

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

Gentlemen:

In the Matter of the ) Docket No. 50-390  
Tennessee Valley Authority ) 50-391

**WATTS BAR NUCLEAR PLANT (WBN) - EMERGENCY DIESEL GENERATOR (EDG) FUEL OIL - SAMPLING OF STORAGE TANKS**

The fuel oil for WBN's EDGs is tested in accordance with Technical Specification (TS) 5.7.2.16, "Diesel Fuel Oil Testing Program." The sampling of new fuel oil prior to transferring fuel oil to the 7 day fuel oil storage tank for each EDG is performed in accordance with Section 8 of ASTM D4057-1988 to satisfy TS 5.7.2.16. This specific test also fulfills the following Surveillance Requirement for TS 3.8.3, "Diesel Fuel Oil, Lube Oil, and Starting Air:"

SURVEILLANCE	FREQUENCY
SR 3.8.3.3 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.	In accordance with the Diesel Fuel Oil Testing Program

ASTM D4057-1988 requires the fuel oil sample be obtained by utilizing an "all levels sample" (Reference Section 8.2.3.1 of ASTM D4057-1988). This method entails lowering a special sampling container to the bottom of the main fuel oil storage tank at which point the container opens and is then pulled up collecting a sample at all levels of the tank.

To obtain this sample in accordance with ASTM D4057-1988 Section 8, a chemistry technician must climb a ladder approximately 25 feet to the top of the storage tank. As a minimum, the technician must bring a special sample container, two 25 foot cables, wipe cloths, two one liter bottles, a funnel, a bucket, and a safety belt with a ladder climbing device. Once on top of the domed tank, the technician must secure him/herself and open the manway to the tank. After a sample is collected, the manway is secured and the sample and equipment are lowered to the ground in a bucket. The technician then returns to the ladder and descends 25 feet.

This sampling method poses a safety risk to the technician obtaining the sample. In addition, this method puts the fuel oil supply at risk because during the sampling collection with the manway open, the possibility exists to drop tools, a sample container, flashlight, or other material into the tank. Should this happen, the status of the fuel oil would be indeterminate until the item(s) are recovered. These risks can be reduced by making a minor change to the sampling method.

Section 8.1 of ASTM D4057-1988 states: "Alternative sampling procedures may be used if a mutually satisfactory agreement has been reached by the parties involved. Such agreement shall be put in writing and signed by authorized officials." In an effort to reduce the safety risk to personnel and to eliminate the possibility of dropping objects into the fuel oil storage tanks, WBN is proposing an alternative to the sampling method of ASTM D4057-1988.

WBN proposes to take samples from the fuel oil transfer pump discharge lines of each storage tank. The transfer pumps take suction near the bottom of their respective storage tanks through a five inch diameter line. There is a one inch diameter line and valve off each discharge line that will be used as the sample point. To obtain a fuel oil sample, the fuel oil transfer pump for the tank to be sampled will be placed in the recirculation mode for a period of time based on the volume of diesel fuel in the tank. This is done to ensure the contents of the tank are adequately mixed. After the tank has been recirculated for the appropriate time, the sample line will be flushed and a sample obtained. The sample line and transfer pump will then be secured and the fuel oil sample will be analyzed in accordance with existing TS requirements.

Provided in the Enclosure are the results of the sampling of Main Fuel Oil Storage Tank Number 1. The sampling was performed over a two month period (three samples) and compares the results of samples taken from the top of the tank and samples which were taken using the proposed method. Based on this comparison, the sampling results are essentially equivalent and this supports TVA's position that the proposed sampling method is acceptable.

This requested change in sampling procedures is being made in accordance with the provisions of ASTM D4057-1988. There will be no change to the wording or intent of the TS or Bases as a result of this action. Therefore, no change to the TS will be required.

WBN requests the staff's review of the proposed alternate sampling method. If the request is determined to be acceptable, please return a written confirmation of the acceptance of the sampling process to satisfy the requirements of Section 8.1 of ASTM D4057-1988. There is no

specific time or milestone by which NRC's approval of this request is required. However, since TVA considers this change to be a safety enhancement, a timely response will be appreciated.

A request similar to that being proposed by WBN was submitted to NRC on March 27, 1990, by Louisiana Power and Light Company for the Waterford 3 Plant. That request was approved by NRC in a letter dated April 12, 1990.

There are no regulatory commitments in this letter and should there be any questions regarding this letter, please contact me at (423) 365-1824.

