



Luminant

Rafael Flores
Senior Vice President
& Chief Nuclear Officer
rafael.flores@luminant.com

Luminant Power
P.O. Box 1002
6322 North FM 56
Glen Rose, TX 76043

T 254 897 5590
C 817 559 0403
F 254 897 6652

CP-201000211
TXX-10028

Ref: 10 CFR 50.90
File # 236

May 27, 2010

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

SUBJECT: COMANCHE PEAK NUCLEAR POWER PLANT (CPNPP)
DOCKET NOS. 50-445 AND 50-446,
LICENSE AMENDMENT REQUEST (LAR) 10-001, FOR ADOPTION OF TSTF
TRAVELER 501, REVISION 1, "RELOCATE STORED FUEL OIL AND LUBE OIL
VOLUME VALUES TO LICENSEE CONTROL"

Dear Sir or Madam:

In accordance with the provisions of Title 10 of the Code of Federal Regulations (10 CFR) 50.90, Luminant Power is submitting a request for an amendment to the Technical Specifications (TS) for Comanche Peak Nuclear Power Plant (CPNPP), Unit 1 Operating License (NPF-87) and Unit 2 Operating License (NPF-89).

The proposed changes revise TS 3.8.3, "Diesel Fuel Oil, Lube Oil, and Starting Air," by relocating the current stored diesel fuel oil and lube oil numerical volume requirements from the TS to the TS Bases so that it may be modified under licensee control. The TS is modified so that the stored diesel fuel oil and lube oil inventory will require that a 7-day supply be available for each diesel generator. Condition A and Condition B in the Action table are revised and Surveillance Requirements (SR) 3.8.3.1 and 3.8.3.2 are revised to reflect the above change. In addition, the reference to "Appendix B" of ANSI N195-1976, "Fuel Oil Systems for Standby Diesel-Generators," in the TS Bases is deleted. As a result, the only reference will be to ANSI N195-1976. The deletion of "Appendix B" of ANSI N195-1976 in the TS Bases is not required. ANSI N195-1976 and Regulatory Guide 1.137, Revision 1, "Fuel-Oil Systems for Standby Diesel Generators," are the current Bases references.

Regarding stored diesel fuel oil and lube oil, no changes to the current plant configuration, current numerical volumetric requirements, or current 7-day basis are proposed in this application; the proposal merely relocates the current numerical volumetric requirements from the TS to the TS Bases and relocates the associated current 7-day basis from the TS Bases to the TS. In addition, no changes to any SR Frequency, Required Actions, or Completion Times are proposed in this application.

The proposed changes are consistent with NRC-approved Revision 1 to Technical Specification Task Force (TSTF) Improved Standard Technical Specification Change Traveler-501, "Relocate Stored Fuel Oil and Lube Oil Volume Values to Licensee Control." The availability of this TS improvement was announced in the Federal Register on May 26, 2010 (75 FR 29588) as part of the consolidated line item improvement process (CLIIP). The approval of TSTF Traveler-501, Revision 1, was based, in part, on TSTF responses to NRC requests for additional information (RAI).

A member of the STARS (Strategic Teaming and Resource Sharing) Alliance

Callaway · Comanche Peak · Diablo Canyon · Palo Verde · San Onofre · South Texas Project · Wolf Creek

A001
NRK

The SR 3.8.3.1 Bases in TSTF Traveler-501, Revision 1, reference "ANSI N195-1976." At CPNPP, the current reference is ANSI N195-1976. This application does not propose to modify the current ANSI N195 reference.

TSTF Traveler-501, Revision 1, and the NRC staff's associated model safety evaluation published in the Federal Register, assume that the current licensing basis requires that a 7-day supply of stored diesel fuel oil and lube oil be available for "each" diesel generator. This is the current licensing basis for CPNPP.

Plant specific changes consistent with TSTF Traveler-501, Revision 1 are described in section 2 of Attachment 1.

Attachment 1 provides an evaluation of the proposed change. Attachment 2 provides the existing TS pages marked up to show the proposed change. Attachment 3 provides the proposed TS changes in final typed format. Attachment 4 provides the existing Bases pages marked up to show the proposed change.

