

10 CFR 50.90

RS-22-037

April 21, 2022

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001Braidwood Station, Units 1 and 2  
Renewed Facility Operating License Nos. NPF-72 and NPF-77  
NRC Docket Nos. 50-456 and 50-457Byron Station, Units 1 and 2  
Renewed Facility Operating License Nos. NPF-37 and NPF-66  
NRC Docket Nos. 50-454 and 50-455

Subject: License Amendment Request –Adoption of Technical Specification Task Force (TSTF) Traveler TSTF-501, Revision 1, "Relocate Stored Fuel Oil and Lube Oil Volume Values to Licensee Control"

In accordance with 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit," Constellation Energy Generation, LLC (CEG) is submitting a request for an amendment to the Technical Specifications (TS), Appendix A, for the following stations:

- Braidwood Station (BWD), Units 1 and 2, Renewed Facility Operating License Nos. NPF-72 and NPF-77, NRC Docket Nos. 50-456 and 50-457
- Byron Station (BYR), Units 1 and 2, Renewed Facility Operating License Nos. NPF-37 and NPF-66, NRC Docket Nos. 50-454 and 50-455

The proposed changes revise TS 3.8.3, "Diesel Fuel Oil," by relocating the current stored diesel fuel oil numerical volume requirements from the TS to the TS Bases so that it may be modified under licensee control. The TS is modified so that the stored diesel fuel oil inventory will require that a 7-day supply be available for each diesel generator. Condition A in the Action table is revised and Surveillance Requirement (SR) 3.8.3.1 is revised to reflect the above change.

Regarding stored diesel fuel oil, no changes to the current plant configuration, current numerical volume requirements, or current 7-day basis are proposed in this application; the proposal

merely moves the current numerical volume requirements from the TS to the TS Bases and moves the associated current 7-day basis from the TS Bases to the TS. In addition, no changes to any SR Frequency, Required Actions, or Completion Times are proposed in this application.

These proposed changes are consistent with NRC-approved Revision 1 to Technical Specification Task Force (TSTF) Improved Standard Technical Specifications (STS) Change Traveler TSTF-501, "Relocate Stored Fuel Oil and Lube Oil Volume Values to Licensee Control." The availability of this TS improvement was announced in the Federal Register on May 26, 2010 (75 FR 29588) as part of the Consolidated Line Item Improvement Process (CLIIP).

The current licensing basis for the referenced stations requires that a 7-day supply of stored diesel fuel oil be available for each diesel generator.

Attachment 1 provides a description and assessment of the proposed changes, the requested confirmation of applicability, and plant-specific verifications. Attachments 2 and 3 provides the Proposed TS Marked-Up Pages. Attachments 4 and 5 provides the Proposed Technical Specifications Bases Marked-Up Pages for information only.

The proposed changes have been reviewed by the respective station Plant Operations Review Committees in accordance with the requirements of the CEG Quality Assurance Program.

CEG requests approval of the proposed amendment by October 31, 2022. Once approved, the amendment shall be implemented within 60 days.

There are no regulatory commitments contained in this request.

CEG has concluded that the proposed change presents no significant hazards consideration under the standards set forth in 10 CFR 50.92.

In accordance with 10 CFR 50.91, "Notice for public comment; State consultation," paragraph (b), CEG is transmitting a copy of this application and its attachments to the designated State of Illinois official.

Should you have any questions concerning this submittal, please contact Jason Taken at (630) 657-3660.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 21<sup>st</sup> day of April, 2022.

Respectfully,

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Kevin Lueshen  
Senior Manager - Licensing  
Constellation Energy Generation, LLC

U.S. Nuclear Regulatory Commission

April 21, 2022

Page 3

Attachments:

- 1) Evaluation of Proposed Changes
- 2) Proposed Technical Specification Marked-Up Pages - Braidwood
- 3) Proposed Technical Specification Bases Marked-Up Pages – Braidwood
- 4) Proposed Technical Specification Marked-Up Pages - Byron
- 5) Proposed Technical Specification Bases Marked-Up Pages - Byron

cc: NRC Region III, Regional Administrator  
NRC Senior Resident Inspector, BWD,BYR  
NRC Project Manager, BWD,BYR  
Illinois Emergency Management Agency, Illinois Division of Reactor Safety

