

RS-10-148

10 CFR 50.90

October 8, 2010

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

Clinton Power Station, Unit 1
Facility Operating License No. NPF-62
NRC Docket No. 50-461

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

- References:
- (1) Technical Specifications Task Force (TSTF) Traveler TSTF-501, Revision 1, Relocate Stored Fuel Oil and Lube Oil Volume Values to Licensee Control
 - (2) Notice of Availability of the Models for Plant-Specific Adoption of Technical Specifications Task Force Traveler TSTF-501, Revision 1, 'Relocate Stored Fuel Oil and Lube Oil Volume Values to Licensee Control,' Federal Register published May 26, 2010 (75 FR 29588)

In accordance with 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit," Exelon Generation Company, LLC (EGC) is submitting a request for an amendment to the Technical Specifications (TS) of Facility Operating License No. NPF-62 for Clinton Power Station, Unit 1 (CPS).

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

Regarding stored diesel fuel oil and lube oil, no changes to the current plant configuration, or current 7-day basis, are proposed in this application; however, EGC is proposing to revise the numerical 7-day and 6-day volume requirements for the Division 1 DG to rectify a TS 3.8.3 non-conservatism. Administrative controls are currently in place at CPS to address the non-conservatism in accordance with NRC Administrative Letter 98-10, "Dispositioning of Technical Specifications That Are Insufficient to Assure Plant Safety."

Regarding the remaining TS 3.8.3 fuel oil and lube oil volume requirements, this proposal merely swaps the current numerical volume requirements from the TS to the TS Bases and swaps the associated current 7-day basis from the TS Bases to the TS. 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 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 (CLIP).

TSTF Traveler-501, Revision 1, assumes that the current licensing basis requires that a 7-day supply of stored diesel fuel oil and lube oil be available for each diesel generator. For CPS, the required volume of fuel oil is determined using the maximum post loss of coolant accident (LOCA) loads for each diesel generator.

This request is subdivided as follows:

- Attachment 1 provides an evaluation of the proposed changes.
- Attachment 2 provides markup pages of existing TS and TS Bases to show the proposed change.
- Attachment 3 provides revised (clean) TS pages.

EGC requests approval of the proposed license amendment by October 8, 2011, with the amendment being implemented within 60 days of issuance.

In accordance with 10 CFR 50.91(a)(1), "Notice for Public Comment," the analysis about the issue of no significant hazards consideration using the standards in 10 CFR 50.92 is being provided to the NRC.

The proposed amendment has been reviewed by the CPS Plant Operations Review Committee and approved by the Nuclear Safety Review Board in accordance with the requirements of the EGC Quality Assurance Program.

EGC is notifying the State of Illinois of this application for a change to the TS by sending a copy of this letter and its attachments to the designated State Official in accordance with 10 CFR 50.91, "Notice for public comment; State consultation," paragraph (b).

There are no regulatory commitments contained within this letter. Should you have any questions concerning this letter, please contact Mitchel Mathews at (630) 657-2819.

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I declare under penalty of perjury that the foregoing is true and correct. Executed on the 8th day of October 2010.

Respectfully,

A handwritten signature in black ink, appearing to read "Jeffrey L. Hansen", written over a faint, larger version of the same signature.

Jeffrey L. Hansen
Manager - Licensing and Regulatory Affairs

Attachment 1: Evaluation of Proposed Change
Attachment 2: Markup pages of existing TS and TS Bases to show the proposed change.
Attachment 3: Clean TS Pages

cc: Illinois Emergency Management Agency – Division of Nuclear Safety

ATTACHMENT 1
Evaluation of Proposed Change

Subject: Request for a License Amendment to Technical Specification 3.8.3, Diesel Fuel Oil and Starting Air to Relocate Stored Fuel Oil Volumes to Licensee Control

- 1.0 DESCRIPTION
- 2.0 PROPOSED CHANGE
- 3.0 BACKGROUND
- 4.0 TECHNICAL ANALYSIS
- 5.0 REGULATORY SAFETY ANALYSIS
 - 5.1 No Significant Hazards Consideration Determination
 - 5.2 Applicable Regulatory Requirements/Criteria
- 6.0 ENVIRONMENTAL CONSIDERATION
- 7.0 REFERENCE

