

**Southern Nuclear  
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October 8, 2008



Docket Nos.: 50-348  
50-364

NL-08-0535

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

**Joseph M. Farley Nuclear Plant  
Application for Technical Specification Change TSTF-374, Revision  
to TS 5.5.13 and Associated TS Bases for Diesel Fuel Oil  
Using Consolidated Line Item Improvement Process**

Ladies and Gentlemen:

In accordance with the provisions of 10 CFR 50.90, Southern Nuclear Operating Company (SNC) is submitting a request for an amendment to the Technical Specifications (TS) for Joseph M. Farley (FNP) Unit 1 and Unit 2.

The proposed amendment would modify TS by relocating references to specific American Society for Testing and Materials (ASTM) standards for fuel oil testing to licensee-controlled documents and adding alternate criteria to the "clear and bright" acceptance test for new fuel oil.

Enclosure 1 provides a description of the proposed change, the requested confirmation of applicability, and plant-specific verifications. Enclosure 2 provides the existing TS pages marked up to show the proposed change. Enclosure 3 provides revised (clean) TS pages. Enclosure 4 provides the existing TS Bases pages marked up to show the proposed change (*for information only*).

SNC requests approval of the proposed license amendment by March 19, 2009, with the amendment being implemented within 60 days of approval. This requested schedule is consistent with the CLIP process and this amendment is also needed to support use of Ultra Low Sulfur Diesel Fuel at FNP.

In accordance with 10 CFR 50.91, a copy of this application, with enclosures, is being provided to the designated Alabama Official.

(Affirmation and signature are provided on the following page)

Mr. M. J. Ajluni states that he is the Nuclear Licensing Manager of Southern Nuclear Operating Company, is authorized to execute this oath on behalf of Southern Nuclear Operating Company and to the best of his knowledge and belief, the facts set forth in this letter are true.

This letter contains no NRC commitments. If you have any questions, please advise.

Respectfully submitted,

SOUTHERN NUCLEAR OPERATING COMPANY

*Mark J. Ajluni*

M. J. Ajluni  
Nuclear Licensing Manager

Sworn to and subscribed before me this 8<sup>th</sup> day of October, 2008.

*Patricia H. Raymond*  
Notary Public

My commission expires: 7-21-2012

MJA/SYA/phr

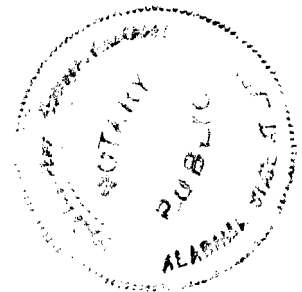
Enclosures:

1. Description and Assessment
2. Proposed Technical Specification Changes
3. Revised Technical Specification Pages
4. Proposed Changes to the Technical Specifications Bases Pages

cc: Southern Nuclear Operating Company  
Mr. J. T. Gasser, Executive Vice President  
Mr. J. R. Johnson, Vice President – Farley  
Mr. D. H. Jones, Vice President – Engineering  
RTYPE: CFA04.054; LC# 14711

U. S. Nuclear Regulatory Commission  
Mr. L. A. Reyes, Regional Administrator  
Mr. K. D. Feintuch, NRR Project Manager – Farley  
Mr. E. L. Crowe, Senior Resident Inspector – Farley

Alabama Department of Public Health  
Dr. D. E. Williamson, State Health Officer



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**Enclosure 1**

**Description and Assessment**

**Joseph M. Farley Nuclear Plant**  
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**to TS 5.5.13 and Associated Bases for Diesel Fuel Oil**  
**Using Consolidated Line Item Improvement Process**

**Enclosure 1**

**Description and Assessment**

Table of Contents

- 1.0 Description
- 2.0 Assessment
  - 2.1 Applicability of TSTF-374, and Published Safety Evaluation
  - 2.2 Optional Changes and Variations
- 3.0 Regulatory Analysis
  - 3.1 No Significant Hazards Consideration Determination
  - 3.2 Verification
- 4.0 Environmental Evaluation
- 5.0 References

## Enclosure 1

### Description and Assessment

#### 1.0 Description

The proposed amendment would modify Technical Specifications (TS) by relocating references to specific American Society for Testing and Materials (ASTM) standards for fuel oil testing to licensee-controlled documents and adding alternate criteria to the "clear and bright" acceptance test for new fuel oil.

The changes are consistent with Nuclear Regulatory Commission (NRC) approved Industry/Technical Specification Task Force (TSTF) TSTF-374, Revision 0, (Reference 1). The availability of this TS improvement was published in the *Federal Register* on April 21, 2006, (Reference 2), as part of the Consolidated Line Item Improvement Process (CLIIP).

#### 2.0 Assessment

##### 2.1 Applicability of TSTF-374, and Published Safety Evaluation

Southern Nuclear Operating Company (SNC) has reviewed TSTF-374, Revision 0, (Reference 1) and the NRC model safety evaluation (SE) (Reference 2) as part of the CLIIP. SNC has concluded that the information in TSTF-374, Revision 0, as well as the SE prepared by the NRC staff are applicable to Joseph M. Farley Nuclear Plant (FNP) Unit 1 and Unit 2 and justify this amendment for the incorporation of the changes to the FNP TS. The NRC SE is hereby incorporated by reference.