## **ATTACHMENT 1**

### **EVALUATION OF PROPOSED CHANGES**

**SUBJECT: License Amendment Request –Adoption of Technical Specification Task Force (TSTF) Traveler TSTF-501, Revision 1, "Relocate Stored Fuel Oil and Lube Oil Volume Values to Licensee Control"**

**1.0 DESCRIPTION**

**2.0 PROPOSED CHANGES**

**3.0 BACKGROUND**

**4.0 TECHNICAL ANALYSIS**

**5.0 REGULATORY ANALYSIS**

**5.1 No Significant Hazards Consideration**

**5.2 Applicable Regulatory Requirements/Criteria**

**5.3 Precedent**

**6.0 ENVIRONMENTAL EVALUATION**

**7.0 REFERENCES**

## 1.0 DESCRIPTION

The proposed changes revise Technical Specification (TS) 3.8.3, "Diesel Fuel Oil," for Braidwood Station (BWD) and Byron Station (BYR) by relocating the current stored diesel fuel oil numerical volume requirements from the TS to the TS Bases so that it may be modified under licensee control. The TS are modified so that the stored diesel fuel oil inventory will require that a 7-day supply be available for each diesel generator. This change is consistent with NRC-approved Technical Specifications Task Force (TSTF) Improved Standard Technical Specifications (STS) Change Traveler TSTF-501, Revision 1, "Relocate Stored Fuel Oil and Lube Oil Volume Values to Licensee Control (Reference 1). The availability of this TS improvement was announced in the Federal Register on May 26, 2010 (75 FR 29588) (Reference 2) as part of the Consolidated Line Item Improvement Process (CLIIP).

CEG has reviewed the model safety evaluation dated May 14, 2010, as part of Reference 2. This review included a review of the NRC staff's evaluation, as well as the information provided in Reference 1. CEG has concluded that the justifications presented in the Reference 1 proposal and the model safety evaluation prepared by the NRC staff are applicable to BWD and BYR and justify this amendment for the incorporation of the changes to referenced stations' TS.

## 2.0 PROPOSED CHANGES

The proposed changes revise TS 3.8.3, "Diesel Fuel Oil," for BWD and BYR by relocating the current stored diesel fuel oil numerical volume requirements from the TS to the TS Bases so that it may be modified under licensee control. The TS are modified so that the stored diesel fuel oil inventory will require that a 7-day supply be available for each diesel generator.

The TS changes for BWD and BYR, TS 3.8.3, are as follows:

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

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

## **2.1 VARIATIONS**

CEG is proposing the following variations from the TS changes described in Reference 1, or the NRC staff's model Safety Evaluation (SE) published in Reference 2 as part of the CLIP Notice of Availability.

- A revision to BWD and BYR TS 3.8.1, "AC Sources-Operating," following a similar approach to the TS 3.8.3 changes discussed above is proposed. The proposed revision to SR 3.8.1.4 relocates the specific day tank numerical volume requirements to a licensee-controlled document and replaces the volumes with the requirement to maintain greater than or equal to a one-hour supply of fuel oil. The specific day tank volumes of fuel oil for the Train A, B Diesel Generators (DGs) will be moved to the TS Bases. Similar to the technical justification provided in the model SE as part of the CLIP, this proposed variation is acceptable because it removes the current numerical volume requirement for the day tank and replaces it with the requirement to maintain greater than or equal to a one-hour supply of fuel oil. This variation was approved with other licensees identified in Section 5.3 of this application.

- Section 3.3. of the NRC Staff's model SE contains the following statement:

"Both calculation methods shall include explicit allowance for fuel oil consumption required by periodic testing."

BWD and BYR calculations that determine fuel oil volumes required to support operation of the DGs for 7-days do not include an explicit allowance for fuel oil consumption due to periodic testing. Instead, BWD and BYR administratively control fuel oil in support of required periodic testing, such that the required volumes for the fuel oil tanks are maintained. This variation is the same as that described in the applications referenced in Section 5.3 of this application.

In addition, this application contains editorial variations from the model application. In some instances, Division 1 and Division 2 DGs are referred to as Train A and Train B DGs. This is an editorial variation to comport with how the Braidwood and Byron TS refer to the DGs.

Lastly, the model application and Safety Evaluation reference lube oil levels in their evaluation and the proposed TS changes. The lube oil levels are not referenced in the applicable BWD and BYR TS sections in the context of this application, and are therefore intentionally excluded from discussion in this application.

## **3.0 BACKGROUND**

The background for this application is addressed by Reference 1 and the model Safety Evaluation in Reference 2.

