

RS-00-108

November 30, 2000

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

Braidwood Station, Units 1 and 2  
Facility Operating License Nos. NPF-72 and NPF-77  
NRC Docket Nos. STN 50-456 and STN 50-457

Byron Station, Units 1 and 2  
Facility Operating License Nos. NPF-37 and NPF-66  
NRC Docket Nos. STN 50-454 and STN 50-455

Subject: Request for Technical Specifications Change  
Relocation of American Society for Testing and Materials Standard Reference  
Related to Diesel Fuel Oil Testing

- References:
1. R. M. Pulsifer (U. S. NRC) to T. C. Feigenbaum (North Atlantic Energy Service Corp.), "Seabrook Station, Unit No. 1: Issuance of Amendment Re: Diesel Fuel Oil Surveillance Requirements," dated June 27, 2000.
  2. G. F. Wunder (U. S. NRC) to J. L. Skolds (South Carolina Electric & Gas Company), "Issuance of Amendment No. 121 to Facility Operating License No. NPF-12 Regarding Alternative Testing of Emergency Diesel Generators - Virgil C. Summer Nuclear Station, Unit No. 1," dated November 29, 1994.

A001

In accordance with 10 CFR 50.90, "Application for amendment of license or construction permit," we are proposing changes to the Technical Specifications (TS) of Facility Operating License Nos. NPF-72, NPF-77, NPF-37 and NPF-66, for the Braidwood Station, Units 1 and 2, and the Byron Station, Units 1 and 2, respectively. 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 TS to a licensee-controlled document, i.e., the Diesel Fuel Oil Program in the Technical Requirements Manual (TRM). In addition, the "clear and bright" test used to establish the acceptability of new fuel oil for use prior to addition to storage tanks has been expanded to allow a water and sediment content test to be performed to establish the acceptability of new fuel oil in lieu of the "clear and bright" test. The proposed changes are consistent with the changes previously approved by the NRC for the Seabrook Station and the Virgil C. Summer Station as documented in References 1 and 2, respectively. Additionally, the proposed changes are consistent with the changes being proposed in the Westinghouse Owners Group (WOG) Standard Technical Specification Change Traveler, WOG-146, Revision 2. The proposed WOG Standard Technical Specification Change Traveler, WOG-146, Revision 2, is enclosed for NRC reference as Attachment E.

We request approval of the proposed changes prior to May 30, 2001.

This request is subdivided as follows.

1. Attachment A gives a description and safety analysis of the proposed changes.
2. Attachments B-1 and B-2 include the marked-up TS page for the proposed changes for the Braidwood Station and the Byron Station, respectively. Attachments B-3 and B-4 include the associated TS page with the proposed changes incorporated for the Braidwood Station and the Byron Station, respectively.
3. Attachment C describes our evaluation performed using the criteria in 10 CFR 50.91(a)(1), "Notice for public comment," which provides information supporting a finding of no significant hazards consideration using the standards in 10 CFR 50.92(c), "Issuance of amendment."
4. Attachment D provides information supporting an environmental assessment and a finding that the proposed changes satisfy the criteria for a categorical exclusion.
5. Attachment E provides the proposed WOG Standard Technical Specification Change Traveler, WOG-146, Revision 2.

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The proposed changes have been reviewed by the Braidwood Station and the Byron Station Plant Operations Review Committees and the Nuclear Safety Review Boards in accordance with the Quality Assurance Program.

Commonwealth Edison Company is notifying the State of Illinois of this application for changes to the TS by transmitting a copy of this letter and its attachments to the designated State Official.

Should you have any questions concerning this letter, please contact Ms. Kelly M. Root at (630) 663-7292.

Respectfully,



R. M. Krich  
Director - Licensing  
Mid-West Regional Operating Group

Affidavit

Attachments:

- Attachment A: Description and Safety Analysis of the Proposed Changes
- Attachment B-1: Marked-Up TS Page for Proposed Changes for Braidwood Station
- Attachment B-2: Marked-Up TS Page for Proposed Changes for Byron Station
- Attachment B-3: Incorporated TS Page for Proposed Changes for Braidwood Station
- Attachment B-4: Incorporated TS Page for Proposed Changes for Byron Station
- Attachment C: Information Supporting a Finding of No Significant Hazards Consideration
- Attachment D: Information Supporting an Environmental Assessment
- Attachment E: Proposed Westinghouse Owners Group (WOG) Standard Technical Specification Change Traveler, WOG-146, Revision 2.

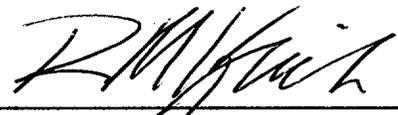
cc: Regional Administrator - NRC Region III  
NRC Senior Resident Inspector - Braidwood Station  
NRC Senior Resident Inspector - Byron Station  
Office of Nuclear Facility Safety - Illinois Department of Nuclear Safety

STATE OF ILLINOIS )  
COUNTY OF DUPAGE )  
IN THE MATTER OF )  
COMMONWEALTH EDISON (COMED) COMPANY ) Docket Nos.  
BRAIDWOOD STATION - UNITS 1 and 2 ) STN 50-456 and STN 50-457  
BYRON STATION - UNITS 1 and 2 ) STN 50-454 and STN 50-455

SUBJECT: Request for Technical Specifications Change  
Relocation of American Society for Testing and Materials Standard  
Reference Related to Diesel Fuel Oil Testing

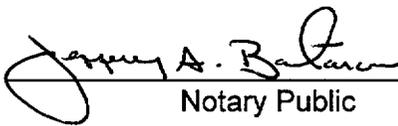
**AFFIDAVIT**

I affirm that the content of this transmittal is true and correct to the best of my knowledge, information and belief.