Luminant Power requests approval of the proposed license amendment by October 1, 2010, with the amendment being implemented within 120 days. 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. However, CPNPP is currently receiving ultra low sulfur diesel (ULSD) fuel oil and this amendment may be elevated to an exigent amendment if the calculated stored fuel oil requirement for 7 days of operation exceeds the current TS Condition A upper limit of 86,000 gallons for Modes 1 to 4 or 75,000 gallons for Modes 5 and 6.

In accordance with 10CFR50.91(b), a copy of this application, with attachments, is being provided to the designated State of Texas Official.

If you should have any questions regarding this submittal, please contact Ms. Tamera J. Ervin-Walker at (254) 897-6902.

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

Executed on May 27, 2010.

Sincerely,

Luminant Generation Company, LLC

Rafael Flores

By: 
Fred W. Madden

TJEW

- Attachments
1. Evaluation of Proposed Changes
 2. Proposed Technical Specifications Changes (Mark-Up)
 3. Proposed Technical Specification Changes (Re-Typed)
 4. Proposed Technical Specifications Bases Changes (Mark-Up)

c - E. E. Collins, Region IV
G. D. Replogle, Region IV
Lauren Gibson, NRR
Resident Inspectors, CPNPP

Alice Hamilton Rogers, P.E.
Inspection Unit Manager
Texas Department of State Health Services
Mail Code 1986
P. O. Box 149347
Austin TX 78714-9347

ATTACHMENT 1 to TXX-10028
EVALUATION OF PROPOSED CHANGES

LICENSEE'S EVALUATION

1.0 DESCRIPTION

2.0 PROPOSED CHANGE

3.0 BACKGROUND

4.0 TECHNICAL ANALYSIS

5.0 REGULATORY ANALYSIS

5.1 No Significant Hazards Consideration

5.2 Applicable Regulatory Requirements/Criteria

6.0 ENVIRONMENTAL CONSIDERATION

7.0 REFERENCES

1.0 DESCRIPTION

The proposed changes revise Technical Specification (TS) 3.8.3, "Diesel Fuel Oil, Lube Oil, and Starting Air," by relocating the current stored diesel fuel oil and lube oil numerical volume requirements from the TS to the TS Bases so that it may be modified under licensee control. The TS are modified so that the stored diesel fuel oil and lube oil inventory will require that a 7-day supply be available for each diesel generator. This change is consistent with NRC approved Revision 1 to Technical Specification Task Force (TSTF) Improved Standard Technical Specification Change Traveler-501, "Relocate Stored Fuel Oil and Lube Oil Volume Values to Licensee Control." The availability of this TS improvement was announced in the Federal Register on May 26, 2010 (75 FR 29588) as part of the consolidated line item improvement process (CLIIP).

2.0 PROPOSED CHANGE

Consistent with the NRC-approved Revision 1 of TSTF Traveler-501, the proposed changes revise TS 3.8.3, "Diesel Fuel Oil, Lube Oil, and Starting Air," by relocating the current stored diesel fuel oil and lube oil numerical volume requirements from the TS to the TS Bases so that it may be modified under licensee control. The TS are modified so that the stored diesel fuel oil and lube oil inventory will require that a 7-day supply be available for each diesel generator. As a result:

- Condition A and Condition B in the Action table are revised. Currently, Condition A and Condition B are entered when the stored diesel fuel oil and lube oil numerical volume requirements are not met. As discussed in the current TS Bases, the numerical volume requirements in Condition A and Condition B are based on volumes less than a 7-day supply, but greater than a 6-day supply for fuel oil and, for lube oil, a 2-day supply. The revision relocates the volumetric requirements from the TS and places it in the TS Bases. The TS are modified so that Condition A and Condition B are entered when the stored diesel fuel oil and lube oil inventory is less than a 7-day supply, but greater than a 6-day supply for fuel oil and, for lube oil, a 2-day supply for one or more diesel generators.
- Surveillance Requirements (SR) 3.8.3.1 and 3.8.3.2 are revised. Currently, SR 3.8.3.1 and SR 3.8.3.2 verify that the stored diesel fuel oil and lube oil numerical volume requirements are met. As discussed in the current TS Bases, the numerical volume requirements in SR 3.8.3.1 and SR 3.8.3.2 are based on maintaining at least a 7-day supply. The revision relocates the volumetric requirements from the TS and places it in the TS Bases. The TS are modified so that SR 3.8.3.1 and SR 3.8.3.2 verify that the stored diesel fuel oil and lube oil inventory is greater than or equal to a 7-day supply for each diesel generator.
- The reference to "Appendix B" of ANSI N195-1976 in the TS Bases is deleted. As a result, the only reference will be to ANSI N195-1976.