#### 4.0 TECHNICAL ANALYSIS

CEG has reviewed the model SE published in Reference 2 as part of the CLIP Notice of Availability. CEG has concluded that the technical justifications presented in the model SE prepared by the NRC staff are applicable to BWD and BYR and therefore justify this amendment for the incorporation of the proposed changes to the BWD and BYR TS.

#### 5.0 REGULATORY SAFETY ANALYSIS

##### 5.1 No Significant Hazards Consideration

Constellation Energy Generation, LLC (CEG) has evaluated the proposed changes to the TS using the criteria in 10 CFR 50.92 and has determined that the proposed changes do not involve a significant hazards consideration.

The proposed changes revise TS by relocating the current stored diesel fuel oil and day tank numerical volume requirements from the TS to the TS Bases so that they may be modified under licensee control. The current stored diesel fuel oil numerical volume requirements are based on a 7-day supply for each DG with a greater than or equal to one-hour supply in each day tank. The TS are modified so that the stored diesel fuel oil inventory will require that a 7-day storage supply be available for each diesel generator and a greater than or equal to one-hour fuel oil supply be available in each day tank.

As required by 10 CFR 50.91(a), an analysis of the issue of no significant hazards consideration is presented below:

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

Response: No.

The proposed change relocates the volume of diesel fuel oil required to support 7-day operation of each onsite diesel generator, and the volume equivalent to a 6-day supply, to licensee control. The specific volume of fuel oil equivalent to a 7 and 6-day supply is calculated using the NRC-approved methodology described in Regulatory Guide 1.137, Revision 1, "Fuel-Oil Systems for Standby Diesel Generators" and ANSI-N195 1976, "Fuel Oil Systems for Standby Diesel-Generators." Because the requirement to maintain a 7-day supply of diesel fuel oil is not changed and is consistent with the assumptions in the accident analyses, and the actions taken when the volume of fuel oil are less than a 6-day supply have not changed, neither the probability nor the consequences of any accident previously evaluated will be affected.

The proposed change also relocates the specific volumes of diesel fuel oil in the day tanks for the Train A and B Diesel Generators (DGs) to the Technical Specifications (TS) Bases and replaces the volumes with the requirement to maintain greater than or equal to a one-hour supply of fuel oil. The specific volume is not changed and is consistent with the existing plant design basis to support the emergency DGs under accident load conditions.

Therefore, the proposed 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?**

Response: No.

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. The changes do not alter assumptions made in the safety analysis but ensure that the diesel generator operates as assumed in the accident analysis. The proposed changes are consistent with the safety analysis assumptions. Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

Therefore, it is concluded that the proposed 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?**

Response: No.

The proposed changes relocate the volume of diesel fuel oil required to support 7-day operation of each onsite diesel generator, the volume equivalent to a 6-day supply, and the specific volumes of the day tank supplies to licensee control. As the bases for the existing limits on diesel fuel oil are not changed, no change is made to the accident analysis assumptions and no margin of safety is reduced as part of these changes. Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

Therefore, it is concluded that these proposed changes do not involve a significant reduction in a margin of safety.

Based on the above, CEG concludes that the proposed changes present no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

**5.2 Applicable Regulatory Requirements/Criteria**

A description of the proposed TS changes and their relationship to applicable regulatory requirements was provided in the NRC Notice of Availability published on May 26, 2010, (75 FR 29588) (Reference 2). CEG has concluded that the technical justifications presented in the SE prepared by the NRC staff are applicable to BWD and BYR and therefore justify this amendment for the incorporation of the proposed changes to the BWD and BYR TS.

**5.3 Precedent**

Nine Mile Point Nuclear Station, Unit 2 – Issuance of Amendment No. 187, Changes Adoption Of Technical Specification Task Force (TSTF) Traveler TSTF-501, Revision 1, "Relocate Stored Fuel Oil And Lube Oil Volume Values To Licensee Control" (EPID L-2021-LLA-0096)," dated November 15, 2021 (ML21295A734)



Cooper Nuclear Station – Issuance of Amendment RE: Adoption of Technical Specifications task Force (TSTF) Traveler TSTF-501, Revision1, "Relocate Stored Fuel Oil and Lube Oil Volume Values to Licensee Control," dated February 21, 2019 (ML18348B103)

## **6.0 ENVIRONMENTAL EVALUATION**

The proposed change would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed changes do not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed changes meet the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed changes.