  
\_\_\_\_\_  
R. M. Krich  
Director - Licensing  
Mid-West Regional Operating Group

Subscribed and sworn to before me, a Notary Public in and  
for the State above named, this 30 day of  
November, 2000.



  
\_\_\_\_\_  
Notary Public

( OFFICIAL SEAL )

## ATTACHMENT A

### DESCRIPTION AND SAFETY ANALYSIS OF THE PROPOSED CHANGES

#### A. SUMMARY OF PROPOSED CHANGES

In accordance with 10 CFR 50.90, "Application for amendment of license or construction permit," we are proposing changes to the Technical Specifications (TS) of Facility Operating License Nos. NPF-72, NPF-77, NPF-37 and NPF-66, for the Braidwood Station, Units 1 and 2, and the Byron Station, Units 1 and 2, respectively. 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 TS to a licensee-controlled document, i.e., the Diesel Fuel Oil Program in the Technical Requirements Manual (TRM). The Braidwood Station and the Byron Station TRM is incorporated by reference in the Updated Final Safety Analysis Report (UFSAR). In addition, the "clear and bright" test used to establish the acceptability of new fuel oil for use prior to addition to storage tanks has been expanded to allow a water and sediment content test to be performed to establish the acceptability of new fuel oil in lieu of the "clear and bright" test.

The proposed changes are consistent with the changes previously approved by the NRC for the Seabrook Station and the Virgil C. Summer Station as documented in References 1 and 2, respectively. Additionally, the proposed changes are consistent with the changes being proposed in the Westinghouse Owners Group (WOG) Standard Technical Specification Change Traveler, WOG-146, Revision 2 (Ref. 3). The proposed WOG Standard Technical Specification Change Traveler, WOG-146, Revision 2, is enclosed for NRC reference as Attachment E.

#### B. DESCRIPTION OF THE CURRENT REQUIREMENTS

TS 5.5.13 implements required testing of both new fuel oil and stored fuel oil. The Diesel Fuel Oil Testing Program includes sampling and testing requirements, and acceptance criteria, all in accordance with applicable ASTM Standards.

TS 5.5.13.a.3 requires performance of the "clear and bright" test, which is used to establish the acceptability of new fuel oil for use prior to addition to storage tanks. ASTM D4176-93, "Standard Test Method for Free Water and Particulate Contamination in Distillate Fuels (Visual Inspection Procedures)," verifies that the new fuel oil has a clear and bright appearance with proper color. The "clear and bright" test is only applicable to fuel oils that meet the ASTM D4176 color rating requirements (i.e., an ASTM D1500, "Test Method for ASTM Color of Petroleum Products (ASTM Color Scale)," color rating of five or less).

TS 5.5.13.c verifies that the total particulate concentration of the fuel oil is  $\leq 10$  mg/l when tested every 31 days in accordance with ASTM D-2276, "Test Methods for Particulate Contaminant in Aviation Turbine Fuels," Method A-2 or A-3.

### **C. BASES FOR THE CURRENT REQUIREMENTS**

The tests of fuel oil are a means of determining whether new fuel oil is of the appropriate grade (i.e., proper fuel oil quality) and of assuring it has not been contaminated with substances that would have an immediate, detrimental impact on diesel engine combustion.

The purpose of the Diesel Fuel Oil Program is to establish the following.

- Acceptability of new fuel oil for use prior to addition to storage tanks;
- Other properties of new fuel oil are within limits within 30 days following sampling and addition to storage tanks; and
- Total particulate concentration of the fuel oil is  $\leq 10$  mg/l when tested every 31 days in accordance with ASTM D-2276, Method A-2 or A-3.

### **D. NEED FOR REVISION OF THE REQUIREMENT**

The proposed changes revise TS 5.5.13.c to relocate the specific ASTM Standard reference from the Administrative Controls Section of TS to a licensee-controlled document, i.e., the Diesel Fuel Oil Program in the TRM. In addition, the "clear and bright" test used to establish the acceptability of new fuel oil for use prior to addition to storage tanks (i.e., TS 5.5.13.a.3) has been expanded to allow a water and sediment content test to be performed to establish the acceptability of new fuel oil in lieu of the "clear and bright" test.

The proposed changes to TS 5.5.13.c will provide the Braidwood Station and the Byron Station the flexibility to maintain the capability to implement the required testing of both new fuel oil and stored fuel oil, including sampling and testing requirements, in accordance with applicable ASTM Standards whenever there are changes in the United States Environmental Protection Agency (EPA) regulations for fuel oil or newer editions of the ASTM Standards. Currently, the use of a different ASTM Standard than ASTM D-2276 Method A-2 or A-3 or a newer edition of the ASTM Standard is not permitted without an amendment to the TS. NUREG-1431, "Standard Technical Specifications Westinghouse Plants," Revision 1, and the Braidwood Station and the Byron Station Improved TS conversion project previously relocated all references to ASTM Standards to licensee-controlled documents, with the exception of ASTM D-2276.

