

VIRGINIA ELECTRIC AND POWER COMPANY  
RICHMOND, VIRGINIA 23261  
June 30, 2006

U.S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, D.C. 20555

Serial No. 06-320B  
NL&OS/ETS R0  
Docket Nos. 50-338  
50-339  
License Nos. NPF-4  
NPF-7

**VIRGINIA ELECTRIC AND POWER COMPANY**  
**NORTH ANNA POWER STATION UNITS 1 AND 2**  
**TECHNICAL SPECIFICATIONS BASES CHANGE FOR**  
**DIESEL FUEL OIL TESTING PROGRAM TECHNICAL SPECIFICATION CHANGE**

In a May 8, 2006 letter (Serial No. 06-320) Virginia Electric and Power Company (Dominion) requested amendments, in the form of a change to the Technical Specifications (TS) to Facility Operating License Numbers NPF-4 and NPF-7 for North Anna Power Station Units 1 and 2, respectively. The proposed change relocates the ASTM standard being used to test the total particulate concentration of the stored fuel oil to a licensee-controlled program. This change is consistent with the intent of Technical Specifications Task Force (TSTF) Traveler 374-A, Rev 0, "Revision to TS 5.5.13 and Associated Bases for Diesel Fuel Oil." In the May 8, 2006 submittal, Dominion stated that the testing standard would be incorporated into the TS Bases upon NRC's approval of the proposed amendment.

In a June 12, 2006 conference call, the NRC staff requested that Dominion provide the marked-up and typed Bases pages for their review. Accordingly, attached for your information are the associated Bases changes for the proposed Technical Specification change. In addition to relocating the testing standard for total particulate concentration to the Bases, Dominion intends to also update the testing standard, as recommended by the ASTM Technical Committee D02, to ASTM D6217-98.

If you have any questions or require additional information, please contact Mr. Thomas Shaub at (804) 273-2763.

Very truly yours,



William R. Matthews  
Senior Vice President – Nuclear Operations

Attachments

1. Mark-up of Unit 1 and Unit 2 Technical Specifications Bases Changes
2. Typed Unit 1 and Unit 2 Technical Specifications Bases Changes

Commitments made in this letter: None

cc: U.S. Nuclear Regulatory Commission  
Region II  
Sam Nunn Atlanta Federal Center  
61 Forsyth Street, SW  
Suite 23T85  
Atlanta, Georgia 30303

Mr. J. T. Reece  
NRC Senior Resident Inspector  
North Anna Power Station

Mr. Stephen R. Monarque  
NRC Project Manager  
U. S. Nuclear Regulatory Commission  
One White Flint North  
11555 Rockville Pike  
Rockville, Maryland 20852

Mr. J. E. Reasor, Jr.  
Old Dominion Electric Cooperative  
Innsbrook Corporate Center  
4201 Dominion Blvd.  
Suite 300  
Glen Allen, Virginia 23060

Commissioner  
Bureau of Radiological Health  
1500 East Main Street  
Suite 240  
Richmond, Virginia 23218

COMMONWEALTH OF VIRGINIA     )  
  )  
COUNTY OF HENRICO            )

The foregoing document was acknowledged before me, in and for the County and Commonwealth aforesaid, today by William R. Matthews, who is Senior Vice President – Nuclear Operations, of Virginia Electric and Power Company. He has affirmed before me that he is duly authorized to execute and file the foregoing document in behalf of that Company, and that the statements in the document are true to the best of his knowledge and belief.

Acknowledged before me this 30<sup>th</sup> day of June, 2006.

My Commission Expires: August 31, 2008.

Margaret B. Bennett  
Notary Public

(SEAL)

**Attachment 1**

**Mark-up of Unit 1 and Unit 2 Technical Specifications Bases Changes**

**North Anna Power Station  
Units 1 and 2  
Virginia Electric and Power Company  
(Dominion)**

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 two EDGs' operation for 7 days at full load. 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 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.

SR 3.8.3.2

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 D4057-88 (Ref. 6);
- b. Verify in accordance with the tests specified in ASTM D975-89 (Ref. 6) 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  $\leq 39^\circ$ , a kinematic viscosity at 40°C of  $\geq 1.9$  centistokes and  $\leq 4.1$  centistokes, and a flash point of  $\geq 125^\circ\text{F}$ ; and INSERT 2
- c. Verify that the new fuel oil is checked for water and sediment ~~in accordance with the Diesel Fuel Oil Testing Program.~~ INSERT 3

(continued)

BASES

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SURVEILLANCE  
REQUIREMENTS

SR 3.8.3.2 (continued)

Failure to meet any of the above limits is cause for rejecting the new fuel oil, but does not represent a failure to meet the LCO concern since the fuel oil is not added to the storage tanks.