## **7.0 REFERENCES**

1. TSTF-501-A, Revision 1, "Relocate Stored Fuel Oil and Lube Oil Volume Values to Licensee Control," dated May 28, 2010.
2. Federal Register Notice, Notice of availability, published May 26, 2010 (75 FR 29588)
3. ANSI N195-1976

**ATTACHMENT 2**

**Proposed Technical Specification Marked-Up Pages**

**Braidwood Station**

**Adoption of Technical Specification Task Force (TSTF) Traveler TSTF-501,  
Revision 1, "Relocate Stored Fuel Oil and Lube Oil  
Volume Values to Licensee Control"**

**TS Pages**

3.8.1-7

3.8.3-1

3.8.3-2

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.8.1.4 Verify each day tank contains $\geq$ <del>450-gal</del> <b>one hour supply</b> of fuel oil.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.5 Check for and remove accumulated water from each day tank.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.6 Verify the fuel oil transfer system operates to automatically transfer fuel oil from storage tank(s) to the day tank.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.7 Verify each DG starts from normal standby condition and achieves: <ul style="list-style-type: none"> <li>a. In <math>\leq</math> 10 seconds, voltage <math>\geq</math> 3950 V and frequency <math>\geq</math> 58.8 Hz; and</li> <li>b. Steady state voltage <math>\geq</math> 3950 V and <math>\leq</math> 4370 V, and frequency <math>\geq</math> 59.5 Hz and <math>\leq</math> 60.5 Hz.</li> </ul>	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.8 Verify manual transfer of AC power sources from the required normal qualified circuit(s) to the reserve required qualified circuit(s).	In accordance with the Surveillance Frequency Control Program

(continued)

3.8 ELECTRICAL POWER SYSTEMS

3.8.3 Diesel Fuel Oil

LC0 3.8.3 The stored diesel fuel oil shall be within limits for each required Diesel Generator (DG).

APPLICABILITY: When associated DG is required to be OPERABLE.

ACTIONS

-----NOTE-----  
Separate Condition entry is allowed for each DG.  
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CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more DGs with stored fuel volume <del>&lt; 44,000 gal</del> less than a 7 day supply and <del>&gt; 41,138 gal</del> greater than a 6 day supply <del>in storage tank(s)</del> .	A.1 Restore stored fuel oil volume to within limits.	48 hours
B. One or more DGs with stored fuel oil total particulates not within limit.	B.1 Restore fuel oil total particulates within limit.	7 days
C. One or more DGs with new fuel oil properties not within limits.	C.1 Restore stored fuel oil properties to within limits.	30 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>D. Required Action and associated Completion Time of Conditions A, B, or C not met.</p> <p><u>OR</u></p> <p>One or more DGs with diesel fuel oil not within limits for reasons other than Condition A, B, or C.</p>	<p>D.1 Declare associated DG inoperable.</p>	<p>Immediately</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.3.1 Verify each DG fuel oil storage tank(s) contains <math>\geq 44,000</math> day supply <del>gal</del> of fuel.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.8.3.2 Verify fuel oil properties of new and stored fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program.</p>	<p>In accordance with the Diesel Fuel Oil Testing Program</p>
<p>SR 3.8.3.3 Check for and remove accumulated water from each fuel oil storage tank.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

**ATTACHMENT 3**

**Proposed Technical Specification Bases Marked-Up Pages**

**Braidwood Station**

**Adoption of Technical Specification Task Force (TSTF) Traveler TSTF-501,  
Revision 1, "Relocate Stored Fuel Oil and Lube Oil  
Volume Values to Licensee Control"**

**TS Bases Pages**

B 3.8.1-19

B 3.8.3-1

B 3.8.3-3

B 3.8.3-5

B 3.8.3-8

## BASES

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SURVEILLANCE REQUIREMENTS (continued)SR 3.8.1.4

This SR provides verification that the level of fuel oil in ~~each~~the day tank is at or above the level at which fuel oil is automatically added. ~~The level is expressed as an equivalent volume in gallons, and is selected to ensure~~This level ensures adequate fuel oil for a minimum of 1 hour of DG operation at full load plus 10%. ~~The fuel oil level equivalent for one hour supply for the Train A and B DGs is~~  $\geq 450$  gallons.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.8.1.5