##### 2.2 Optional Changes and Variations

SNC is not proposing any variations or deviations from the TS changes described in the TSTF-374 or the NRC staff's model safety evaluation dated February 22, 2006 (Reference 3).

#### 3.0 Regulatory Assessment

##### 3.1 No Significant Hazards Consideration Determination

SNC has reviewed the proposed No Significant Hazards Consideration Determination (NSHCD) published in the *Federal Register* as part of the CLIIP. SNC has concluded that the proposed NSHCD presented in the Federal Register notice is applicable to FNP Unit 1 and Unit 2 and is hereby incorporated by reference to satisfy the requirements of 10 CFR 50.91(a).

##### 3.2 Verification

As discussed in the notice of availability published in the *Federal Register* on April 21, 2006 for this TS improvement, plant-specific verifications were performed as follows:

## **Enclosure 1**

### **Description and Assessment**

SNC has proposed TS Bases consistent with TSTF-374, which provide guidance and details on how to implement the new requirements. In addition, SNC has a Bases Control Program in FNP TS 5.5.14.

#### **4.0 Environmental Evaluation**

The amendment changes requirements with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR 20. The NRC staff has determined that the amendment adopting TSTF-374, Revision 0, involves no significant increase in the amounts and no significant change in the types of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that TSTF-374, Revision 0, involves no significant hazards considerations, and there has been no public comment on the finding in Federal Register Notice 70 FRN 9179, February 22, 2006. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

#### **5.0 References**

1. TSTF-374, Revision 0, "Revision to TS 5.5.13 and Associated TS Bases for Diesel Fuel Oil."
2. Federal Register Notice dated April 21, 2006 (71 FR 20735), "Technical Specification Improvement to Revise Diesel Fuel Oil Testing Program Using the Consolidated Line Item Improvement Process,"
3. Federal Register Notice dated February 22, 2006 (71 FR 9179), "Notice for Opportunity to Comment on Model Safety Evaluation on Technical Specification Improvement To Revise Diesel Fuel Oil Testing Program Using the Consolidated Line Item Improvement Process,"

**Joseph M. Farley Nuclear Plant  
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**Enclosure 2**

**Proposed Technical Specification Changes**

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 the emergency diesel generator storage tanks by determining that the fuel oil has:
  - 1. an API gravity or an absolute specific gravity within limits,
  - 2. a flash point and kinematic viscosity within limits for ASTM 2D fuel oil, and
  - 3. a clear and bright appearance with proper color; or a water and sediment content within limits.

Replace with  
INSERT A

- ~~b. Fuel oil stored in the emergency diesel generator storage tanks is within limits by verifying that a sample of diesel fuel oil from the storage tank, obtained in accordance with ASTM-D270-65, is within the acceptable limits specified in Table 1 of ASTM D975-74 when checked for viscosity, water, and sediment every 92 days.~~
- ~~c. The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Diesel Fuel Oil Testing Program surveillance test frequencies.~~

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 require 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 requires NRC approval pursuant to 10 CFR 50.59.

(continued)



Enclosure 2

Proposed Technical Specification Changes

INSERT A

- b. Other properties for ASTM 2D fuel oil are within limits within 31 days following sampling and addition to storage tanks; and
- c. Total particulate concentration of the fuel oil is  $\leq 10$  mg/l when tested every 31 days.
- d. The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Diesel Fuel Oil Testing Program surveillance test frequencies.

**Joseph M. Farley Nuclear Plant  
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**Enclosure 3**

**Revised Technical Specification Pages**

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 the emergency diesel generator storage tanks by determining that the fuel oil has:
  1. an API gravity or an absolute specific gravity within limits,
  2. a flash point and kinematic viscosity within limits for ASTM 2D fuel oil, and
  3. a clear and bright appearance with proper color; or a water and sediment content within limits.
- b. 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.
- d. The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Diesel Fuel Oil Testing Program surveillance test frequencies.

5.5.14 Technical Specifications (TS) Bases Control Program

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

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(continued)

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**Enclosure 4**

**Proposed Changes to the Technical Specifications Bases Pages**

BASES

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BACKGROUND  
(continued)

The usable fuel in a storage tank is the amount above the transfer pump suction nozzles that is available for transfer from a storage tank to a day tank. The amount of usable fuel is determined by correlating control room percent level indication to the applicable tank curve. Redundancy of pumps and piping precludes the failure of one pump, or the rupture of any day tank transfer pipe, valve or day tank to result in the loss of more than one DG. All outside tanks, pumps, and piping are located underground.

D4057-06

For proper operation of the standby DGs, it is necessary to ensure the proper quality of the fuel oil. ASTM-D270-65 (Ref. 2) addresses the recommended fuel oil practices as supplemented by ASTM-D975-74 (Ref. 3). The fuel oil properties governed by these SRs are the water and sediment content, the kinematic viscosity, and specific gravity (or API gravity).

