



**Mike Blevins**  
Senior Vice President &  
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Ref: 10CFR50.90

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CPSES-200501308  
Log # TXX-05115  
File # 00236

August 10, 2005

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) 05-003  
REVISION TO TECHNICAL SPECIFICATION (TS) 5.5.13, "DIESEL  
FUEL OIL TESTING PROGRAM"**

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 changes into the CPSES Unit 1 and 2 Technical Specifications (TS). This change request applies to both Units.

The proposed changes are based on the NRC-approved Technical Specifications Task Force Improved Standard Technical Specifications Change Traveler 374-A, Rev. 0, "Revision to TS 5.5.13 and associated TS Bases for Diesel Fuel Oil" (TSTF-374-A). The proposed changes are consistent with the wording in section 5.5.13 of NUREG-1431, Revision 3, "Standard Technical Specifications, Westinghouse Plants" (STS), since STS has already incorporated TSTF-374-A. The proposed changes revise TS 5.5.13, "Diesel Fuel Oil Testing Program," to relocate the specific American Society for Testing and Materials (ASTM) Standard reference from the Administrative Controls Section of Technical Specifications (TS) to a licensee-controlled document. The proposed changes also revise TS Bases 3.8.3, "Diesel Fuel Oil, Lube Oil, and Starting Air." The proposed changes revise the TS Bases to clarify that API gravity is tested in accordance with ASTM D1298-1980 and to provide additional methods for

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TXX-05115

Page 2 of 3

sulfur testing and for determining particulate concentrations. Additionally, the proposed changes will correct formatting and typographical errors in the TS and TS Bases.

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) pages marked-up to reflect the proposed changes. Attachment 3 provides proposed changes to the Technical Specification Bases for information only. These changes will be processed per CPSES site procedures. Attachment 4 provides retyped Technical Specification pages which incorporate the requested changes. Attachment 5 provides retyped Technical Specification Bases pages which incorporate the proposed changes.

TXU Power requests approval of the proposed License Amendment by August 1, 2006 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 Ms. Tamera J. Ervin at (254) 897-6902.

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

Executed on August 10, 2005

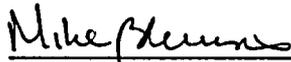
TXX-05115

Page 3 of 3

Sincerely,

TXU Generation Company LP

By: TXU Generation Management Company LLC  
Its General Partner



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Mike Blevins  
Senior Vice President and Chief Nuclear Officer

TJE

- Attachments
1. Description and Assessment
  2. Markup of Technical Specifications Pages
  3. Markup of Technical Specifications Bases Pages (for information)
  4. Retyped Technical Specification Pages
  5. Retyped Technical Specification Bases Pages (for information)

c - B. S. Mallett, Region IV  
M. C. Thadani, NRR  
Resident Inspectors, CPSES

Ms. Alice Rogers  
Bureau of Radiation Control  
Texas Department of Public Health  
1100 West 49th Street  
Austin, Texas 78756-3189

**ATTACHMENT 1 to TXX-05115**  
**DESCRIPTION AND ASSESSMENT**

## **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 PRECEDENTS
- 8.0 REFERENCES

## 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 changes into the CPSES Unit 1 and 2 Technical Specifications.

Proposed change LAR 05-003 is a request to revise Technical Specifications (TS) 5.5.13, "Diesel Fuel Oil Testing Program" for Comanche Peak Steam Electric Station (CPSES) Units 1 and 2. The proposed changes are based on the NRC-approved Technical Specifications Task Force Improved Standard Technical Specifications Change Traveler 374-A, Rev. 0, "Revision to TS 5.5.13 and associated TS Bases for Diesel Fuel Oil," (TSTF-374-A). The proposed changes will reflect the wording in section 5.5.13 of NUREG-1431, Revision 3, "Standard Technical Specifications, Westinghouse Plants" (STS), since STS has already incorporated TSTF-374-A. The proposed changes revise TS 5.5.13, "Diesel Fuel Oil Testing Program," to relocate the specific American Society for Testing and Materials (ASTM) Standard reference from the Administrative Controls Section of Technical Specifications (TS) to a licensee-controlled document. The proposed changes also revise the TS Bases for Surveillance Requirement (SR) 3.8.3, "Diesel Fuel Oil, Lube Oil, and Starting Air," to clarify that API gravity is tested in accordance with ASTM D1298-1980 and add additional ASTM references for analysis of sulfur content and particulate concentrations. The addition of alternate methodology for sulfur analysis and particulate determination provides the flexibility needed to use state-of-the-art technology in fuel sampling and analysis. Additionally, the proposed changes correct formatting and typographical errors currently in the TS and TS Bases.