Microbiological fouling is a major cause of fuel oil degradation. There are numerous bacteria that can grow in fuel oil and cause fouling, but all must have a water environment in order to survive. Removal of water from the fuel oil day tanks eliminates the necessary environment for bacterial survival. This is the most effective means of controlling microbiological fouling. In addition, it eliminates the potential for water entrainment in the fuel oil during DG operation. Water may come from any of several sources, including condensation, ground water, rain water, contaminated fuel oil, and breakdown of the fuel oil by bacteria. Frequent checking for and removal of accumulated water minimizes fouling and provides data regarding the watertight integrity of the fuel oil system. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program. This SR is for preventative maintenance. The presence of water does not necessarily represent failure of this SR, provided the accumulated water is removed during the performance of this Surveillance.

## B 3.8 ELECTRICAL POWER SYSTEMS

### B 3.8.3 Diesel Fuel Oil

#### BASES

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##### BACKGROUND

Each Diesel Generator (DG) is provided with fuel oil capacity sufficient to operate that diesel for a period of 7 days while the DG is supplying the post loss of coolant accident load demand discussed in the UFSAR, Section 9.5.4.2 (Ref. 1) and Reference 2. The station fuel oil system is comprised of two outside storage tanks (one 50,000 gal and one 125,000 gal) which are the source for all of the fuel oil needs for the station. These outside tanks are normally the source of "new" fuel oil. Each Unit 1 DG is provided with two 25,000 gallon inside storage tanks. Each Unit 2 DG is provided with one 50,000 gallon inside storage tank. These inside storage tanks are the source of the required "stored" fuel oil. This onsite fuel oil capacity is sufficient to operate the DGs for longer than the time to replenish the onsite supply from outside sources.

Fuel oil is transferred from the inside storage tank(s) to the day tank by either of two transfer pumps associated with each DG. Independence of pumps and piping precludes the failure of one pump, or the rupture of any pipe, valve or tank(s) to result in the loss of more than one DG.

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



BASES

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ACTIONS

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

A.1

In this Condition, the 7 day fuel oil supply for a DG is not available. However, the Condition is restricted to fuel oil level reductions that maintain at least a 6 day supply. The fuel oil equivalent to a 6 day supply is 41,138 gallons. These circumstances may be caused by events, such as full load operation required after an inadvertent start while at minimum required level, or feed and bleed operations, which may be necessitated by increasing particulate levels or any number of other oil quality degradations. This restriction allows sufficient time for obtaining the requisite replacement volume and performing the analyses required prior to addition of fuel oil to the tank(s). A period of 48 hours is considered sufficient to complete restoration of the required level prior to declaring the DG inoperable. This period is acceptable based on the remaining capacity (> 6 days), the fact that procedures will be initiated to obtain replenishment, and the low probability of an event during this brief period.

BASES

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SURVEILLANCE  
REQUIREMENTS

SR 3.8.3.1

This SR provides verification that there is an adequate inventory of fuel oil in the storage tanks to support each DG's operation for 7 days at the post loss of coolant accident load demand discussed in the UFSAR, Section 9.5.4.2 (Ref. 1).

The fuel oil level equivalent to a 7 day supply of fuel is 44,000 gallons when calculated in accordance with References 2 and 3. The required fuel storage volume is determined using the most limiting energy content of the stored fuel. Using the known correlation of diesel fuel oil absolute specific gravity or API gravity to energy content, the required diesel generator output, and the corresponding fuel consumption rate, the onsite fuel storage volume required for 7 days of operation can be determined. SR 3.8.3.2 requires new fuel to be tested to verify that the absolute specific gravity or API gravity is within the range assumed in the diesel fuel oil consumption calculations.

The 7 day period is sufficient time to place the unit in a safe shutdown condition and to bring in replenishment fuel from an offsite location.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.8.3.2

The tests of fuel oil prior to addition to the storage tank(s) 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 sampling (and associated results) of new fuel and addition of new fuel oil to the storage tank to exceed 30 days. The tests, limits, and applicable ASTM Standards for the tests listed in the Diesel Fuel Oil Testing Program of Specification 5.5.13 are as follows:

BASES

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REFERENCES

1. UFSAR, Section 9.5.4.2.
2. Regulatory Guide 1.137.
3. ANSI N195, ~~-1976, Appendix B.~~
4. UFSAR, Chapter 6.
5. UFSAR, Chapter 15.
6. ASTM Standards: D4057-95; D975-98b; D1298-99;  
D4176-93; D2709-96e; D1552-95; D2622-98; D4294-98;  
D5452-98.
7. ASTM Standards, D975-98b, Table 1.