TS 5.5.13.a.3 which requires performance of the "clear and bright" test, used to establish the acceptability of new fuel oil for use prior to addition to storage tanks, has been expanded to allow a water and sediment content test to be performed to establish the acceptability of new fuel oil in lieu of the "clear and bright" test. ASTM D4176-93 verifies that the new fuel oil has a clear and bright appearance with proper color. The "clear and bright" test is only applicable to fuel oils that meet the ASTM D4176 color rating requirements (i.e., an ASTM D1500 color rating of five or less). If an attempt is made to use the qualitative "clear and bright" test with darker colored fuels (e.g., for high sulfur fuel oil that has been dyed in accordance with EPA mandated requirements), the presence of free water or particulate could be obscured and missed by the viewer. Therefore, TS 5.5.13.a.3 has been expanded to allow the centrifuge method specified in ASTM D2709-96e, "Test Method for Water and Sediment in Distillate Fuels By Centrifuge,"

as an acceptable quantitative method for performing the new fuel oil verification for high sulfur fuel oil that has been dyed in accordance with EPA mandated requirements and does not meet the ASTM D4176 color rating requirements. ASTM D2709-96e is the same ASTM Standard used to verify the water and sediment content is within limits 30 days following sampling and addition to the storage tanks as required by TS 5.5.13.b. Therefore, since ASTM D2709-96e is currently used to verify the acceptability of new fuel oil for use following sampling and addition to the storage tanks, the use of the quantitative method of ASTM D2709-96e (i.e., water and sediment content) in lieu of ASTM D4176 (i.e., "clear and bright" test) does not introduce a different method that requires further evaluation prior to implementation.

## **E. DESCRIPTION OF THE PROPOSED CHANGES**

The proposed changes revise TS 5.5.13 as follows.

- TS 5.5.13.a.3 currently states, "a clear and bright appearance with proper color;"  
  
TS 5.5.13.a.3 will be revised to state, "a clear and bright appearance with proper color or a water and sediment content within limits;"
- TS 5.5.13.c currently states, "Total particulate concentration of the fuel oil is  $\leq 10$  mg/l when tested every 31 days in accordance with ASTM D-2276 Method A-2 or A-3."  
  
TS 5.5.13.c will be revised to state, "Total particulate concentration of the fuel oil is  $\leq 10$  mg/l when tested every 31 days."

The proposed changes are consistent with the changes previously approved by the NRC for the Seabrook Station and the Virgil C. Summer Station as documented in References 1 and 2, respectively. Additionally, the proposed changes are consistent with the changes being proposed in the WOG Standard Technical Specification Change Traveler, WOG-146, Revision 2 (Reference 3).

## **F. SAFETY ANALYSIS OF THE PROPOSED CHANGES**

The initial conditions of Design Basis Accident (DBA) and transient analyses in the Braidwood and Byron Stations' UFSAR assume Engineered Safety Feature (ESF) systems are operable. The Emergency Diesel Generators (EDGs) 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. The operability of the AC electrical power sources is consistent with the initial assumptions of the accident analyses and is based upon meeting the design basis of the plant. This results in maintaining at least one division of the onsite or offsite AC sources operable during accident conditions in the event of an assumed loss of all offsite power or all onsite AC power sources, and a worst case single failure. For proper operation of the EDGs, it is necessary to ensure the proper quality of the fuel oil. The EDG fuel oil properties governed by the TS 5.5.13 are the water and sediment content, the kinematic viscosity, specific gravity or American Petroleum Institute (API) gravity, and particulate level.

The design basis of the Auxiliary Feedwater (AF) System is to supply water to the steam generator (SG) to remove decay heat and other residual heat by delivering at least the minimum required flow rate to the SGs at pressures corresponding to the maximum steam pressure inside an intact steam generator during the long term cooling portion of the DBA (i.e., after steam line isolation occurs). In addition, the AF System must supply enough makeup water to replace SG secondary inventory lost as the unit cools to Mode 4 (i.e., "Hot Shutdown") conditions. The AF System consists of a motor driven AF pump and a diesel driven AF pump configured into two trains. Each pump provides 100% of the required AF capacity to the SGs, as assumed in the accident analysis. During the loss of all AC power events, the Engineered Safety Feature Actuation System (ESFAS) automatically actuates the diesel driven AF pump and associated controls to ensure an adequate supply to the SGs during loss of power. For proper operation of the diesel driven AF pump, it is necessary to ensure the proper quality of the fuel oil. The diesel driven AF pump fuel oil properties governed by the TS 5.5.13 are the water and sediment content, the kinematic viscosity, specific gravity or API gravity, and particulate level.

The Braidwood Station and the Byron Station TRM 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 changes will continue to ensure the use of current applicable ASTM Standards to evaluate the quality of both new fuel oil and stored fuel oil designated for use in the safety-related diesel generators (DGs) (i.e., the EDG and the Auxiliary Feedwater (AF) pump DG) at the Braidwood and Byron Stations. The Braidwood Station and the Byron Station TS will continue to require that the applicable ASTM Standards are used.

Since relocating the specific ASTM Standard reference from TS 5.5.13.c to the Diesel Fuel Oil Program in the TRM will not affect the fuel oil properties, the operability of the safety-related DGs and the AF System will be maintained. TS 3.8.3, "Diesel Fuel Oil," and TS Surveillance Requirement (SR) 3.7.5.7 and SR 3.8.3.2 require fuel oil testing to be performed in accordance with the Diesel Fuel Oil Testing Program, and TS 5.5.13 provides the programmatic requirements for fuel oil testing. The proposed changes relocate the specific ASTM Standard reference from TS 5.5.13.c to the Diesel Fuel Oil Program in the TRM. Relocation of the specific ASTM Standard reference will provide the flexibility needed to maintain state-of-the-art technology in fuel oil sampling and analysis methodology. The TRM is a licensee-controlled document and is incorporated by reference in the UFSAR. Therefore, changes to the TRM are evaluated in accordance with the provisions of 10 CFR 50.59, "Changes, tests, and experiments." The 10 CFR 50.59 change evaluation process assesses TRM changes such that the probability of occurrence or consequences of an accident or malfunction of equipment important to safety will not be increased, the possibility for an accident or malfunction of a different type than previously evaluated will not be created, and the margin of safety will not be reduced. Thus, adequate control over changes to the Diesel Fuel Oil Program (i.e., in particular changes to the applicable ASTM Standards) exist to allow relocation of the specific ASTM Standard reference to the Diesel Fuel Oil Program in the TRM.