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 TS changes will correct typographical errors in TS 5.5.13. Specifically, TS 5.5.13.a.1 and 5.5.13.a.2 will be revised by capitalizing the first letter of each section. The first letter in TS 5.5.13.a.3 will be capitalized, the semi-colon after "color" will be deleted, and the word "a" will be inserted between the words "or" and "water." Furthermore, the existing words in TS 5.5.13.b will be replaced with the wording in the STS to provide consistency with STS. Additionally, the proposed changes will relocate the American Society for Testing and Materials (ASTM) Standard, D-2276 1978, Method A, from TS 5.5.13.c to a licensee-controlled document, specifically the TS Bases. Finally, the proposed changes will revise TS 5.5.13.d to correct a formatting error; therefore, the section notation "d" will be deleted and the sentence will become a new paragraph.

Since STS has already incorporated TSTF-374-A, the proposed changes to the TS Bases will be consistent with the wording in STS with the exception that limits for specific gravity will not change and the existing ASTM Standard (D2276-1978, Method A) for determining particulate concentrations will not be removed. The proposed changes in the TS Bases description for SR 3.8.3.3.b will revise API gravity limits from " $\geq 26$  and  $\leq 38^\circ$ " to " $\geq 27^\circ$  and  $\leq 39^\circ$ " and correct the missing degree notation from the lower limit. Further, the proposed changes clarify that the API gravity test is in accordance with ASTM D1298-1980. Also, the proposed changes correct the missing degree notation in the kinematic viscosity and remove the reference to Saybolt viscosity, "(alternately, Saybolt viscosity, SUS at 100°F of  $\geq 32.6$ , but  $\leq 40.1$ ).". Moreover, the proposed changes replace the words in SR 3.8.3.3.c with the words in STS. Also, the proposed changes add ASTM D4294-2003 for sulfur testing and ASTM D5452-2000 for determining particulate concentrations. Lastly, the proposed changes add three ASTM Standards, D1298-1980, D4294-2003, and D5452-2000, to reference 6 and the revision year to the ASTM Standard D975 in reference 7 in the References listed in the TS Bases 3.8.3.

In summary, the proposed changes are consistent with STS, since STS has already incorporated TSTF-374-A. The proposed changes revise TS 5.5.13, "Diesel Fuel Oil Testing Program," to relocate the specific American Society for Testing and Materials (ASTM) Standard reference from the Administrative Controls Section of Technical Specification (TS) to a licensee-controlled document. The proposed changes also revise the TS Bases 3.8.3, "Diesel Fuel Oil, Lube Oil, and Starting Air" to clarify API gravity is tested in accordance with ASTM D1298-1980 and to provide an additional method for sulfur testing and for determining particulate concentrations. Additionally, the proposed changes will correct formatting and typographical errors in the TS and TS Bases.

### **3.0 BACKGROUND**

The requirements outlined in TS 5.5.13 ensure that the sampling and testing requirements as well as acceptance criteria for new and stored fuel oil will be in accordance with applicable ASTM Standards. These tests are a means of determining whether new fuel oil is of the appropriate grade (i.e., proper fuel oil quality) and has not been contaminated with substances that would have an immediate, detrimental impact on diesel engine combustion.

Specifically, the Diesel Fuel Oil Testing Program establishes acceptability limits for new fuel oil prior to its addition to the storage tanks. Acceptability limits apply to API gravity or absolute specific gravity, a flash point and kinematic viscosity, a clear and bright appearance with proper color, or water and sediment content. With the exception of those properties mentioned above, other new fuel oil properties are verified to be within limits for ASTM 2D fuel oil within 31 days following addition of the new fuel oil to the storage

tanks. Additionally, the program requires that total particulate concentration of the fuel oil be  $\leq 10$  mg/l when tested every 31 days.

