance discharge test may be used to satisfy SR 3.8.4.8 while satisfying the requirements of SR 3.8.4.7 at the same time.

The acceptance criteria for this Surveillance are consistent with IEEE-450 (Ref. 9) and IEEE-485 (Ref. 5). These references recommend that the battery be replaced if its capacity is below 80% of the manufacturer's rating. A capacity of 80% shows that the battery rate of deterioration is increasing, even if there is ample capacity to meet the load requirements.

The Surveillance Frequency for this test is normally 60 months. If the battery shows degradation, or if the battery has reached 85% of its expected life and capacity is < 100% of the manufacturer's rating, the Surveillance Frequency is reduced to 18 months. However, if the battery shows no degradation but has reached 85% of its expected life, the Surveillance Frequency is only reduced to 24 months for batteries that retain capacity ≥ 100% of the manufacturer's rating. Degradation is indicated, according to IEEE-450 (Ref. 9), when the battery capacity drops by more than 10% relative to its average capacity on the previous performance test or when it is ≥ 10% below the manufacturer's rating. This frequency is consistent with the recommendations in IEEE-450 (Ref. 9).

This SR is modified by a Note. This Note says to verify the requirement during MODES 3, 4, 5, 6 or with the core off-loaded. This note does not prohibit the application of LCO 3.0.5 or the performance of this SR to restore equipment operability. The Note neither approves nor prohibits testing in MODES 1 and 2; however, for testing that is performed in MODES 1 and 2 (e.g., for post work testing) the testing may not be credited to satisfy the SR. Only the testing performed in MODES 3, 4, 5, 6 or with core off-loaded can be credited to satisfy the SR. | 11

(continued)

BASES

LCO (continued)

containment ventilation penetrations and the personnel air locks. For the OPERABLE containment ventilation penetrations, this LCO ensures that these penetrations are isolable by the Containment Ventilation Isolation System. The OPERABILITY requirements for this LCO ensure that the automatic ventilation isolation valve closure function specified in the FSAR can be achieved and, therefore, meet the assumptions used in the safety analysis to ensure that releases through the valves are terminated, such that radiological doses are within the acceptance limit.

Both containment personnel air lock doors may be open during movement of irradiated fuel or CORE ALTERATION, provided an air lock door is capable of being closed and the water level in the refueling pool is maintained as required. Administrative controls ensure that: 1) appropriate personnel are aware of the open status of the containment during movement of irradiated fuel or CORE ALTERATIONS, 2) specified individuals are designated and readily available to close the air lock following an evacuation that would occur in the event of a fuel handling accident, and 3) any obstructions (e.g., cables and hoses) that would prevent rapid closure of an open air lock can be quickly removed.

The LCO is modified by a NOTE allowing penetration flow paths with direct access from the containment atmosphere to the outside atmosphere to be unisolated under administrative controls. Administrative controls ensure that 1) appropriate personnel are aware of the open status of the penetration flow path during CORE ALTERNATIONS or movement of irradiated fuel assemblies within containment, and 2) specified individuals are designated and readily available to isolate the flow path in the event of a fuel handling accident. | 11

APPLICABILITY

The containment penetration requirements are applicable during CORE ALTERATIONS or movement of irradiated fuel assemblies within containment because this is when there is a potential for a fuel handling accident. In MODES 1, 2, 3, and 4, containment penetration requirements are addressed by LCO 3.6.1. In MODES 5 and 6, when CORE ALTERATIONS or movement of irradiated fuel assemblies within containment are not being conducted, the potential for a fuel handling accident does not exist. Therefore, under these conditions no requirements are placed on containment penetration status.

(continued)

BASES

ACTIONS

A.1 and A.2

If the containment equipment hatch, air locks, or any containment penetration that provides direct access from the containment atmosphere to the outside atmosphere is not in the required status, including the containment ventilation isolation system not capable of automatic actuation when the isolation valves are open, the unit must be placed in a condition where the isolation function is not needed. This is accomplished by immediately suspending CORE ALTERATIONS and movement of irradiated fuel assemblies within containment. Performance of these actions shall not preclude completion of movement of a component to a safe position.

SURVEILLANCE REQUIREMENTS

SR 3.9.4.1

This Surveillance demonstrates that each of the containment penetrations required to be in its closed position is in that position. The Surveillance on the open isolation valves will demonstrate that the required valves are not blocked from closing. Also the Surveillance will demonstrate that each valve operator has motive power, which will ensure that each required valve is capable of being closed by an OPERABLE automatic containment ventilation isolation signal.

The Surveillance is performed every 7 days during CORE ALTERATIONS or movement of irradiated fuel assemblies within containment. The Surveillance interval is selected to be commensurate with the normal duration of time to complete fuel handling operations. A surveillance before the start of refueling operations will provide two or three surveillance verifications during the applicable period for this LCO. As such, this Surveillance ensures that a postulated fuel handling accident that releases fission product radioactivity within the containment will not result in a release of fission product radioactivity to the environment.

SR 3.9.4.2

This Surveillance demonstrates that each required containment ventilation valve actuates to its isolation position on manual initiation or on an actual or simulated high radiation signal from a containment

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COMANCHE PEAK ELECTRIC STATION UNITS 1 & 2
TECHNICAL SPECIFICATIONS BASES MANUAL

TS BASES EFFECTIVE PAGE LISTING

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Errata To Amendment 64 and Revision 1	None	July 28, 1999
Revision 2	None	July 29, 1999
Revision 3	A66	August 31, 1999
Revision 4	A67	September 29, 1999
Revision 5	A69, A70 & A71	September 30, 1999
Revision 6	A72	October 7, 1999
Revision 7	None	November 24, 1999
Revision 8	A73	December 30, 1999
Revision 9	A75 & A76	April 23, 2000
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