07

The DG lubrication system is designed to provide sufficient lubrication to permit proper operation of its associated DG under all loading conditions. The system is required to circulate the lube oil to the diesel engine working surfaces and to remove excess heat generated by friction during operation. The onsite storage in addition to the engine oil sump is sufficient to ensure 7 days of continuous operation. This supply is sufficient to allow the operator to replenish lube oil from outside sources.

Each DG has an air start system with adequate capacity for five successive start attempts on the DG without recharging the air start receiver(s). Each air start system consists of redundant air receivers. Each receiver has sufficient capacity to perform the required number of DG starts.

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APPLICABLE  
SAFETY ANALYSES

The initial conditions of Design Basis Accident (DBA) and transient analyses in the FSAR, Chapter 6 (Ref. 4), and in the FSAR, Chapter 15 (Ref. 5), assume Engineered Safety Feature (ESF) systems are OPERABLE. The DGs are designed to provide sufficient capacity, capability, redundancy, and reliability to ensure the availability of necessary power to ESF systems so that fuel, Reactor Coolant System and containment design limits are not exceeded. These limits are discussed in more detail in the Bases for Section 3.2, Power Distribution Limits; Section 3.4, Reactor Coolant System (RCS); and Section 3.6, Containment Systems.

(continued)

BASES

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SURVEILLANCE  
REQUIREMENTS

SR 3.8.3.2 (continued)

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

Replace with  
INSERT B

~~A sample from each fuel oil storage tank is analyzed for water and sediment in accordance with ASTM-D270-65 (Ref. 2). The sample is also used to ensure the oil is within the specifications of Table 1 of ASTM-D975-74 (Ref. 3) when checked for viscosity, water, and sediment. The frequency of this testing is in accordance with the DG Fuel Oil Testing Program and takes into consideration fuel oil degradation trends that indicate that particulate concentration is unlikely to change significantly between Frequency intervals. New fuel oil must meet the requirements of ASTM-D975-78 (Ref. 6) when delivered. New fuel is tested to verify acceptability.~~

SR 3.8.3.4

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

(continued)

BASES

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SURVEILLANCE  
REQUIREMENTS

SR 3.8.3.4 (continued)

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

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REFERENCES

1. FSAR, Section 8.3.1.1.7.
  2. ~~ASTM-D270-65 D4057-06.~~
  3. ~~ASTM-D975-74 07.~~
  4. FSAR, Chapter 6.
  5. FSAR, Chapter 15.
  6. ~~ASTM-D975-78.~~
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- 6. ASTM D1298-99
  - 7. ASTM D4176-04
  - 8. ASTM D2709-96
  - 9. ASTM D1552-07
  - 10. ASTM D2622-07
  - 11. ASTM D4294-03
  - 12. ASTM D5452-06

## Enclosure 4

### Proposed Changes to the Technical Specifications Bases Pages

#### INSERT B

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 D4057-06 (Ref. 2)
- b. Verify in accordance with the tests specified in ASTM D975-07 (Ref. 3) that the sample has an absolute specific gravity at 60/60°F of  $\geq 0.83$  and  $\leq 0.89$  or an API gravity at 60°F of  $\geq 27^\circ$  and  $\leq 39^\circ$  when tested in accordance with ASTM D1298-99 (Ref. 6), a kinematic viscosity at 40°C of  $\geq 1.9$  centistokes and  $\leq 4.1$  centistokes, and a flash point of  $\geq 125^\circ\text{F}$ ; and
- c. Verify that the new fuel oil has a clear and bright appearance with proper color when tested in accordance with ASTM D4176-04 (Ref. 7) or a water and sediment content within limits when tested in accordance with ASTM D2709-96 (Ref. 8)

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 D975-07 (Ref. 3) are met for new fuel oil when tested in accordance with ASTM D975-07 (Ref. 3), except that the analysis for sulfur may be performed in accordance with ASTM D1552-07 (Ref. 9), ASTM D2622-07 (Ref. 10), or ASTM D4294-03 (Ref. 11). The 31 day period is acceptable because the fuel oil properties of interest, even if they were not within stated limits, would not have an immediate effect on DG operation. This Surveillance ensures the availability of high quality fuel oil for the DGs.

Fuel oil degradation during long term storage shows up as an increase in particulate, due mostly to oxidation. The presence of particulate does not mean the fuel oil will not burn properly in a diesel engine. The particulate can cause fouling of filters and fuel oil injection equipment, however, which can cause engine failure.

Particulate concentrations should be determined in accordance with ASTM D5452-06 (Ref. 12). This method involves a gravimetric determination of total particulate concentration in the fuel oil and has a limit of 10mg/l. It is acceptable



## Enclosure 4

### Proposed Changes to the Technical Specifications Bases Pages

to obtain a field sample for subsequent laboratory testing in lieu of field testing. Each tank must be considered and tested separately.

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