The proposed TS and TS Bases changes will continue to ensure the quality of both new fuel oil and stored fuel oil designated for use in the Emergency Diesel Generators (DGs).

Consequently, the proposed changes are consistent with the STS, since STS has already incorporated TSTF-374-A. Consistency is provided by relocating the ASTM Standard in TS 5.5.13.c to a licensee-controlled document, correcting formatting and typographical errors, and adding additional ASTM Standards to test diesel fuel oil.

#### 4.0 TECHNICAL ANALYSIS

The initial conditions of Design Basis Accident (DBA) and transient analyses assume Engineered Safety Feature (ESF) systems are operable. The Emergency Diesel Generators (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 exceeded. For proper operation of the DGs, it is necessary to ensure the proper quality of the fuel oil. The DG fuel oil properties governed by TS 5.5.13 are the API gravity or specific gravity, the flash point and kinematic viscosity, a clear and bright appearance or a water and sediment content, other properties, and particulate level.

The Diesel Fuel Oil Testing Program requires fuel oil testing to be performed in accordance with applicable ASTM Standards. The ASTM develops and promulgates standards for sampling and analysis of fuel oils in the form of ASTM Standards, which are universally accepted throughout the United States as the best available practices to assure an acceptably low level of impurities and contaminants in fuel oil. Implementing the required testing specified in the Diesel Fuel Oil Program and the proposed TS and Bases changes will continue to ensure the use of applicable ASTM Standards to evaluate the quality of both new fuel oil and stored fuel oil designated for use in the DGs. The TS will continue to assure that the applicable ASTM Standards are used.

The proposed changes to TS 5.5.13.a and TS 5.5.13.d will correct formatting and typographical errors. The proposed change to TS 5.5.13.b provides consistency with the STS. The proposed changes to TS 5.5.13.c relocate ASTM D2276-1978 to a licensee-controlled document, specifically TS Bases for SR 3.8.3.3. Since relocating the specific ASTM Standard for allowable particulate concentration in fuel from TS 5.5.13.c to a licensee-controlled document will not affect the fuel oil properties, the operability of the DGs will be maintained. In addition, referencing ASTM Standards in the TS is not required by 10 CFR 50.36, but the actual value of allowable particulate concentration in fuel required by 10 CFR 50.36(c) remains in TS 5.5.13.c. Changes to the licensee-controlled document are performed in accordance with the provisions of 10 CFR 50.59,

"Changes, tests, and experiments." Thus, adequate control over changes to the licensee-controlled document (i.e., changes to the applicable ASTM Standards) exists to allow relocation of the specific ASTM Standard references to a licensee-controlled document.

Since STS has already incorporated TSTF-374-A, the proposed changes to the TS Bases will be consistent with the wording in STS except that the existing limits for specific gravity will remain unchanged and the existing ASTM Standard (D2276-1978, Method A) for determining particulate concentrations will not be removed. Specifically in SR 3.8.3.3.b, TSTF-374-A has the limits for specific gravity at " $\geq 0.83$  and  $\leq 0.89$ ," while the current CPSES licensing bases limits for specific gravity are given to the fourth decimal place ( $\geq 0.8348$  and  $\leq 0.8984$ ) as required by ASTM D1298-1980. Consequently, the current CPSES licensing basis for specific gravity will be retained. Additionally, TSTF-374-A states, "ASTM D5452 supersedes ASTM D2276" for the determination of particulate concentrations. Conversely, ASTM D2276-1978, Method A, is still an industry approved appropriate methodology and therefore, the proposed changes in TS Bases SR 3.8.3.3 discussion of particulate concentrations will retain ASTM D2276-1978, Method A, and add ASTM 5452-2000 to allow the use of either method. The additional ASTM Standard provides the flexibility needed to use state-of-the-art technology in fuel sampling and analysis. Therefore, the proposed changes will assure that the required quality and quantity of DG fuel oil is maintained.