Within 31 days following the initial new fuel oil sample, the fuel oil is analyzed to establish that the other properties specified in Table 1 of ASTM D975-89 (Ref. 7) are met for new fuel oil when tested in accordance with ASTM D975-89 (Ref. 6), except that the analysis for sulfur may be performed in accordance with ASTM D4294-98 (Ref. 6), ASTM D1552-88 (Ref. 6) or ASTM D2622-82 (Ref. 6). The 31 day period is acceptable because the fuel oil properties of interest, even if they were not within stated limits, would not have an immediate effect on EDG operation. This Surveillance ensures the availability of high quality fuel oil for the EDGs.

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

Particulate concentrations should be determined in accordance with ASTM ~~D2276-83~~, <sup>D6217-98</sup> Method A (Ref. 6). This method involves a gravimetric determination of total particulate concentration in the fuel oil and has a limit of 10 mg/l. It is acceptable to obtain a field sample for subsequent laboratory testing in lieu of field testing. Each tank is considered and tested separately.

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

SR 3.8.3.3

This Surveillance ensures that, without the aid of the refill compressor, sufficient air start capacity for each EDG is available. The system design requirements were verified for a minimum of five engine start cycles without recharging. A start cycle is measured in terms of time

(continued)

BASES

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REFERENCES  
(continued)

INSERT 5

6. ~~ASTM Standards: D4057-88; D975-89; D1552-88; D2622-82;~~  
~~D2276, Method A; D4294-98.~~

7. ASTM Standards, D975, Table 1, 1989.

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Inserts EDG Fuel Oil Bases Changes per TSTF-374-A Rev 0

**Insert 1**

or a water and sediment content within limits **Not used – previously incorporated**

**Insert 2**

... when tested in accordance with ASTM D287-82 (Ref. 6)

**Insert 3**

... content within limits when tested in accordance with ASTM D1796-83 (Ref. 6)

**Insert 4**

, or ASTM D4294-98 **Not used – previously incorporated**

**Insert 5**

ASTM Standards: D4057-88; D975-89; D1522-88; D2622-82; D2276-82; D4292-98; D6217-98; D287-82; D1796-83.

These are the inserts recommended in TSTF-374-A Rev 0 as modified to include the current testing standards used at North Anna.

Inserts 1 and 4 are not used since both the water and sediment test method and ASTM D4294-98 have been previously included in the EDG Fuel Oil Testing Program and associated TS Bases.



**Attachment 2**

**Typed Unit 1 and Unit 2 Technical Specifications Bases Changes**

**North Anna Power Station  
Units 1 and 2  
Virginia Electric and Power Company  
(Dominion)**

BASES

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SURVEILLANCE  
REQUIREMENTS

SR 3.8.3.1

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SR 3.8.3.2

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 D4057-88 (Ref. 6);
- b. Verify in accordance with the tests specified in ASTM D975-89 (Ref. 6) 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 D287-82 (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 is checked for water and sediment content within limits when tested in accordance with ASTM D1796-83 (Ref. 6).

(continued)

BASES

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SURVEILLANCE  
REQUIREMENTS

SR 3.8.3.2 (continued)

Failure to meet any of the above limits is cause for rejecting the new fuel oil, but does not represent a failure to meet the LCO concern since the fuel oil is not added to the storage tanks.

Within 31 days following the initial new fuel oil sample, the fuel oil is analyzed to establish that the other properties specified in Table 1 of ASTM D975-89 (Ref. 7) are met for new fuel oil when tested in accordance with ASTM D975-89 (Ref. 6), except that the analysis for sulfur may be performed in accordance with ASTM D4294-98 (Ref. 6), ASTM D1552-88 (Ref. 6) or ASTM D2622-82 (Ref. 6). The 31 day period is acceptable because the fuel oil properties of interest, even if they were not within stated limits, would not have an immediate effect on EDG operation. This Surveillance ensures the availability of high quality fuel oil for the EDGs.

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This Surveillance ensures that, without the aid of the refill compressor, sufficient air start capacity for each EDG is available. The system design requirements were verified for a minimum of five engine start cycles without recharging. A start cycle is measured in terms of time  
(continued)

BASES

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REFERENCES  
(continued)

6. ASTM Standards: D4057-88; D975-89; D1522-88; D2622-82;  
D2276-82; D4292-98; D6217-98; D287-82; D1796-83.

7. ASTM Standards, D975, Table 1, 1989.

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