The proposed TS changes will continue to ensure the quality of both new fuel oil and stored fuel oil designated for use in the safety-related DGs at the Braidwood and Byron Stations. Therefore, the operability of the safety-related DGs is unaffected.

#### **G. IMPACT ON PREVIOUS SUBMITTALS**

We have reviewed the proposed changes regarding their impact on any previous submittals and have determined that there is no impact on any previous submittals.

#### **H. SCHEDULE REQUIREMENTS**

We request approval of the proposed changes prior to May 30, 2000.

#### **I. REFERENCES**

1. R. M. Pulsifer (U. S. NRC) to T. C. Feigenbaum (North Atlantic Energy Service Corp.), "Seabrook Station, Unit No. 1: Issuance of Amendment Re: Diesel Fuel Oil Surveillance Requirements," dated June 27, 2000.
2. G. F. Wunder (U. S. NRC) to J. L. Skolds (South Carolina Electric & Gas Company), "Issuance of Amendment No. 121 to Facility Operating License No. NPF-12 Regarding Alternative Testing of Emergency Diesel Generators - Virgil C. Summer Nuclear Station, Unit No. 1," dated November 29, 1994.
3. Proposed Westinghouse Owners Group (WOG) Standard Technical Specification Change Traveler, WOG-146, Revision 2.

**ATTACHMENT B-1**

**PROPOSED TS CHANGES FOR BRAIDWOOD STATION**

**MARKED-UP TS PAGE**

5.5-21

## 5.5 Programs and Manuals

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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, and or a water and sediment content within limits
  3. a clear and bright appearance with proper color;
- b. Other properties of new fuel oil are within limits within 30 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 Method A-2 or A-3.~~

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

**ATTACHMENT B-2**

**PROPOSED TS CHANGES FOR BYRON STATION**

**MARKED-UP TS PAGE**

5.5-21

## 5.5 Programs and Manuals

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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, and or a water and sediment content within limits
  3. a clear and bright appearance with proper color;
- b. Other properties of new fuel oil are within limits within 30 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 Method A-2 or A-3.~~

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

**ATTACHMENT B-3**

**PROPOSED TS CHANGES INCORPORATED FOR BRAIDWOOD STATION**

TS PAGE

5.5-21

## 5.5 Programs and Manuals

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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, and
  3. a clear and bright appearance with proper color or a water and sediment content within limits;
- b. Other properties of new fuel oil are within limits within 30 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.

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

**ATTACHMENT B-4**

**PROPOSED TS CHANGES INCORPORATED FOR BYRON STATION**

**TS PAGE**

**5.5-21**

## 5.5 Programs and Manuals

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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, and
  3. a clear and bright appearance with proper color or a water and sediment content within limits;
- b. Other properties of new fuel oil are within limits within 30 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.

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

## ATTACHMENT C

### **INFORMATION SUPPORTING A FINDING OF NO SIGNIFICANT HAZARDS CONSIDERATION**

According to 10 CFR 50.92(c), "Issuance of amendment," a proposed amendment to an operating license involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not:

- (1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or
- (2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or
- (3) Involve a significant reduction in a margin of safety.

Commonwealth Edison (ComEd) Company is proposing changes to the Technical Specifications (TS) of Facility Operating License Nos. NPF-72, NPF-77, NPF-37 and NPF-66, for the Braidwood Station, Units 1 and 2, and the Byron Station, Units 1 and 2, respectively. 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 TS to a licensee-controlled document, i.e., the Diesel Fuel Oil Program in the Technical Requirements Manual (TRM). The Braidwood Station and the Byron Station TRM is incorporated by reference in the Updated Final Safety Analysis Report (UFSAR). In addition, the "clear and bright" test used to establish the acceptability of new fuel oil for use prior to addition to storage tanks has been expanded to allow a water and sediment content test to be performed to establish the acceptability of new fuel oil.

Information supporting the determination that the criteria set forth in 10 CFR 50.92 are met for this amendment request is indicated below.

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

The proposed changes relocate the specific diesel fuel oil related American Society for Testing and Materials (ASTM) Standard reference from the Administrative Controls Section of Technical Specifications (TS) to a licensee-controlled document, i.e., the Diesel Fuel Oil Program in the Technical Requirements Manual (TRM). The Braidwood Station and the Byron Station TRM is incorporated by reference in the Braidwood and Byron Stations' Updated Final Safety Analysis Report (UFSAR). Since any change to these licensee-controlled documents 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. In addition, the "clear and bright" test used to establish the acceptability of new fuel oil for use prior to addition to storage tanks has been expanded to allow a water and sediment content test to be performed to establish the acceptability of new fuel oil in lieu of the "clear and bright"

test. We consider that the quantitative water and sediment test is equivalent to the qualitative clear and bright test.

Relocating the specific ASTM Standard references from the TS to a licensee-controlled document (i.e., the Diesel Fuel Oil Program in the TRM), and allowing a water and sediment content test to be performed to establish the acceptability of new fuel oil, will not affect nor degrade the ability of the safety-related diesel generators (DGs) (i.e., the Emergency DG and the Auxiliary Feedwater pump DG) to perform their specified safety function. Fuel oil quality will continue to meet ASTM requirements.

The proposed changes do not adversely affect accident initiators or precursors nor alter the design assumptions, conditions, and 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 acceptance limits assumed in the Braidwood and Byron Stations' UFSAR. 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 in the Braidwood and Byron Stations' UFSAR.

Therefore, the changes do 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?**

The proposed changes relocate the specific ASTM Standard reference from the Administrative Controls Section of TS to a licensee-controlled document, i.e., the Diesel Fuel Oil Program in the TRM. In addition, the "clear and bright" test used to establish the acceptability of new fuel oil for use prior to addition to storage tanks has been expanded to allow a water and sediment content test to be performed to establish the acceptability of new fuel oil.