The proposed changes in SR 3.8.3.3.b revise API gravity limits from " $\geq 26$  and  $\leq 38$ " to " $\geq 27$  and  $\leq 39$ ." This shift in API gravity limit to a slightly higher density requirement will be consistent with STS and is more conservative than the existing limit because the API gravity requirement will marginally move away from the kerosene specific gravity. The proposed changes clarify that the API gravity is tested in accordance with ASTM D1298-1980 and also corrects the missing degree notation in the kinematic viscosity. To remain consistent with STS, the proposed changes remove the reference to Saybolt viscosity, "(alternately, Saybolt viscosity, SUS at 100°F of  $\geq 32.6$ , but  $\leq 40.1$ )." Since the TS Bases says, "...the fuel oil is analyzed to establish that other properties specified in Table 1 of ASTM D975-1981 (Ref. 7) are met..." and Saybolt is one of the other properties contained in Table 1 of D975-1981, the reference to Saybolt is unnecessarily redundant and is justifiably removed. Therefore, the proposed changes will assure that required quality and quantity of DG fuel oil is maintained.

The proposed changes replace the words in SR 3.8.3.3.c with the words in STS for consistency. Note that STS SR 3.8.3.3.c does not include the words, "...or verify that the new diesel fuel contains  $\leq 0.05$  volume % water and sediment..." Since these properties are tested in accordance with ASTM D1796-1968 and the water and sediment requirements are currently in ASTM D1796-1968, omitting these words in SR 3.8.3.3.c is justified. Therefore, the proposed changes will assure that required quality and quantity of DG fuel oil is maintained.

Also, the proposed changes add an additional ASTM Standard, D4294-2003, for sulfur testing which will provide the flexibility needed to use state-of-the-art technology in fuel sampling and analysis.

Lastly, the proposed changes add three ASTM Standards, D1298-1980, D4294-2003, and D5452-2000, to reference 6 and the revision year to the ASTM Standard D975 to reference 7 in the Reference section for TS Bases 3.8.3. The proposed changes are consistent with the wording in section 5.5.13 of NUREG-1431, Revision 3, "Standard Technical Specifications, Westinghouse Plants" (STS), since STS has already incorporated TSTF-374-A. These proposed changes are administrative in nature. The required quality and quantity of DG fuel oil will not change.

Since the proposed TS and TS Bases changes will continue to ensure the quality of both new fuel oil and stored fuel oil designated for use in DGs, the operability of the DGs will be unaffected.

## **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 changes relocate the specific American Society for Testing and Materials (ASTM) Standard references from the Administrative Controls of TS to a licensee-controlled document. Since any change to the licensee-controlled document will be evaluated pursuant to the requirements of 10 CFR 50.59, "Changes, tests and experiments," no increase in the probability or consequences of an accident previously evaluated is involved.

The proposed changes do 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 changes do 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 changes do not affect the source term, containment isolation, or radiological release assumptions used in evaluating the radiological consequences of an accident previously evaluated. Further, the proposed changes do not increase individual or cumulative occupational or public radiation exposure.

Therefore, the proposed changes do 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 changes do not involve a physical alteration of the plant (i.e., no new or different type of equipment will be installed) or change in the methods governing normal plant operation. In addition, the changes do not alter the assumptions made in the analysis and licensing basis.

Therefore, the proposed changes do 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 level of safety of facility operation is unaffected by the proposed changes since there is no change in the intent of the TS requirements of assuring fuel oil is of the appropriate quality for emergency DG use. The proposed changes provide the flexibility needed to utilize state-of-the-art technology in fuel oil sampling and analysis methods.

Therefore the proposed changes do 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

General Design Criterion 17, "Electric Power Systems," of Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," requires that an onsite electric

power system and an offsite electric power system be provided to permit functioning of structures, systems, and components important to safety. In addition, Criterion 17 contains requirements concerning system capacity, capability, independence, redundancy, availability, testability, and reliability.

Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to 10 CFR Part 50 establishes overall quality assurance requirements for the design, construction, and operation of structures, systems, and components important to safety.