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Evaluation of Proposed Change

1.0 DESCRIPTION

The proposed changes revise Technical Specifications (TS) 3.8.3, "Diesel Fuel Oil, Lube Oil, and Starting Air," by relocating the current stored diesel fuel oil and lube oil numerical volume requirements from the TS to the TS Bases so that they may be modified under licensee control. The TS are modified so that the stored diesel fuel oil and lube oil inventory will require that a 7-day supply be available for each diesel generator. This change is consistent with NRC-approved Technical Specification 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." Two minor variations between the proposed plant-specific TS changes, and the changes proposed by TSTF-501 are listed in Section 2.0.

The availability of this TS improvement was announced in the *Federal Register* on May 26, 2010, (i.e., 75 FR 29588) as part of the consolidated line item improvement process (CLIIP).

2.0 PROPOSED CHANGE

The proposed changes revise TS 3.8.3 by relocating the current stored diesel fuel oil and lube oil numerical volume requirements from the TS to the TS Bases so that they may be modified under licensee control. The TS are modified so that the stored diesel fuel oil and lube oil inventory will require that a 7-day supply be available for each diesel generator. As a result:

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

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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.

EGC is proposing two minor variations from the TS changes described in TSTF-501, Revision 1, and the NRC staff's model safety evaluation (SE) published in the Federal Register on May 26, 2010, (i.e., 75 FR 29588) as part of the CLIP Notice of Availability as follows. First, the model SE describes the two calculation methods for determining sufficient volumes of stored fuel oil for onsite standby DGs in accordance with Regulatory Guide (RG) 1.137, "Fuel-Oil Systems for Standby Diesel Generators." These two calculation methods are: 1) determine the volume of fuel oil required to supply power to the diesel generators (DGs) time-dependent loads for seven days with an additional volume margin of 10%, or 2) determine the volume of fuel oil required to operate the DG at its rated capacity for seven days. In contrast, the CPS Diesel Fuel Oil Storage and Transfer System is designed to provide sufficient storage and supply capabilities of diesel fuel oil to ensure operation of the Emergency Diesel Generators for a minimum of seven days at maximum post-LOCA load demands as discuss CPS Updated Safety Analysis Report (USAR) Section 9.5.4, "Diesel Fuel Oil Storage and Transfer System." Consequently, the 7-day and 6-day fuel oil volume requirements for the CPS DGs were determined by applying the fuel oil consumption rates while each DG is providing its associated maximum post-LOCA load demands. EGC considered this a minor variation from the RG 1.137 calculation methods discussed in the model SE.

Secondly, when fuel oils from the spectrum of American Petroleum Institute (API) gravities allowed by CPS TS 5.5.9, "Diesel Fuel Oil Testing Program," were considered in fuel oil consumption calculations for the Division 1, Division 2, and Division 3 DGs, it was determined that 7-day and 6-day volume requirements listed in TS 3.8.3 for the Division 1 DG were non-conservative. The current volume requirements for the Division 2 and Division 3 DGs remain conservative. Administrative controls are in place at CPS to address the TS 3.8.3 non-conservatism in accordance with NRC Administrative Letter 98-10, "Dispositioning of Technical Specifications That Are Insufficient to Assure Plant Safety." However, in order to rectify this non-conservatism, a revision to the numerical volume requirements for the Division 1 DG was required. The methodology employed to determine the revised fuel oil volume requirements for the Division 1 DG is discussed in Section 4.0 below.

No variations to TSTF-501, Revision 1, or the NRC staff's model safety evaluation (SE) published in the Federal Register on May 26, 2010, (i.e., 75 FR 29588) are proposed beyond the CPS fuel oil storage requirements discussed in USAR Section 9.5.4 and the revision to the 7-day and 6-day fuel oil storage requirements for the Division 1 DG.

3.0 BACKGROUND

The background for this application is addressed by the model safety evaluation referenced in the NRC's Notice of Availability published on May 26, 2010 (75 FR 29588) and TSTF-501, Revision 1.