The changes do 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. In addition, the changes do not impose any new or different requirements or eliminate any existing requirements. The changes do not alter assumptions made in the safety analysis. Therefore, the changes do 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?**

The proposed changes relocate the specific ASTM Standard reference from the Administrative Controls Section of TS to a licensee-controlled document, i.e., the Diesel Fuel Oil Program in the TRM. Instituting the proposed changes will continue to ensure the use of current applicable ASTM Standards to evaluate the quality of both new and stored fuel oil designated for use in the safety-related DGs. The detail associated with

the specific ASTM Standard reference is not required to be in the TS to provide adequate protection of the public health and safety, since the TS still retain the requirement for compliance with the applicable ASTM Standard. Changes to the TRM are evaluated in accordance with 10 CFR 50.59. Should it be determined that future changes involve a potential reduction in a margin of safety, NRC review and approval would be necessary prior to implementation of the changes. This approach provides an effective level of control and provides for a more appropriate change control process. In addition, the "clear and bright" test used to establish the acceptability of new fuel oil for use prior to addition to storage tanks has been expanded to allow a water and sediment content test to be performed to establish the acceptability of new fuel oil in lieu of the "clear and bright" test. The level of safety of facility operation is unaffected by the proposed changes since there is no change to the TS requirements intended to assure that fuel oil is of the appropriate quality for safety-related DG use. The proposed changes provide the flexibility needed to maintain state-of-the-art technology in fuel oil sampling and analysis methodology.

Therefore, the changes do not involve a significant reduction in a margin of safety.

## ATTACHMENT D

### INFORMATION SUPPORTING AN ENVIRONMENTAL ASSESSMENT

Commonwealth Edison (ComEd) Company has evaluated the proposed changes against the criteria for identification of licensing and regulatory actions requiring environmental assessment in accordance with 10 CFR 51.21, "Criteria for and identification of licensing and regulatory actions requiring environmental assessments." ComEd has determined that the proposed changes meet the criteria for a categorical exclusion set forth in 10 CFR 51.22(c)(9), "Criteria for categorical exclusion; identification of licensing and regulatory actions eligible for categorical exclusion or otherwise not requiring environmental review," and as such, has determined that no irreversible consequences exist in accordance with 10 CFR 50.92(b), "Issuance of amendment." This determination is based on the fact that this change is being proposed as an amendment to a license issued pursuant to 10 CFR 50, "Domestic Licensing of Production and Utilization Facilities," which changes a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, "Standards for Protection Against Radiation," or which changes an inspection or a surveillance requirement, and the amendment meets the following specific criteria.

**(i) The amendment involves no significant hazards consideration.**

As demonstrated in Attachment C, the proposed changes do not involve any significant hazards consideration.

**(ii) There is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite.**

The proposed changes revise Technical Specification (TS) 5.5.13.c to relocate the specific American Society for Testing and Materials Standard reference from the Administrative Controls Section of TS to a licensee-controlled document, i.e., the Diesel Fuel Oil Program in the Technical Requirements Manual. In addition, the "clear and bright" test used to establish the acceptability of new fuel oil for use prior to addition to storage tanks (i.e., TS 5.5.13.a.3) has been expanded to allow a water and sediment content test to be performed to establish the acceptability of new fuel oil. The proposed changes do not allow for an increase in the unit power level, do not increase the production, nor alter the flow path or method of disposal of radioactive waste or by-products. The proposed changes do not affect actual unit effluents. Therefore, the proposed changes do not change the types or increase the amounts of any effluents released offsite.

**(iii) There is no significant increase in individual or cumulative occupational radiation exposure.**

The proposed changes will not result in changes in the operation or configuration of the facility. There will be no change in the level of controls or methodology used for processing of radioactive effluents or handling of solid radioactive waste, nor will the proposal result in any change in the normal radiation levels within the plant. Therefore, there will be no increase in individual or cumulative occupational radiation exposure resulting from the proposed changes.

**ATTACHMENT E**

**PROPOSED WESTINGHOUSE OWNERS GROUP (WOG)  
STANDARD TECHNICAL SPECIFICATION CHANGE TRAVELER,  
WOG-146, REVISION 2**

## Industry/TSTF Standard Technical Specification Change Traveler

### Revision to TS 5.5.13 and associated TS Bases for Diesel Fuel Oil

Classification: 1) Correct Specifications

NUREGs Affected:  1430  1431  1432  1433  1434

#### Description:

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 references from the Administrative Controls Section of TS to a licensee-controlled document. In addition, the "clear and bright" test used to establish the acceptability of new fuel oil for use prior to addition to storage tanks has been expanded to allow a water and sediment content test to be performed to establish the acceptability of new fuel oil. The TS Bases 3.8.3, "Diesel Fuel Oil," are revised to provide the current ASTM standards.

The proposed change supersedes TSTF-120, "Simplify Fuel Oil Sampling."

#### Justification:

##### DESCRIPTION

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 references from the Administrative Controls Section of TS to a licensee-controlled document. In addition, the "clear and bright" test used to establish the acceptability of new fuel oil for use prior to addition to storage tanks has been expanded to allow a water and sediment content test to be performed to establish the acceptability of new fuel oil. The proposed changes are consistent with the changes previously approved by the NRC for the Seabrook Station and the Virgil C. Summer Station on June 27, 2000, and November 29, 1994, respectively. The TS Bases 3.8.3, "Diesel Fuel Oil," are revised to provide the current ASTM standards.