There will be no changes to the Diesel Fuel Oil Testing Program 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 changes meet 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 changes is not required.

## **7.0. PRECEDENTS**

7.1 Prior to NRC approval of TSTF-374-A, information similar to that provided in TSTS-374 was used in a license amendment request which was subsequently approved on June 13, 2001 for Byron and Braidwood (ML011650363). The Byron and Braidwood amendment relocated the ASTM Standard D2276 from their TS 5.5.13.c to their Technical Requirements Manual (TRM), a licensee-controlled document, as opposed to their TS Bases, also a licensee-controlled document.

- 7.2 Based on the (NRC) unapproved TSTF-374, similar license amendments were approved for Catawba (ML031910598) and McGuire (ML031910756) on July 10, 2003.

## 8.0 REFERENCES

- 8.1 Industry/TSTF Standard Technical Specification Change Traveler TSTF-374-A, Revision 0, "Revision to TS 5.5.13 and associated TS Bases for Diesel Fuel Oil."
- 8.2 NUREG-1431, Revision 3.0, "Standard Technical Specifications, Westinghouse Plant," March 2004.
- 8.3 USNRC Regulatory Guide 1.137, Revision 1, "Fuel-Oil Systems for Standby Diesel Generators."
- 8.4 ANSI N195-1976, "Fuel Oil Systems for Standby Diesel Generators."
- 8.5 Byron Station, Units 1 and 2 License Amendment 122, Dockets 50-454 and 50-455 and Braidwood Station, Units 1 and 2 License Amendment 116, Dockets 50-456 and 50-457, "Request for Technical Specifications Change – Relocation of ASTM Reference Related to Diesel Fuel Oil Testing," dated June 13, 2001.
- 8.6 Catawba Nuclear Station, Units 1 and 2 Amendment 200, Dockets 50-413 and 50-414, "Issuance of Amendments," dated July 10, 2003.
- 8.7 McGuire Nuclear Station, Units 1 and 2 Amendment 215, Dockets 50-413 and 50-414, "Issuance of Amendments," dated July 10, 2003.

**ATTACHMENT 2 to TXX-05115**

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

**Pages 5.0-24  
INSERT**

5.5 Programs and Manuals (continued)

5.5.13 Diesel Fuel Oil Testing Program

A diesel fuel oil testing program to implement required testing of both new fuel oil and stored fuel oil shall be established. The program shall include sampling and testing requirements, and acceptance criteria, all in accordance with applicable ASTM Standards. The purpose of the program is to establish the following:

INSERT "A"

a. Acceptability of new fuel oil for use prior to addition to storage tanks by determining that the fuel oil has:

1. API gravity or an absolute specific gravity within limits,
2. flash point and kinematic viscosity within limits for ASTM 2D fuel oil, and
3. clear and bright appearance with proper color, water and sediment content within limits.

INSERT "a"

INSERT A

b. Other properties for ASTM 2D fuel oil are within limits within 31 days following sampling and addition to storage tanks; and

c. Total particulate concentration of the fuel oil is  $\leq 10$  mg/l when tested every 31 days in accordance with ASTM D-2276 1978, Method A

d. The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Diesel Fuel Oil Testing Program.

(continued)

INSERT

INSERT A

Within 31 days following addition of the new fuel oil to the storage tanks, verify that the properties of the new fuel oil, other than those addressed in a., above, are within limits for ASTM 2D fuel oil, and

**ATTACHMENT 3 to TXX-05115**

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

**Pages** B 3.8-43  
B 3.8-44  
B 3.8-46  
INSERTS

**BASES**

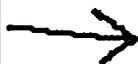
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**SURVEILLANCE REQUIREMENTS**      SR 3.8.3.3

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);

INSERT A



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  $\leq 38^\circ$ , a kinematic viscosity at 40C 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  $\geq 125^\circ\text{F}$ ; and

7

INSERT B



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) or verify that the new diesel fuel contains  $\leq 0.05$  volume% water and sediment when tested in accordance with ASTM D 1796 - 1968.

16

(continued)

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**BASES**

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**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.

INSERT ";

INSERT C

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.

INSERT D

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.