Proposed revisions to the TS Bases are also included in this application. Adoption of the TS Bases associated with TSTF Traveler-501, Revision 1, is an integral part of implementing this TS amendment. The changes to the affected TS Bases pages will be incorporated in accordance with the TS Bases Control Program.

This application is being made in accordance with the CLIIP. Luminant Power is not proposing variations or deviations from the TS changes described in TSTF Traveler-501, Revision 1, or the NRC staff's model safety evaluation published on May 26, 2010 (75 FR 29588) as part of the CLIIP Notice of Availability.

The CPNPP plant specific values for TS 3.8.3 Conditions A and B, SRs 3.8.3.1 and 3.8.3.2, and the basis for the specific volumetric requirements for lube oil have been previously approved by the NRC. This proposed change request is consistent with TSTF-501 and makes no changes to the current plant configuration, current numerical volume requirements, or the basis of the proposed change request. This proposed change request merely relocates the current numerical volumetric requirements from the TS to the TS Bases and relocates the associated basis from the TS Bases to the TS. Therefore, this proposed change is consistent with TSTF-501 as approved by the NRC.

- CPNPP has plant specific values of the required fuel oil supply presented in TS 3.8.3 Condition A. These values are the Mode-dependent volumetric equivalents to a 6- and 7-day supply of stored fuel oil, respectively. TSTF-501 does not contain Mode-dependent volumetric requirements; however, the CPNPP Mode-dependent volumetric equivalents are based on 6 days and 7 days, which are consistent with TSTF-501. The CPNPP 6- and 7-day fuel oil volumetric equivalents for Modes 1 to 4 and Modes 5 and 6 were submitted to the NRC via letter TXX-95090 and approved and implemented as License Amendment (LA) 60/46 (ADAMS Accession Number ML021820176).
- CPNPP has plant specific values for the required lube oil supply which correspond to a 7- and 2-day supply versus the 7- and 6-day supply as stated in TSTF-501. In particular, the CPNPP TS, Condition B, specifies the lube oil requirements to be "less than a level 1.75" below the low static level but greater than a level 5.5" below the low static level" which corresponds to the 7- and 2-day supply requirements instead of the volumetric requirements specified in TSTF-501. The CPNPP-specific values were submitted to the NRC via letter TXX-97105 and approved and implemented through LA 64 (ADAMS Accession Number ML021820213), which also added Condition B for lube oil requirements. A subsequent revision to revise Condition B upper and lower lube oil values to the current values in TS was submitted via letter TXX-00011 and implemented as LA 75 (ADAMS Accession Number ML003699063).
- TSTF-501 specifies volumetric requirements for SR 3.8.3.1 and SR 3.8.3.2. However, the CPNPP plant specific values for SR 3.8.3.1 and SR 3.8.3.2 are consistent with the values used in TS Conditions A and B for a 7-day supply of fuel oil and lube oil, respectively, and were previously approved by the NRC as discussed above. The CPNPP plant specific values for the fuel oil supply specified in SR 3.8.3.1 and for the lube oil supply specified in SR 3.8.3.2 are consistent with TSTF-501 requirements.
- The CPNPP specific volumetric requirements for lube oil were originally based on the manufacturer's consumption values; however, the volumetric requirements have been refined over time based on actual plant data and engine performance. As approved in CPNPP TS License Amendment 75, the current lube oil volumetric requirements are based on the diesel generator lube oil consumption rate, avoidance of vortexing, static versus run lube oil level changes, and volume versus tank level data.