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Evaluation of Proposed Change

4.0 TECHNICAL ANALYSIS

EGC has reviewed the model SE published in the Federal Register on May 26, 2010, (i.e., 75 FR 29588) as part of the CLIP Notice of Availability. EGC has concluded that the technical justifications presented in the SE prepared by the NRC staff are applicable to Clinton Power Station, Unit 1 (CPS) and therefore justify this amendment for the incorporation of the proposed changes to the CPS TS. However, due to the identification of non-conservative fuel oil volume requirements for the Division 1 DG, EGC is requesting NRC review of a variation from the model application referenced in 75 FR 29588. Specifically, EGC is proposing to revise the 7-day and 6-day fuel oil requirements for the Division 1 DG.

As discussed in Section 2.0 above, EGC evaluated the fuel oil requirement for the Division 1, Division 2, and Division 3 DG using maximum post-LOCA load demands as described in CPS USAR Section 9.5.4. The revised fuel oil requirements for the Division 1 DG were determined as follows:

At CPS, the requirements for diesel fuel oil are controlled under TS 5.5.9. This program includes sampling and testing requirements, and acceptance criteria for fuel oil. One acceptance criterion for the receipt of new fuel oil on site according to TS 5.5.9 is API gravity. At CPS the range of acceptable API gravities is 30 to 38.

It is well known that the National Bureau of Standards developed a correlation between fuel oil API Gravity and energy content in 1933. This relationship is shown in Table 1 below. The required fuel oil storage values were calculated using the most limiting API gravity, and therefore the most limiting fuel energy content.

As long as the fuel oil placed in the storage tanks is within the API gravity band allowed by the CPS Diesel Fuel Oil Testing Program, the calculations of fuel consumption and required stored volume remain valid.

Table 1: Typical Gross Heat Content of Diesel Fuel from Bureau of Standards, Miscellaneous Publication No 97; Thermal Properties of Petroleum Products, April 28, 1933

API	Gross Heat Content (BTU/gal)	API	Gross Heat Content (BTU/gal)
44	133500	26	144300
42	134700	24	145600
40	135800	22	146800
38	137000	20	148100
36	138200	18	149400
34	139400	16	150700
32	140600	14	152000
30	141800	12	153300
28	143100	10	154600

ATTACHMENT 1 Evaluation of Proposed Change

Additionally, fuel oil storage tank volumes are measured in gallons at CPS. Therefore, when determining the required number of gallons to meet the volumetric requirement for seven days and six days of Division 1 DG operation, EGC considered fuel oil with the lowest gross heat content per gallon (i.e., fuel oil with an API gravity of 38) from the range of API gravities allowed by the CPS Diesel Fuel Oil Testing Program. To determine the required amount of fuel oil to operate the Division 1 DG for seven days and six days, EGC conservatively used the maximum Division 1 DG post-LOCA load demand and applied it for the entire 7-day and 6-day periods to determine fuel oil consumption rates and storage requirements. As shown in Figures 1 and 2 below, there is considerable margin between the amounts of ultra-low sulfur diesel fuel oil (i.e., S15 @ 60 °F) determined to be needed to operate the Division 1 DG at the maximum post-LOCA load for six days and seven days and the proposed revised 6-day and 7-day fuel oil volume requirements as shown in the attached markup of the TS Bases Section 3.8.3. Moreover, margin exists over the entire range of API gravities allowed by the CPS Fuel Oil Testing Program.