Sincerely,

Michael K. Brandon  
Manager, Site Licensing  
and Industry Affairs

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cc (Enclosure):

NRC Resident Inspector  
Watts Bar Nuclear Plant  
1260 Nuclear Plant Road  
Spring City, Tennessee 37381

U.S. Nuclear Regulatory Commission  
Mr. John G. Lamb, Senior Project Manager  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation  
MS O-8 H1A  
Washington, DC 20555-0001

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

**Enclosure**  
**Comparison of Fuel Oil Sampling Results**  
**from Fuel Oil Storage Tank (FOST) Number 1**

<b>Sample Date 07/23/2008</b>				
<b>Sample Analysis</b>	<b>Units</b>	<b>FOST Number 1 Sample Method</b>		<b>Sample Acceptance Criteria</b>
		<b>Top of Tank</b>	<b>Recirculation Pump</b>	
<b>Clear and Bright</b>	Pass	Pass	Pass	No water drops or particulate matter and free of haze
<b>Kinematic viscosity</b>	cSt	2.70	2.72	1.9 to 4.1 cSt at 40 Degrees C
<b>Flashpoint</b>	Degree F	153	155	≥ 125 Degrees F
<b>Specific Gravity</b>	N/A	0.849	0.849	0.83 to 0.89 (60/60 Degrees F)
<b>Water and Sediment</b>	Percent	<0.05	<0.05	≤ 0.05 percent by volume
<b>Ash</b>	Percent	<0.001	<0.001	≤ 0.01 weight percent
<b>Ramsbottom Carbon residue on 10 percent distillation residue</b>	Percent	0.145	0.155	≤ 0.35 weight percent
<b>Cetane Number</b>	Index (calculated)	45.9	47.0	≥ 40
<b>Cloud Point</b>	Degree F	<18.0	<18.0	≤ 23 Degrees F
<b>Copper Strip Corrosion</b>		<3.0	<3.0	≤ Number 3
<b>Distillation Temperature</b>	Degree F	611	611	≥ 540 Degrees F to ≤ 640 Degrees F
<b>Sulfur</b>	Percent	0.05	0.05	≤ 0.50 weight percent

<b>Sample Date 08/19/2008</b>				
<b>Sample Analysis</b>	<b>Units</b>	<b>FOST Number 1 Sample Method</b>		<b>Sample Acceptance Criteria</b>
		<b>Top of Tank</b>	<b>Recirculation Pump</b>	
<b>Clear and Bright</b>	Pass	Pass	Pass	No water drops or particulate matter and free of haze
<b>Kinematic viscosity</b>	cSt	2.78	2.77	1.9 to 4.1 cSt at 40 Degrees C
<b>Flashpoint</b>	Degree F	153	149	≥ 125 Degrees F
<b>Specific Gravity</b>	N/A	0.839	0.839	0.83 to 0.89 (60/60 Degrees F)
<b>Water and Sediment</b>	Percent	<0.05	<0.05	≤ 0.05 percent by volume
<b>Ash</b>	Percent	<0.001	<0.001	≤ 0.01 weight percent
<b>Ramsbottom Carbon residue on 10 percent distillation residue</b>	Percent	0.123	0.128	≤ 0.35 weight percent
<b>Cetane Number</b>	Index (calculated)	46.1	46.1	≥ 40
<b>Cloud Point</b>	Degree F	<18.0	<18.0	≤ 23 Degrees F
<b>Copper Strip Corrosion</b>		<3.0	<3.0	≤ Number 3
<b>Distillation Temperature</b>	Degree F	613	613	≥ 540 Degrees F to ≤ 640 Degree F
<b>Sulfur</b>	Percent	0.05	0.05	≤ 0.50 weight percent

**Enclosure**  
**Comparison of Fuel Oil Sampling Results**  
**from Fuel Oil Storage Tank (FOST) Number 1**

Sample Date 08/21/2008				
Sample Analysis	Units	FOST Number 1 Sample Method		Sample Acceptance Criteria
		Top of Tank	Recirculation Pump	
<b>Clear and Bright</b>	Pass	Pass	Pass	No water drops or particulate matter and free of haze
<b>Kinematic viscosity</b>	cSt	2.88	3.03	1.9 to 4.1 cSt at 40 Degrees C
<b>Flashpoint</b>	Degree F	155	153	≥ 125 Degrees F
<b>Specific Gravity</b>	N/A	0.851	0.839	0.83 to 0.89 (60/60 Degrees F)
<b>Water and Sediment</b>	Percent	<0.05	<0.05	≤ 0.05 percent by volume
<b>Ash</b>	Percent	<0.001	<0.001	≤ 0.01 weight percent
<b>Ramsbottom Carbon residue on 10 percent distillation residue</b>	Percent	0.146	0.138	≤ 0.35 weight percent
<b>Cetane Number</b>	Index (calculated)	46.3	45.8	≥ 40
<b>Cloud Point</b>	Degree F	<18.0	<18.0	≤ 23 Degrees F
<b>Copper Strip Corrosion</b>		<3.0	<3.0	≤ Number 3
<b>Distillation Temperature</b>	Degree F	616	611	≥ 540 Degrees F to ≤ 640 Degrees F
<b>Sulfur</b>	Percent	0.05	0.05	≤ 0.50 weight percent