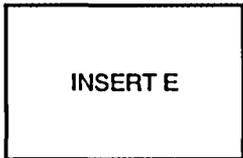
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BASES (continued)

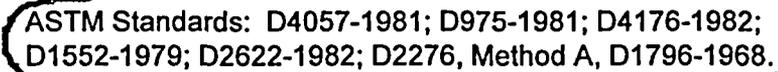
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- REFERENCES
1. FSAR, Section 9.5.4.1.
  2. Regulatory Guide 1.137.
  3. ANSI N195-1976, Appendix B.
  4. FSAR, Chapter 6.
  5. FSAR, Chapter 15.
  6. ASTM Standards: D4057-1981; D975-1981; D4176-1982; D1552-1979; D2622-1982; D2276, Method A, D1796-1968.
  7. ASTM Standards, D975, Table 1.

INSERT E



ASTM Standards: D4057-1981; D975-1981; D4176-1982; D1552-1979; D2622-1982; D2276, Method A, D1796-1968.



16

INSERT F



## INSERTS

### INSERT A

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 at 60°F of  $\geq 27^\circ$  and  $\leq 39^\circ$  when tested in accordance with ASTM D1298-1980 (Ref. 6), a kinematic viscosity at 40°C of  $\geq 1.9$  centistokes and  $\leq 4.1$  centistokes, and a flash point of  $\geq 125^\circ\text{F}$ , and

### INSERT B

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 water and sediment content within limits when tested in accordance with ASTM D1796-1968 (Ref. 6).

### INSERT C

, or ASTM D4294-2003

### INSERT D

, or D5452-2000

### INSERT E

ASTM Standards: D4057-1981; D975-1981; D1298-1980; D4176-1982; D1796-1968; D1552-1979; D2622-1982; D4294-2003; D2276-1978, Method A; D5452-2000.

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**ATTACHMENT 4 to TXX-05115**  
**RETYPE TECHNICAL SPECIFICATION PAGES**

**Page 5.0-24**

5.5 Programs and Manuals (continued)

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5.5.13 Diesel Fuel Oil Testing Program

A diesel fuel oil testing program to implement required testing of both new fuel oil and stored fuel oil shall be established. The program shall include sampling and testing requirements, and acceptance criteria, all in accordance with applicable ASTM Standards. The purpose of the program is to establish the following:

- a. Acceptability of new fuel oil for use prior to addition to storage tanks by determining that the fuel oil has:
  - 1. An API gravity or an absolute specific gravity within limits,
  - 2. A flash point and kinematic viscosity within limits for ASTM 2D fuel oil, and
  - 3. A clear and bright appearance with proper color or a water and sediment content within limits.
- b. Within 31 days following addition of the new fuel oil to the storage tanks, verify that the properties of the new fuel oil, other than those addressed in a., above, are within limits for ASTM 2D fuel oil, and
- c. Total particulate concentration of the fuel oil is  $\leq 10$  mg/l when tested every 31 days.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Diesel Fuel Oil Testing Program.

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(continued)

**ATTACHMENT 5 to TXX-05115**

**RETYPE TECHNICAL SPECIFICATION BASES PAGES**

**Pages** B 3.8-43  
B 3.8-44  
B 3.8-46

**BASES**

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**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 at 60°F of  $\geq 27^\circ$  and  $\leq 39^\circ$  when tested in accordance with ASTM D1298-1980 (Ref. 6), a kinematic viscosity at 40°C of  $\geq 1.9$  centistokes and  $\leq 4.1$  centistokes, and a flash point of  $\geq 125^\circ\text{F}$ , and
- 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 water and sediment content within limits when tested in accordance with ASTM D1796-1968 (Ref. 6).

(continued)

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**BASES**

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**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), ASTM D2622-1982, or ASTM D4294-2003 (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, or D5452-2000 (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.

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**BASES (continued)**

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- 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.
  6. ASTM Standards: D4057-1981; D975-1981; D1298-1980; D4176-1982; D1796-1968; D1552-1979; D2622-1982; D4294-2003; D2276-1978, Method A; D5452-2000.
  7. ASTM Standards, D975-1981, Table 1.
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