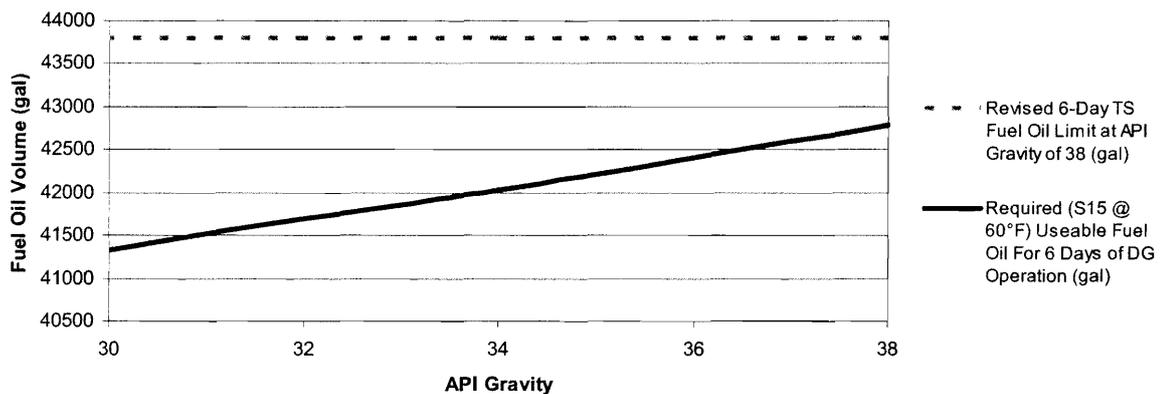


Figure 1: Revised Division 1 Diesel Generator 6-Day Fuel Oil Storage Requirements

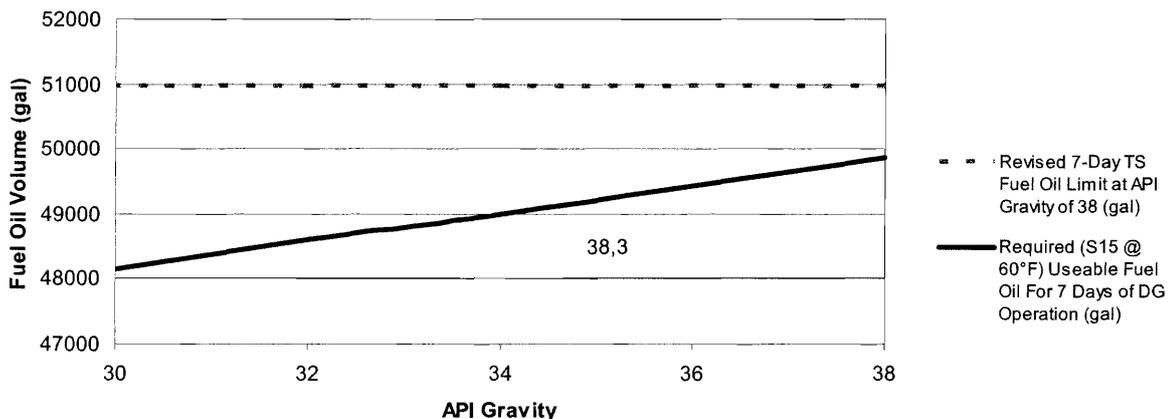


Figure 2: Revised Division 1 Diesel Generator 7-Day Fuel Oil Storage Requirements

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REGULATORY SAFETY ANALYSIS

5.1 No Significant Hazards Consideration Determination

Exelon Generation Company, LLC (EGC) has evaluated the proposed changes to the Technical Specifications (TS) using the criteria in 10 CFR 50.92 and has determined that the proposed changes do not involve a significant hazards consideration.

Description of Amendment Request: The proposed changes revise the Clinton Power Station (CPS) TS Section 3.8.3, "Diesel Fuel Oil and Starting Air," by relocating the numerical volume requirements for stored diesel fuel oil inventory from the TS to the TS Bases so that they may be modified under licensee control. The numerical volume requirements are based on a 7-day supply. The TS are modified so that the stored diesel fuel oil and lube oil inventory will require that a 7-day supply be available for each diesel generator.

Basis for proposed no significant hazards determination: As required by 10 CFR 50.91(a), the EGC analysis of the issue of no significant hazards consideration is presented below:

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

Response: No

The proposed change relocates the volume of diesel fuel oil and lube oil required to support 7-day operation of the onsite diesel generators, and the volume equivalent to a 6-day supply, to licensee control. The specific volume of fuel oil equivalent to a 7- and 6-day supply is calculated using the maximum post loss of coolant accident load demands applied for the entire seven day and six day periods. The specific volume of lube oil equivalent to a 7- and 6-day supply is based on the diesel generator manufacturer's consumption values for the run time of the diesel generator. Because the requirement to maintain a 7-day supply of diesel fuel oil and lube oil is not changed and is consistent with the assumptions in the accident analyses, and the actions taken when the volume of fuel oil and lube oil are less than a 6-day supply have not changed, neither the probability nor the consequences of any accident previously evaluated will be affected. Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

Response: No

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

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Evaluation of Proposed Change

proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

Response: No

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

5.2 Applicable Regulatory Requirements/Criteria

A description of the proposed TS change and its relationship to applicable regulatory requirements were published in the Federal Register Notice of Availability on May 26, 2010 (i.e., 75 FR 29588), and TSTF-501, Revision 1. EGC has reviewed the NRC staff's model safety evaluation (SE) referenced in the CLIP Notice of Availability and concluded that the regulatory evaluation section is applicable to CPS.