##### BACKGROUND

TS 5.5.13 implements required testing of both new fuel oil and stored fuel oil. The Diesel Fuel Oil Testing Program includes sampling and testing requirements, and acceptance criteria, all in accordance with applicable ASTM Standards.

The tests of fuel oil are a means of determining whether new fuel oil is of the appropriate grade (i.e., proper fuel oil quality) and of assuring it has not been contaminated with substances that would have an immediate, detrimental impact on diesel engine combustion (i.e., proper fuel oil quality).

The purpose of the Diesel Fuel Oil Program is to establish the following.

- >Acceptability of new fuel oil for use prior to addition to storage tanks;
- >Other properties of new fuel oil are within limits within 30 days following sampling and addition to storage tanks; and
- >Total particulate concentration of the fuel oil is \* 10 mg/l when tested every 31 days in accordance with ASTM D-2276 Method A-2 or A-3.

##### NEED FOR CHANGE

The proposed changes revise TS 5.5.13.c to relocate the specific American Society for Testing and Materials (ASTM) Standard references from the Administrative Controls Section of TS to a licensee-controlled document. In addition, the "clear and bright" test used to establish the acceptability of new fuel oil for use prior to addition to storage tanks (i.e., TS 5.5.13.a.3) has been expanded to allow a water and sediment content test to be performed to establish the acceptability of new fuel oil. The TS Bases 3.8.3, "Diesel Fuel Oil," are revised to provide the current ASTM standards.

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The proposed changes to TS 5.5.13.c will provide the flexibility to maintain the capability to implement the required testing of both new fuel oil and stored fuel oil, including sampling and testing requirements, in accordance with applicable ASTM Standards whenever there are changes in Environmental Protection Agency (EPA) regulations for fuel oil or newer editions of the ASTM Standards. Currently, the use of a different ASTM Standard than specified in TS 5.5.13.c or a newer edition of the ASTM Standard is not permitted without an amendment to the TS. NUREG-1431, "Standard Technical Specifications Westinghouse Plants," Revision 1, previously relocated all references to ASTM Standards in TS to licensee-controlled documents, with the exception of TS 5.5.13.c.

TS 5.5.13.a.3 which requires performance of the "clear and bright" test, used to establish the acceptability of new fuel oil for use prior to addition to storage tanks, has been expanded to allow a water and sediment content test to be performed to establish the acceptability of new fuel oil. ASTM D4176-93, "Standard Test Method for Free Water and Particulate Contamination in Distillate Fuels (Visual Inspection Procedures)," verifies that the new fuel oil has a clear and bright appearance with proper color. The "clear and bright" test is only applicable to fuel oils that meet the ASTM D4176 color rating requirements (i.e., an ASTM D1500, "Test Method for ASTM Color of Petroleum Products (ASTM Color Scale)," color rating of five or less). If an attempt is made to use the qualitative "clear and bright" test with darker colored fuels (e.g., for high sulfur fuel oil that has been dyed in accordance with EPA mandated requirements), the presence of free water or particulate could be obscured and missed by the viewer. Therefore, TS 5.5.13.a.3 has been expanded to allow the centrifuge method specified in ASTM D2709-96e, "Test Method for Water and Sediment in Distillate Fuels By Centrifuge," as an acceptable quantitative method for performing the new fuel oil verification for high sulfur fuel oil that has been dyed in accordance with EPA mandated requirements and does not meet the ASTM D4176 color rating requirements.

#### PROPOSED CHANGE

The proposed changes revise TS 5.5.13 as follows.

>TS 5.5.13.a.3 currently states, "a clear and bright appearance with proper color;"

>TS 5.5.13.a.3 has been revised to state, "a clear and bright appearance with proper color or a water and sediment content within limits;"

>TS 5.5.13.c currently states, "Total particulate concentration of the fuel oil is \* 10 mg/l when tested every 31 days in accordance with ASTM D-2276 Method A-2 or A-3."

>TS 5.5.13.c has been revised to state, "Total particulate concentration of the fuel oil is \* 10 mg/l when tested every 31 days.

The proposed changes revise Bases B 3.8.3 to reference the current specific ASTM Standards. The Bases for SR 3.8.3.3 is revised to indicate that the API gravity is tested in accordance with ASTM D1298 and to provide an additional method (ASTM D4294) for sulfur testing.

#### JUSTIFICATION

The initial conditions of Design Basis Accident (DBA) and transient analyses 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 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 the TS 5.5.13 are the water and sediment content, the kinematic viscosity, specific gravity or API gravity, 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

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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 current 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.

Since relocating the specific ASTM Standard references 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. TS 3.8.3 requires fuel oil testing to be performed in accordance with the Diesel Fuel Oil Testing Program, and TS 5.5.13 provides the programmatic requirements for fuel oil testing. The proposed changes relocate the specific ASTM Standard references from TS 5.5.13.c to a licensee-controlled document. 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., in particular changes to the applicable ASTM Standards) exist to allow relocation of the specific ASTM Standard references to a licensee-controlled document.

ASTM D2709-96e is the same ASTM Standard used to verify the water and sediment content is within limits 30 days following sampling and addition to the storage tanks as required by TS 5.5.13.b. Therefore, since ASTM D2709 is currently used to verify the acceptability of new fuel oil for use prior to addition to the storage tanks, the use of the quantitative method of ASTM D2709 (i.e., water and sediment content) in lieu of ASTM D4176 (i.e., "clear and bright" test) does not introduce a different method that requires further evaluation prior to implementation. The Bases for SR 3.8.3.3 are revised to include the option of water and sediment content when tested in accordance with ASTM D2709.