3.0 BACKGROUND

The background for this application is adequately addressed by the NRC Notice of Availability published on May 26, 2010 (75 FR 29588).

4.0 TECHNICAL ANALYSIS

Luminant Power has reviewed the model safety evaluation published on May 26, 2010 (75 FR 29588) as part of the CLIIP Notice of Availability. Luminant Power has concluded that the technical justifications presented in the model safety evaluation prepared by the NRC staff are applicable to CPNPP Units 1 and 2 and therefore justify this amendment for the incorporation of the proposed changes to the CPNPP TS.

5.0 REGULATORY ANALYSIS

5.1 No Significant Hazards Consideration

The proposed changes revise TS by relocating the current stored diesel fuel oil and lube oil numerical volume requirements from the TS to the TS Bases so that it may be modified under licensee control. The current numerical volume requirements are based on a 7-day supply. The TS is modified so that the stored diesel fuel oil and lube oil inventory will require that a 7-day supply be available for each diesel generator. As required by 10 CFR 50.92(c), an analysis of the issue of No Significant Hazards Consideration is presented below:

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

Response: No

The proposed change relocates the volume of diesel fuel oil and lube oil required to support 7-day operation of the onsite diesel generators, and the volume equivalent to a 6-day supply for fuel oil and, for lube oil, a 2 day supply to licensee control. The specific volume of fuel oil equivalent to a 7- and 6-day supply is calculated using the NRC-approved methodology described in Regulatory Guide 1.137, Revision 1, "Fuel-Oil Systems for Standby Diesel Generators" and ANSI N195 1976, "Fuel Oil Systems for Standby Diesel-Generators." The CPNPP specific volumetric requirements for lube oil were originally based on the manufacturer's consumption values; however, the volumetric requirements have been refined over time based on actual plant data and engine performance. As approved in CPNPP TS License Amendment 75, the current lube oil volumetric requirements are based on the diesel generator lube oil consumption rate, avoidance of vortexing, static versus run lube oil level changes, and volume versus tank level data. Therefore, this proposed change is consistent with TSTF-501 as approved by the NRC. Because the requirement to maintain a 7-day supply of diesel fuel oil and lube oil is not changed and is consistent with the assumptions in the accident analyses, and the actions taken when the volume of fuel oil and lube oil are less

than a 6-day and 2-day supply have not changed, neither the probability or the consequences of any accident previously evaluated will be affected. Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

Response: No

The change does not involve a physical alteration of the plant (i.e., no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. The change does not alter assumptions made in the safety analysis but ensures that the diesel generator operates as assumed in the accident analysis. The proposed change is consistent with the safety analysis assumptions. Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No

The proposed change relocates the volume of diesel fuel oil and lube oil required to support 7-day operation of the onsite diesel generators, and the volume equivalent to a 6- and 2- (for fuel oil and lube oil, respectively) day supply to licensee control. As the bases for the existing limits on diesel fuel oil and lube oil are not changed, no change is made to the accident analysis assumptions and no margin of safety is reduced as part of this change. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, Luminant Power concludes that the proposed change presents No Significant Hazards Consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "No Significant Hazards Consideration" is justified.

5.2 Applicable Regulatory Requirements/Criteria

Based on the above, Luminant Power concludes that the proposed change presents No Significant Hazards Consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "No Significant Hazards Consideration" is justified. A description of the proposed TS change and its relationship to applicable regulatory requirements was provided in the NRC Notice of Availability published on May 26, 2010 (75 FR 29588).

6.0 ENVIRONMENTAL CONSIDERATION

Luminant Power has reviewed the environmental evaluation included in the model safety evaluation published on May 26, 2010 (75 FR 29588) as part of the CLIP Notice of Availability. Luminant Power has concluded that the NRC staff's findings presented in that evaluation are applicable to Comanche Peak Nuclear Power Plant Units 1 and 2, and the evaluation is hereby incorporated by reference for this application.