6.0 ENVIRONMENTAL CONSIDERATION

EGC has evaluated this proposed operating license amendment consistent with 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. The proposed change will modify 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 change does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, EGC has determined that this proposed change meets the criteria for a categorical exclusion set forth in paragraph (c)(9) of 10 CFR 51.22, Criterion for categorical exclusion; identification of licensing and regulatory actions eligible for categorical exclusion or otherwise not requiring environmental review. Therefore, in accordance with 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed change.

7.0 REFERENCE

Notice of Availability of the Models for Plant-Specific Adoption of Technical Specifications Task Force Traveler TSTF-501, Revision 1, "Relocate Stored Fuel Oil and Lube Oil Volume Values to Licensee Control," Federal Register published May 26, 2010 (75 FR 29588)

ATTACHMENT 2

CLINTON POWER STATION
UNIT 1

Docket No. 50-461

License No. NPF-62

**Markup Pages of Existing Technical Specifications (TS) and TS Bases to Show the
Proposed Change**

MARKUP OF EXISTING REVISED TS PAGES

3.8-20

3.8-21

3.8-22

MARKUP OF EXISTING TS BASES PAGES

B 3.8-42

B 3.8-43

B 3.8-44

B 3.8-45

B 3.8-48

3.8 ELECTRICAL POWER SYSTEMS

3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air

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

APPLICABILITY: When associated DG is required to be OPERABLE.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. One or more DGs with fuel oil level ±</p> <p>1- For DG 1A, < 48,000 gal and ≥ 41,143 gal;</p> <p>2- For DG 1B, < 45,000 gal and ≥ 38,572 gal; and</p> <p>3- For DG 1C, < 29,500 gal and ≥ 25,286 gal.</p>	<p>A.1 Restore fuel oil level to within limits.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> less than a 7 day supply and greater than or equal to a 6 day supply. </div>	<p>48 hours</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. One or more DGs with lube oil inventory:</p> <p>1. For each 16 cylinder engine, < 347 gal and ≥ 327 gal; and</p> <p>2. For each 12 cylinder engine, < 284 gal and ≥ 269 gal.</p>	<p>B.1 Restore lube oil inventory to within limits.</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <p>less than a 7 day supply and greater than or equal to a 6 day supply.</p> </div>	<p>48 hours</p>
<p>C. One or more DGs with stored fuel oil total particulates not within limit.</p>	<p>C.1 Restore fuel oil total particulates to within limit.</p>	<p>7 days</p>
<p>D. One or more DGs with new fuel oil properties not within limits.</p>	<p>D.1 Restore stored fuel oil properties to within limits.</p>	<p>30 days</p>
<p>E. One or more DGs with required starting air receiver pressure < 200 psig and ≥ 140 psig.</p>	<p>E.1 Restore starting air receiver pressure to ≥ 200 psig.</p>	<p>48 hours</p>

(continued)

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.3.1 Verify each fuel oil storage tank contains+</p> <p>a. ≥ 48,000 gal of fuel for DG 1A;</p> <p>b. ≥ 45,000 gal of fuel for DG 1B; and</p> <p>c. ≥ 29,500 gal of fuel for DG 1C.</p>	<p>31 days</p> <div style="border: 1px solid black; padding: 2px; width: fit-content; margin-left: 20px;"> <p>≥ a 7 day supply of fuel.</p> </div>
<p>SR 3.8.3.2 Verify lube oil inventory is+</p> <p>a. ≥ 347 gal for each 16 cylinder engine; and</p> <p>b. ≥ 284 gal for each 12 cylinder engine.</p>	<p>31 days</p> <div style="border: 1px solid black; padding: 2px; width: fit-content; margin-left: 20px;"> <p>≥ a 7 day supply for each diesel engine.</p> </div>

(continued)

BASES (continued)

APPLICABILITY The AC sources, LCO 3.8.1 and LCO 3.8.2, are required to ensure the availability of the required power to shut down the reactor and maintain it in a safe shutdown condition after an AOO or a postulated DBA. Since stored diesel fuel oil, lube oil, and starting air subsystem support LCO 3.8.1 and LCO 3.8.2, stored diesel fuel oil, lube oil, and starting air are required to be within limits when the associated DG is required to be OPERABLE.