SR 3.8.3.2 requires fuel oil testing to be performed in accordance with the Diesel Fuel Oil Testing Program, and TS 5.5.13 provides the programmatic requirements for fuel oil testing. As such, detail of the specific ASTM Standard reference (i.e., ASTM D-2276 Method A-2 or A-3) is not required to ensure adequate protection of the public health and safety. Therefore, in order to provide the flexibility, the proposed changes relocate the specific ASTM Standard references from TS 5.5.13.c to a licensee-controlled document. Relocation of the specific ASTM Standard references will provide the flexibility needed to maintain state-of-the-art technology in fuel oil sampling and analysis methodology. Changes to the licensee-controlled document are performed in accordance with the provisions of 10 CFR 50.59. Thus, adequate controls exist to allow relocation of the specific ASTM Standard references to a licensee-controlled document.

The Bases for SR 3.8.3.3 is clarified to indicate that the API gravity is tested in accordance with ASTM D1298 since ASTM D975 does not specifically address API gravity testing.

The Bases for SR 3.8.3.3 are revised to indicate that the analysis for sulfur in diesel can be performed by a test based on a non-dispersive X-ray fluorescence spectrometry (ASTM D4294). This is a more up-to-date method and would be helpful in monitoring sulfur content in diesel fuel oil. This method could yield results of a comparable accuracy to the other two methods. The use of this additional analysis method was approved in Amendment No. 101 for the Wolf Creek Generating Station.

The Bases for SR 3.8.3.3 is revised to change ASTM D2276 to ASTM D5452. ASTM D5452 supersedes ASTM D2276.

The proposed TS and Bases changes will continue to ensure the quality of both new fuel oil and stored fuel oil designated for use in the DGs. Therefore, the OPERABILITY of the DGs is unaffected.

#### Determination of No Significant Hazards Considerations

A change is proposed to the Improved Standard Technical Specifications, NUREGs 1430 - 1434, TS 5.5.13, "Diesel Fuel Oil Testing Program," and Bases B 3.8.3, "Diesel Fuel Oil."

In accordance with the criteria set forth in 10 CFR 50.92, the Industry has evaluated these proposed Improved Standard Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

The proposed changes relocate the specific American Society for Testing and Materials (ASTM) Standard references from the Administrative Controls Section of Technical Specifications (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. In addition, the "clear and bright" test used to establish the acceptability of new fuel oil for use prior to addition to storage tanks has been expanded to allow a water and sediment content test to be performed to establish the acceptability of new fuel oil. The proposed changes revise Bases B 3.8.3 to reference the current specific ASTM Standards. The Bases for SR 3.8.3.3 is revised to indicate that the API gravity is tested in accordance with ASTM D1298 and to provide an additional method (ASTM D4294) for sulfur testing.

Relocating the specific ASTM Standard references from the TS to a licensee-controlled document, allowing a water and sediment content test to be performed to establish the acceptability of new fuel oil, and revising the TS Bases will not affect nor degrade the ability of the emergency diesel generators (DGs) to perform their specified safety function. Fuel oil quality will continue to meet ASTM requirements.

The proposed changes do not adversely affect accident initiators or precursors nor alter the design assumptions, conditions, and 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 the types and amounts of radioactive effluent that may be released offsite, nor significantly increase individual or cumulative occupational/public radiation exposures.

Therefore, the changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

The proposed changes relocate the specific ASTM Standard references from the Administrative Controls Section of TS to a licensee-controlled document. In addition, the "clear and bright" test used to establish the acceptability of new fuel oil for use prior to addition to storage tanks has been expanded to allow a water and sediment content test to be performed to establish the acceptability of new fuel oil. The proposed changes revise Bases B 3.8.3 to reference the current specific ASTM Standards. The Bases for SR 3.8.3.3 is revised to indicate that the API gravity is tested in accordance with ASTM D1298 and to provide an additional method (ASTM D4294) for sulfur testing.

The changes do 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. In addition, the changes do not impose any new or different requirements or eliminate any existing requirements. The changes do not alter assumptions made in the safety analysis and licensing basis. Therefore, the changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes relocate the specific ASTM Standard references from the Administrative Controls Section of TS to a licensee-controlled document. Instituting the proposed changes will continue to ensure the use of current applicable ASTM Standards to evaluate the quality of both new and stored fuel oil designated for use in the emergency DGs. The detail associated with the specific ASTM Standard references is not required to be in the TS to provide adequate protection of the public health and safety, since the TS still retain the requirement for compliance with the applicable ASTM Standard. Changes to the licensee-controlled document are performed in accordance with the provisions of 10 CFR 50.59. Should it be determined that future changes involve a potential reduction in a margin of safety, NRC review and approval would be necessary prior to implementation of the changes. This approach provides an effective

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level of regulatory control and provides for a more appropriate change control process.

The "clear and bright" test used to establish the acceptability of new fuel oil for use prior to addition to storage tanks has been expanded to allow a water and sediment content test to be performed to establish the acceptability of new fuel oil. The proposed changes revise Bases B 3.8.3 to reference the current specific ASTM Standards. The Bases for SR 3.8.3.3 is revised to indicate that the API gravity is tested in accordance with ASTM D1298 and to provide an additional method (ASTM D4294) for sulfur testing. 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 maintain state-of-the-art technology in fuel oil sampling and analysis methodology.

The proposed changes do not reduce a margin of safety since they have no impact on any transient or safety analysis assumptions. Therefore, the changes do not involve a significant reduction in a margin of safety.

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## Revision History

### OG Revision 0 Revision Status: Closed

Revision Proposed by: WOG

Revision Description:  
Original Issue

#### Owners Group Review Information

Date Originated by OG: 08-Dec-99

Owners Group Comments  
(No Comments)

Owners Group Resolution: Superceded Date:

### OG Revision 1 Revision Status: Closed

Revision Proposed by: WOG

Revision Description:  
Complete replacement of Revision 0.