7.0 REFERENCES

- 7.1 Federal Register Notice, Notice of Availability published on May 26, 2010 (75 FR 29588).
- 7.2 TSTF Traveler-501, Revision 1, "Relocate Stored Fuel Oil and Lube Oil Volume Values to Licensee Control." (ADAMS Accession No. ML090510686)
- 7.3 Response to NRC RAI dated May 5, 2008. (ADAMS Accession No. ML082620238)
- 7.4 Response to NRC RAI dated December 13, 2007. (ADAMS Accession No. ML080670151)
- 7.5 TSTF Traveler-501, Revision 0, "Relocate Stored Fuel Oil and Lube Oil Volume Values to Licensee Control." (ADAMS Accession No. ML072040102)

ATTACHMENT 2 to TXX-10028

PROPOSED TECHNICAL SPECIFICATION CHANGES (MARK-UP)

Pages 3.8-20
3.8-22

3.8 ELECTRICAL POWER SYSTEMS

3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air

LCO 3.8.3 The stored diesel fuel oil, lube oil, and starting air subsystem shall be within limits for each required diesel generator (DG).

APPLICABILITY: When associated DG is required to be OPERABLE.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. One or more DGs with fuel level between 74,600 and 86,000 gal in MODES 1-4 or between 65,600 and 75,000 in MODES 5 & 6 in storage tank.</p>	<p>A.1 Restore fuel oil level to within limits.</p> <p style="text-align: center;">← < a 7 day supply and > a 6 day supply</p>	<p>48 hours</p>
<p>B. One or more DGs with lube oil inventory less than a level 1.75" below the low static level but greater than a level 5.5" below the low static level of the lube oil dipstick.</p>	<p>B.1 Restore lube oil inventory to within limits.</p> <p style="text-align: center;">← < a 7 day supply and > a 2 day supply.</p>	<p>48 hours</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.3.1 Verify each fuel oil storage tank contains \geq 86,000 gal (MODES 1-4) or 75,000 gal (MODES 5 & 6) of fuel.	31 days
SR 3.8.3.2 -----NOTE----- Not required to be performed until the engine has been shutdown for > 10 hours. ----- Verify lubricating oil inventory is \geq a level 1.75" below the low static level on the lube oil dipstick.	a 7 day supply 31 days
SR 3.8.3.3 Verify fuel oil properties of new and stored fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program.	In accordance with the Diesel Fuel Oil Testing Program
SR 3.8.3.4 Verify each required DG air start receiver pressure is \geq 180 psig.	31 days
SR 3.8.3.5 Check for and remove accumulated water from each fuel oil storage tank.	31 days

①

ATTACHMENT 3 to TXX-10028

PROSED TECHINCAL SPECIFICATIONS CHANGES (RE-TYPED)

Pages 3.8-20
3.8-22

3.8 ELECTRICAL POWER SYSTEMS

3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air

LCO 3.8.3 The stored diesel fuel oil, lube oil, and starting air subsystem shall be within limits for each required diesel generator (DG).

APPLICABILITY: When associated DG is required to be OPERABLE.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more DGs with fuel level < a 7 day supply and > a 6 day supply in storage tank.	A.1 Restore fuel oil level to within limits.	48 hours
B. One or more DGs with lube oil inventory < a 7 day supply and > a 2 day supply.	B.1 Restore lube oil inventory to within limits.	48 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.3.1	Verify each fuel oil storage tank contains \geq a 7 day supply of fuel.	31 days
SR 3.8.3.2	-----NOTE----- Not required to be performed until the engine has been shutdown for > 10 hours. ----- Verify lubricating oil inventory is \geq a 7 day supply.	31 days
SR 3.8.3.3	Verify fuel oil properties of new and stored fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program.	In accordance with the Diesel Fuel Oil Testing Program
SR 3.8.3.4	Verify each required DG air start receiver pressure is \geq 180 psig.	31 days
SR 3.8.3.5	Check for and remove accumulated water from each fuel oil storage tank.	31 days

ATTACHMENT 4 to TXX-10028

PROPOSED TECHNICAL SPECIFICATIONS BASES (MARK-UP)

Pages	B 3.8-37
	B 3.8-39
	B 3.8-40
	B 3.8-41
	B 3.8-43
	INSERT

B 3.8 ELECTRICAL POWER SYSTEMS

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

BASES

and Regulatory Guide 1.137 (Ref. 2)

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.

