



Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402-2801

February 24, 2010

10 CFR 50.4

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

Sequoyah Nuclear Plant, Units 1 and 2
Facility Operating License Nos. DPR-77 and DPR-79
NRC Docket Nos. 50-327 and 50-328

Subject: Emergency Diesel Generator Fuel Oil - Sampling of Fuel Oil Storage Tanks

The fuel oil for Sequoyah Nuclear Plant (SQN), Units 1 and 2 Emergency Diesel Generators is tested in accordance with Technical Specification (TS) Surveillance Requirement (SR) 4.8.1.1.2.c. It states:

At a frequency in accordance with the Diesel Fuel Oil Testing Program, verify oil properties of new and stored fuel oil are tested in accordance with, and maintained within the limits specified in the Diesel Fuel Oil Testing Program.

SQN TS 6.16, "Diesel Fuel Oil Testing Program," defines that the program shall include sampling and testing requirements, and acceptance criteria, in accordance with applicable ASTM Standards. SQN currently fulfills SR 4.8.1.1.2.c by sampling the fuel oil in the storage tanks in accordance with ASTM D4057-1988, "Standard Practice for Manual Sampling of Petroleum and Petroleum Products." This standard requires that the fuel oil sample be obtained by utilizing an "all levels sample" (Reference Section 8.2.3.1 of ASTM D4057-1988). This method involves 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.

The current SQN sampling method poses a personnel safety risk to the technician obtaining the sample. In addition, the current method puts the fuel oil supply at risk because during the sample collection with the manway open, the potential 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.

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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, SQN is proposing an alternative to the sampling method of ASTM D4057-1988.

SQN proposes to take samples from the fuel transfer lines of each fuel oil storage tank. The fuel transfer pump takes suction from a four inch diameter line near the bottom of the respective storage tank. There is a one inch diameter line and valve off the transfer pump discharge line that will be used as the sample point. To obtain a fuel oil sample, the fuel oil transfer pump will be aligned to the tank to be sampled, and then placed in the recirculation mode for approximately six hours. After the tank has been recirculated, 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.

The results of the sampling of Fuel Oil Storage Tank Numbers 1 and 2 are provided in the Enclosure. The sampling was performed over a three month period wherein three samples were taken from each tank for each method. The Enclosure compares the results of samples taken from the top of the tank and samples which were taken using the proposed method. As stated above, the proposed test method results were obtained by recirculating a fuel oil tank for approximately six hours. Based on this comparison, the sampling results are essentially equivalent and supports Tennessee Valley Authority's (TVA's) position that the proposed sampling method is acceptable.

TVA performs evaluations under 10 CFR 50.59 in accordance with TVA's procedure, Standard Programs and Processes (SPP) 9.4, "10 CFR 50.59, Evaluations of Changes, Tests and Experiments." This procedure is based on Revision 1 of Nuclear Energy Institute 96-07, "Guidelines for 10 CFR 50.59 Implementation." In accordance with Section 3.1, "Preparation of Screening Reviews and 50.59 Evaluations," of SPP-9.4, Screening Review "O-TI-CEM-000-016.7, Revision 25" was prepared to determine if the proposed fuel oil sampling process required a license amendment. The Screening Review concluded that a license amendment is not required.

Independent of the results of TVA's Screening Review, Section 8.1 of the ASTM standard states the following:

The standard sampling procedures described in this method are summarized in Table 1. ***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.
(emphasis added)

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 or the TS Bases will be required.

This letter provides the justification needed for the NRC to conclude that the proposed sampling change is acceptable and requests the NRC's concurrence with the sampling method described. 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 concurrence is required. However, since TVA considers this change to be a safety enhancement, a timely response will be appreciated.

A similar request to this one 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. Another similar request was submitted by TVA for the Watts Bar Nuclear Plant, Unit 1 on May 19, 2009. The TVA request was approved by the NRC on July 20, 2009.

There are no regulatory commitments in this letter. Should there be any questions regarding this letter, please contact Rod Cook at (423) 751-2834.

Respectfully,



R. M. Krich
Vice President
Nuclear Licensing

Enclosure:

Sequoyah Nuclear Plant Fuel Oil Storage Tanks (FOST) Data Analysis

cc: See Page 4

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Enclosure
cc: (Enclosure)

NRC Regional Administrator - Region II
NRC Senior Resident Inspector - Sequoyah Nuclear Plant

Enclosure

**Sequoyah Nuclear Plant
Fuel Oil Storage Tanks (FOST) Data Analysis**

ENCLOSURE
Sequoyah Nuclear Plant Fuel Oil Storage Tanks (FOST) Data Analysis

Analyte	Acceptance Criteria	Units	FOST #1 CURRENT Collected 10/06/09	FOST #1 ALT. Collected 10/05/09	FOST #1 CURRENT Collected 11/19/09	FOST #1 ALT. Collected 11/19/09	FOST #1 CURRENT Collected 12/10/09	FOST #1 ALT. Collected 12/07/09	FOST #2 CURRENT Collected 10/06/09	FOST #2 ALT. Collected 10/06/09	FOST #2 CURRENT Collected 11/05/09	FOST #2 ALT. Collected 11/09/09	FOST #2 CURRENT Collected 12/10/09	FOST #2 ALT. Collected 12/08/09
Ash in Fuel Oil	≤ 0.01	%	<0.001	<0.001	<0.001	0.000	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Water and Sediment	≤ 0.05	%	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
Ramsbottom Carbon Residue	≤0.35	%	0.111	0.111	0.000	0.000	<0.001	<0.001	0.106	0.113	0.127	0.117	<0.001	<0.001
Specific Gravity	0.83-0.89		0.8458	0.8472	0.8464	0.8474	0.8464	0.8464	0.8468	0.8472	0.8487	0.8487	0.8474	0.8444
Viscosity @ 40C (Manual)	1.9-4.1	cSt	2.63	2.65	2.40	1.90	2.40	2.48	2.69	2.64	2.55	2.56	2.57	2.60
Cetane Index (Calculated)	≥ 40		47.1	47.0	42.5	45.5	45.8	45.8	47.2	46.4	46.8	46.1	46.8	48
Cloud Point	≤-5	Deg C	<-8	<-8	<-8	<-8	<-8	<-8	<-8	<-8	<-8	<-8	<-8	<-8
Clear and Bright	Pass	Pass or Fail	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed
Copper Strip Corrosion	≤No. 3		1A	1A	1A	1A	1A	1A	1A	1A	1A	1A	1A	1A
EMD 102 Abrasive Ash	≤1.3	mg/L	0.6	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Flash Point, Close Cup	≥51.7	Deg F	150	152	145	145	148	141	157	159	152	152	154	145
Particulate Contamination	≤10	mg/L	1.7	2.4	1.7	2.6	0.7	0.9	1.4	2.7	1.7	2.0	2.0	1.7
Sulfur in Fuel Oil	≤0.05	%	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Distillation 90% Recovered	282.2-337.7	Deg C	320.1	322.1	314.7	315.3	314.3	316.3	324.3	317.3	325.3	317.8	319	320
Flash Point, Closed Cup	≥20	Deg C	66	67	63	63	64	61	69	71	67	67	68	62
Particulate Cont Fuel Volume		L	1.000	0.980	1.020	1.030	1.040	1.030	1.030	1.100	1.020	0.950	1.020	1.030
CLS Sample ID			AK33499	AK33516	AK35386	AK35387	AK36488	AK36350	AK33500	AK33517	AK34919	AK35055	AK36489	AK36446