#### Owners Group Review Information

Date Originated by OG: 21-Jun-00

Owners Group Comments  
WOG Comments:

Remove brackets from 5.5.13, #3 on page 5.0-16 and modify #3

Remove the brackets from SR 3.8.3.3 on page B 3.8-46

Develop the WOG and delete the specific ASTM standars and state "the applicable ASTMs". Millstone to provide SER to develop SER quality justification.

Replaced on 10/15/00.

Owners Group Resolution: Superceded Date: 01-Aug-00

10/29/2000

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**OG Revision 2****Revision Status: Active****Next Action: WOG**

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Revision Proposed by: WOG

Revision Description:

Complete Replacement of Revision 1.

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**Incorporation Into the NUREGs**

File to BBS/LAN Date:

TSTF Informed Date:

TSTF Approved Date:

NUREG Rev Incorporated:

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**Affected Technical Specifications**

Ref. 3.8.3 Bases	Diesel Fuel Oil, Lube Oil, and Starting Air
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SR 3.8.3.3 Bases	Diesel Fuel Oil, Lube Oil, and Starting Air
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5.5.13	Diesel Fuel Oil Testing Program
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-This page included for information only.  
No changes this page. -

## 5.5 Programs and Manuals

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### 5.5.12 Explosive Gas and Storage Tank Radioactivity Monitoring Program (continued)

appropriate to the system's design criteria (i.e., whether or not the system is designed to withstand a hydrogen explosion);

- b. A surveillance program to ensure that the quantity of radioactivity contained in [each gas storage tank and fed into the offgas treatment system] is less than the amount that would result in a whole body exposure of  $\geq 0.5$  rem to any individual in an unrestricted area, in the event of [an uncontrolled release of the tanks' contents]; and
- c. A surveillance program to ensure that the quantity of radioactivity contained in all outdoor liquid radwaste tanks that are not surrounded by liners, dikes, or walls, capable of holding the tanks' contents and that do not have tank overflows and surrounding area drains connected to the [Liquid Radwaste Treatment System] is less than the amount that would result in concentrations less than the limits of 10 CFR 20, Appendix B, Table 2, Column 2, at the nearest potable water supply and the nearest surface water supply in an unrestricted area, in the event of an uncontrolled release of the tanks' contents.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Explosive Gas and Storage Tank Radioactivity Monitoring Program surveillance frequencies.

### 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,

(continued)

5.5 Programs and Manuals

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5.5.13 Diesel Fuel Oil Testing Program (continued)

or a water and sediment content 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;
- 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, Method A-2 or A-3.~~

5.5.14 Technical Specifications (TS) Bases Control Program

This program provides a means for processing changes to the Bases of these Technical Specifications.

- a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.
- b. Licensees may make changes to Bases without prior NRC approval provided the changes do not involve either of the following:
  1. a change in the TS incorporated in the license; or
  2. a change to the updated FSAR or Bases that involves an unreviewed safety question as defined in 10 CFR 50.59.
- c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the FSAR.
- d. Proposed changes that meet the criteria of Specification 5.5.14b above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71(e).

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(continued)

BASES

SURVEILLANCE  
REQUIREMENTS

SR 3.8.3.2 (continued)

operation for each DG. The [500] gal requirement is based on the DG manufacturer consumption values for the run time of the DG. Implicit in this SR is the requirement to verify the capability to transfer the lube oil from its storage location to the DG, when the DG lube oil sump does not hold 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. 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-[ ] (Ref. 6);
- b. Verify in accordance with the tests specified in ASTM D975-[ ] (Ref. 6) that the sample has an absolute specific gravity at 60/60°F of  $> 0.83$  and  $\leq 0.89$  or an API gravity at 60°F of  $\geq 27^\circ$  and  $\leq 39^\circ$ , 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-[ ] (Ref. 6).

when tested in accordance with ASTM D1298-[ ] (Ref. 6)

or a water and sediment content within limits when tested in accordance with ASTM D2709-[ ]

(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-[ ] (Ref. 7) are met for new fuel oil when tested in accordance with ASTM D975-[ ] (Ref. 6), except that the analysis for sulfur may be performed in accordance with ASTM D1552-[ ] (Ref. 6) or ASTM D2622-[ ] (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.

OR ASTM  
D4294-[ ]

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 ~~D2275~~ [ ] ~~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.]

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

(continued)

BASES

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SURVEILLANCE  
REQUIREMENTS  
(continued)

SR 3.8.3.6

Draining of the fuel oil stored in the supply tanks, removal of accumulated sediment, and tank cleaning are required at 10 year intervals by Regulatory Guide 1.137 (Ref. 2), paragraph 2.f. This SR also requires the performance of the ASME Code, Section XI (Ref. 8), examinations of the tanks. To preclude the introduction of surfactants in the fuel oil system, the cleaning should be accomplished using sodium hypochlorite solutions, or their equivalent, rather than soap or detergents. This SR is for preventive maintenance. The presence of sediment does not necessarily represent a failure of this SR, provided that accumulated sediment is removed during performance of the Surveillance.

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REFERENCES

1. FSAR, Section [9.5.4.2].
  2. Regulatory Guide 1.137.
  3. ANSI N195-1976, Appendix B.
  4. FSAR, Chapter [6].
  5. FSAR, Chapter [15].
  6. ASTM Standards: D4057-[ ]; D975-[ ]; D4176-[ ];  
D1552-[ ]; D2622-[ ]; D2276, Method A.  
*(Handwritten notes: D1298-[ ] above; D2709-[ ] with arrow pointing to D2276; D4294-[ ]; D5452-[ ] with arrow pointing to D2276)*
  7. ASTM Standards, D975, Table 1.
  8. ASME, Boiler and Presser Vessel Code, Section XI.
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