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

The fuel oil level equivalent to a 6 day supply for the Division 1 DG is 43,810 gallons, for the Division 2 DG is 38,572 gallons, and for the Division 3 DG is 25,286 gallons.

A.1

In this Condition, the 7 day fuel oil supply for a DG is not available. However, the Condition is restricted to fuel oil level reductions that maintain at least a 6 day supply. [^]
These circumstances may be caused by events such as:

- a. Full load operation required after an inadvertent start while at minimum required level; or
- b. Feed and bleed operations that 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 the fuel oil to the tank. A period of 48 hours is considered sufficient to complete restoration of the required level prior to declaring the DG inoperable. This period is acceptable based on the remaining capacity (> 6 days), the fact that procedures will be initiated to obtain replenishment, and the low probability of an event during this brief period.

(continued)

BASES

ACTIONS

The lube oil equivalent to a 6 day supply for each 16 cylinder diesel engine is 327 gallons and for each 12 cylinder diesel engine is 269 gallons.

B.1

In this Condition, the 7 day

i.e.,

With lube oil inventory ~~less than required~~, sufficient lube oil to support 7 days of continuous DG operation at full load conditions, ~~may not be available~~. However, the Condition is restricted to lube oil volume reductions that maintain at least a 6 day supply. This restriction allows sufficient time for obtaining the requisite replacement volume. A period of 48 hours is considered sufficient to complete restoration of the required volume prior to declaring the DG inoperable. This period is acceptable based on the remaining capacity (> 6 days), the low rate of usage, the fact that procedures will be initiated to obtain replenishment, and the low probability of an event during this brief period.

, is

C.1

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

D.1

With the new fuel oil properties defined in the Bases for SR 3.8.3.3 not within the required limits, a period of 30 days is allowed for restoring the stored fuel oil properties. This period provides sufficient time to test the stored fuel oil to determine that the new fuel oil, when mixed with previously stored fuel oil, remains acceptable, to restore the stored fuel oil properties. This restoration

(continued)

BASES

ACTIONS

D.1 (continued)

may involve feed and bleed procedures, filtering, or a combination of these procedures. Even if a DG start and load was required during this time interval and the fuel oil properties were outside limits, there is high likelihood that the DG would still be capable of performing its intended function.

E.1

With the required starting air receiver pressure < 200 psig, sufficient capacity for multiple DG start attempts may not exist. However, as long as the receiver pressure is ≥ 140 psig, there is adequate capacity for at least one start attempt, and the DG can be considered OPERABLE while the air receiver pressure is restored to the required limit. A period of 48 hours is considered sufficient to complete restoration to the required pressure prior to declaring the DG inoperable. This period is acceptable based on the remaining air start capacity, the fact that most DG starts are accomplished on the first attempt, and the low probability of an event during this brief period.

F.1

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

SURVEILLANCE
REQUIREMENTS

SR 3.8.3.1

This SR provides verification that there is an adequate inventory of fuel oil in the storage tanks to support each DG's operation for 7 days at maximum expected post LOCA loading. 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.

TS Bases Insert 1

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.8.3.1 (continued)

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

With regard to fuel oil inventory values obtained pursuant to this SR, as read from plant indication instrumentation, the specified limit is considered to be a nominal value and therefore does not require compensation for instrument indication uncertainties (Ref. 11).

The lube oil level equivalent to a 7 day supply for each 16 cylinder diesel engine is 347 gallons and for each 12 cylinder diesel engine is 284 gallons and

SR 3.8.3.2

This Surveillance ensures that sufficient lube oil inventory is available to support at least 7 days of maximum expected post LOCA load operation for each DG. ~~This minimum volume requirement~~ is based on the DG manufacturer's 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 maximum expected post LOCA load operation without the level reaching the manufacturer's recommended minimum level.

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

With regard to lube oil inventory values obtained pursuant to this SR, as read from plant indication instrumentation, the specified limit is considered to be a nominal value and therefore does not require compensation for instrument indication uncertainties (Ref. 8).