S

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.

This supply is sufficient to allow the operator to replenish lube oil from outside sources.

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).

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident (DBA) and transient analyses in the FSAR, Chapter 6 (Ref. 4), and in the FSAR, Chapter 15 (Ref. 5), assume Engineered Safety Feature (ESF) systems are OPERABLE. The DGs are designed to provide sufficient capacity, capability, redundancy, and reliability to ensure the availability of necessary power to ESF systems so that fuel, Reactor Coolant System and containment design limits are not

(continued)

The fuel oil level equivalent to a 6 day supply is, for Modes 1 to 4, 74,600 gallons.

BASES

ACTIONS
(continued)

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.

In this Condition, the 7 day

B.1

The fuel oil level equivalents to a 7 day and 6 day supply in Modes 5 and 6 are 75,000 and 65,600 gallons, respectively.

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.

i.e.,

is

at least a 2 day supply.
The lube oil equivalent to a 2 day supply is

(>2 days)

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

(continued)

BASES

ACTIONS

C.1 (continued)

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.

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.

Insert A

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

(continued)

lube oil inventory equivalent to a 7 day supply is

BASES

SURVEILLANCE
REQUIREMENTSSR 3.8.3.2 (continued)

because the lube oil level drops when the engine is running and does not immediately return to static conditions.

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 and 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.

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.

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, and when added to the tank existing volume will maintain the tank volume absolute specific gravity range of ≥ 0.8348 and ≤ 0.8927 at 60/60°F or an API gravity range of $\geq 27^\circ$ and $\leq 38^\circ$ at 60°F. 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. Tests a through d 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 a through d 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 ≥ 0.8156 and ≤ 0.8927 or an API gravity at 60°F of $\geq 27^\circ$ and $\leq 42^\circ$ when tested in accordance with ASTM D1298-1980 (Ref. 6), a kinematic viscosity at 40°C of ≥ 1.9 centistokes and ≤ 4.1 centistokes, and a flash point of $\geq 125^\circ\text{F}$,
- c. Verify that the new fuel oil has a clear and bright appearance with proper color when tested in accordance with ASTM D4176-1982 or a

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.3.4 (continued)

This Surveillance ensures that, without the aid of the refill compressor, sufficient air start capacity for each DG is available. The receiver design requirements provide for a minimum of five engine start cycles without recharging. A start cycle is defined by the DG vendor, but usually is measured in terms of time (seconds of cranking) or engine cranking speed. The pressure specified in this SR is intended to reflect the lowest value at which one start can be accomplished.

The 31 day Frequency takes into account the capacity, capability, redundancy, and diversity of the AC sources and other indications available in the control room, including alarms, to alert the operator to below normal air start pressure.

SR 3.8.3.5

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 storage tanks once every 31 days 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, and contaminated fuel oil, and from 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 (Ref. 2). This SR is for preventive maintenance. The presence of water does not necessarily represent failure of this SR, provided the accumulated water is removed during performance of the Surveillance.

REFERENCES

1. FSAR, Section 9.5.4.1.
2. Regulatory Guide 1.137.
3. ANSI N195-1976, ~~Appendix B.~~
4. FSAR, Chapter 6.
5. FSAR, Chapter 15.

(continued)

INSERT

Insert A

The fuel oil level equivalent to a 7 day supply is 86,000 gallons when calculated in accordance with References 2 and 3. The required fuel storage volume is determined using the most limiting energy content of the stored fuel. Using the known correlation of diesel fuel oil absolute specific gravity or API gravity to energy content, the required diesel generator output, and the corresponding fuel consumption rate, the onsite fuel storage volume required for 7 days of operation can be determined. SR 3.8.3.3 requires new fuel to be tested to verify that the absolute specific gravity or API gravity is within the range assumed in the diesel fuel oil consumption calculations.