**ATTACHMENT 4**

**Proposed Technical Specification Marked-Up Pages**

**Byron Station**

**Adoption of Technical Specification Task Force (TSTF) Traveler TSTF-501,  
Revision 1, "Relocate Stored Fuel Oil and Lube Oil  
Volume Values to Licensee Control"**

**TS Pages**

3.8.1-7

3.8.3-1

3.8.3-2

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.4	Verify each day tank contains $\geq$ <del>450-gal</del> <b>hour supply</b> of fuel oil.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.5	Check for and remove accumulated water from each day tank.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.6	Verify the fuel oil transfer system operates to automatically transfer fuel oil from storage tank(s) to the day tank.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.7	Verify each DG starts from normal standby condition and achieves: <ul style="list-style-type: none"> <li>a. In <math>\leq</math> 10 seconds, voltage <math>\geq</math> 3950 V and frequency <math>\geq</math> 58.8 Hz; and</li> <li>b. Steady state voltage <math>\geq</math> 3950 V and <math>\leq</math> 4370 V, and frequency <math>\geq</math> 59.5 Hz and <math>\leq</math> 60.5 Hz.</li> </ul>	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.8	Verify manual transfer of AC power sources from the required normal qualified circuit(s) to the reserve required qualified circuit(s).	In accordance with the Surveillance Frequency Control Program

(continued)

3.8 ELECTRICAL POWER SYSTEMS

3.8.3 Diesel Fuel Oil

LC0 3.8.3 The stored diesel fuel oil shall be within limits for each required Diesel Generator (DG).

APPLICABILITY: When associated DG is required to be OPERABLE.

ACTIONS

-----NOTE-----  
Separate Condition entry is allowed for each DG.  
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CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more DGs with stored fuel volume <del>&lt; 44,000 gal</del> less than a 7 day supply and <del>&gt; 41,138 gal</del> greater than a 6 day supply of fuel oil <del>in storage tank(s)</del> .	A.1 Restore stored fuel oil volume to within limits.	48 hours
B. One or more DGs with stored fuel oil total particulates not within limit.	B.1 Restore fuel oil total particulates within limit.	7 days
C. One or more DGs with new fuel oil properties not within limits.	C.1 Restore stored fuel oil properties to within limits.	30 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>D. Required Action and associated Completion Time of Conditions A, B, or C not met.</p> <p><u>OR</u></p> <p>One or more DGs with diesel fuel oil not within limits for reasons other than Condition A, B, or C.</p>	<p>D.1 Declare associated DG inoperable.</p>	<p>Immediately</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.3.1 Verify each DG fuel oil storage tank(s) contains <math>\geq</math> a 7 day supply <del>44,000 gal</del> of fuel.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.8.3.2 Verify fuel oil properties of new and stored fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program.</p>	<p>In accordance with the Diesel Fuel Oil Testing Program</p>
<p>SR 3.8.3.3 Check for and remove accumulated water from each fuel oil storage tank.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

**ATTACHMENT 5**

**Proposed Technical Specification Bases Marked-Up Pages**

**Byron Station**

**Adoption of Technical Specification Task Force (TSTF) Traveler TSTF-501,  
Revision 1, "Relocate Stored Fuel Oil and Lube Oil  
Volume Values to Licensee Control"**

**TS Bases Pages**

B 3.8.1-19

B 3.8.3-1

B 3.8.3-3

B 3.8.3-5

B 3.8.3-8



## BASES

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SURVEILLANCE REQUIREMENTS (continued)SR 3.8.1.4

This SR provides verification that the level of fuel oil in ~~the each~~ day tank is at or above the level at which fuel oil is automatically added. ~~The level is expressed as an equivalent volume in gallons, and is selected to ensure~~This level ensures adequate fuel oil for a minimum of 1 hour of DG operation at full load plus 10%. ~~The fuel oil level equivalent for one hour supply for the Train A and B DGs is~~  $\geq 450$  gallons.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.8.1.5

Microbiological fouling is a major cause of fuel oil degradation. There are numerous bacteria that can grow in fuel oil and cause fouling, but all must have a water environment in order to survive. Removal of water from the fuel oil day tanks eliminates the necessary environment for bacterial survival. This is the most effective means of controlling microbiological fouling. In addition, it eliminates the potential for water entrainment in the fuel oil during DG operation. Water may come from any of several sources, including condensation, ground water, rain water, contaminated fuel oil, and breakdown of the fuel oil by bacteria. Frequent checking for and removal of accumulated water minimizes fouling and provides data regarding the watertight integrity of the fuel oil system. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program. This SR is for preventative maintenance. The presence of water does not necessarily represent failure of this SR, provided the accumulated water is removed during the performance of this Surveillance.