SR 3.8.3.3

The tests of fuel oil prior to addition to the storage tanks are a means of determining whether new fuel oil is of the appropriate grade and has not been contaminated with substances that would have an immediate detrimental impact on diesel engine combustion and operation. 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 the sample (and corresponding results) of new fuel and addition of new fuel oil to the storage tanks to exceed 31 days. The limits and applicable ASTM Standards for the

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.8.3.4 (continued)

With regard to air start capacity values obtained pursuant to this SR, as read from plant indication instrumentation, the specified limit is considered to be a nominal value and therefore does not require compensation for instrument indication uncertainties (Ref. 10).

SR 3.8.3.5

Microbiological fouling is a major cause of fuel oil degradation. There are numerous bacteria that can grow in fuel oil and cause fouling, but all must have a water environment in order to survive. Removal of water from the storage tanks once every 92 days eliminates the necessary environment for bacterial survival. This is the most effective means of controlling microbiological fouling. In addition, it eliminates the potential for water entrainment in the fuel oil during DG operation. Water may come from any of several sources, including condensation, contaminated fuel oil, and from breakdown of the fuel oil by bacteria.

Frequent checking for and removal of accumulated water minimizes fouling and provides data regarding the watertight integrity of the fuel oil system. The Surveillance Frequencies are established by Regulatory Guide 1.137 (Ref. 2). This SR is for preventive maintenance. The presence of water does not necessarily represent a failure of this SR provided that accumulated water is removed during performance of the Surveillance.

REFERENCES

1. USAR, Section 9.5.4.
2. Regulatory Guide 1.137.
3. ANSI N195, ~~Appendix B~~, 1976.
4. USAR, Chapter 6.
5. USAR, Chapter 15.
6. ASTM Standards: D4057-95; D1298-99; D975-06b; D4176-93; D6217-98.
7. Deleted.
8. Calculation IP-0-0120.
9. Calculation IP-0-0121.
10. Calculation IP-0-0122.
11. Calculation IP-C-0111.

Technical Specifications Bases Insert No. 1

The fuel oil level equivalent to a 7 day supply at the maximum post-LOCA load demand for the Division 1 DG is 51,000 gallons, for the Division 2 DG is 45,000 gallons, and for the Division 3 DG is 29,500 gallons. The required fuel storage volume is determined using the most limiting energy content of the stored fuel. Using the known correlation of diesel fuel oil absolute specific gravity or API gravity to energy content, the required diesel generator output, and the corresponding fuel consumption rate, the onsite fuel storage volume required for 7 days of operation can be determined. SR 3.8.3.3 requires new fuel to be tested to verify that the absolute specific gravity or API gravity is within the range assumed in the diesel fuel oil consumption calculations.

ATTACHMENT 3

CLINTON POWER STATION
UNIT 1

Docket No. 50-461

License No. NPF-62

Revised Technical Specifications (Clean) Pages

REVISED TS PAGES

3.8-20

3.8-21

3.8-22

3.8 ELECTRICAL POWER SYSTEMS

3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air

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

APPLICABILITY: When associated DG is required to be OPERABLE.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more DGs with fuel oil level less than a 7 day supply and greater than or equal to a 6 day supply.	A.1 Restore fuel oil level to within limits.	48 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or more DGs with lube oil inventory less than a 7 day supply and greater than or equal to a 6 day supply..	B.1 Restore lube oil inventory to within limits.	48 hours
C. One or more DGs with stored fuel oil total particulates not within limit.	C.1 Restore fuel oil total particulates to within limit.	7 days
D. One or more DGs with new fuel oil properties not within limits.	D.1 Restore stored fuel oil properties to within limits.	30 days
E. One or more DGs with required starting air receiver pressure < 200 psig and ≥ 140 psig.	E.1 Restore starting air receiver pressure to ≥ 200 psig.	48 hours

(continued)

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.3.1 Verify each fuel oil storage tank contains \geq a 7 day supply of fuel.</p>	<p>31 days</p>
<p>SR 3.8.3.2 Verify lube oil inventory is \geq a 7 day supply for each diesel engine.</p>	<p>31 days</p>

(continued)