## B 3.8 ELECTRICAL POWER SYSTEMS

### B 3.8.3 Diesel Fuel Oil

#### BASES

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##### BACKGROUND

Each Diesel Generator (DG) is provided with fuel oil capacity sufficient to operate that diesel for a period of 7 days while the DG is supplying the post loss of coolant accident load demand discussed in the UFSAR, Section 9.5.4.2 (Ref. 1) and Reference 2. The station fuel oil system is comprised of two outside storage tanks (one 50,000 gal and one 125,000 gal) which are the source for all of the fuel oil needs for the station. These outside tanks are normally the source of "new" fuel oil. Each Unit 1 DG is provided with two 25,000 gallon inside storage tanks. Each Unit 2 DG is provided with one 50,000 gallon inside storage tank. These inside storage tanks are the source of the required "stored" fuel oil. This onsite fuel oil capacity is sufficient to operate the DGs for longer than the time to replenish the onsite supply from outside sources.

Fuel oil is transferred from the inside storage tank(s) to the day tank by either of two transfer pumps associated with each DG. Independence of pumps and piping precludes the failure of one pump, or the rupture of any pipe, valve or tank(s) to result in the loss of more than one DG.

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

BASES

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ACTIONS

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

A.1

In this Condition, the 7 day fuel oil supply for a DG is not available. However, the Condition is restricted to fuel oil level reductions that maintain at least a 6 day supply. The fuel oil equivalent to a 6 day supply is 41,138 gallons. These circumstances may be caused by events, such as full load operation required after an inadvertent start while at minimum required level, or feed and bleed operations, which may be necessitated by increasing particulate levels or any number of other oil quality degradations. This restriction allows sufficient time for obtaining the requisite replacement volume and performing the analyses required prior to addition of fuel oil to the tank(s). A period of 48 hours is considered sufficient to complete restoration of the required level prior to declaring the DG inoperable. This period is acceptable based on the remaining capacity (> 6 days), the fact that procedures will be initiated to obtain replenishment, and the low probability of an event during this brief period.

BASES

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SURVEILLANCE  
REQUIREMENTS

SR 3.8.3.1

This SR provides verification that there is an adequate inventory of fuel oil in the storage tanks to support each DG's operation for 7 days at the post loss of coolant accident load demand discussed in the UFSAR, Section 9.5.4.2 (Ref. 1).

The fuel oil level equivalent to a 7 day supply of fuel is 44,000 gallons when calculated in accordance with References 2 and 3. The required fuel storage volume is determined using the most limiting energy content of the stored fuel. Using the known correlation of diesel fuel oil absolute specific gravity or API gravity to energy content, the required diesel generator output, and the corresponding fuel consumption rate, the onsite fuel storage volume required for 7 days of operation can be determined. SR 3.8.3.2 requires new fuel to be tested to verify that the absolute specific gravity or API gravity is within the range assumed in the diesel fuel oil consumption calculations.

The 7 day period is sufficient time to place the unit in a safe shutdown condition and to bring in replenishment fuel from an offsite location.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.8.3.2

The tests of fuel oil prior to addition to the storage tank(s) 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 sampling (and associated results) of new fuel and addition of new fuel oil to the storage tank to exceed 30 days. The tests, limits, and applicable ASTM Standards for the tests listed in the Diesel Fuel Oil Testing Program of Specification 5.5.13 are as follows:

BASES

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- REFERENCES
1. UFSAR, Section 9.5.4.2.
  2. Regulatory Guide 1.137.
  3. ANSI N195-, 1976, ~~Appendix B.~~
  4. UFSAR, Chapter 6.
  5. UFSAR, Chapter 15.
  6. ASTM Standards: D4057-95; D975-06b; D1298-99;  
D4176-93; D2709-96e; D1552-95; D2622-98; D4294-98;  
D3120-06; D5453-06; D5452-98.
  7. ASTM Standards, D975-06b, Table 1.