SURVEILLANCE REQUIREMENTS (Continued)

b. Demonstrated OPERABLE at least once every 18 months by manually transferring the onsite Class 1E power supply from the normal circuit to the alternate circuit.

4.8.1.1.2 Each EDG shall be demonstrated OPERABLE:

a. In accordance with the frequency specified in Table 4.8-1 on a STAGGERED TEST BASIS by:

1. Verifying the fuel level in the day tank and fuel storage tank.

2. Verifying the fuel transfer pump can be started and transfers fuel from the storage system to the day tank.

3. Verifying the diesel generator can start* and accelerate to synchronous speed (504 rpm) with generator voltage and frequency at 7200 ± 720 volts and 60 ± 1.2 Hz.

4. Verifying the generator is synchronized, gradually loaded* to an indicated 4150-4250 kW** and operates for at least 60 minutes.

b. At least once per 31 days and after each operation of the diesel where the period of operation was greater than or equal to 1 hour by removing accumulated water from the day tank.

c. By obtaining a sample of fuel oil in accordance with ASTM-D270-1975 at least once per 92 days and prior to the addition of new fuel oil to the storage tanks and verifying that the sample meets the following minimum requirements and is tested within the specified time limits:

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1. As soon as sample is taken (or prior to adding new fuel to the storage tank) verify in accordance with the tests specified in ASTM-D975-77 that the sample has:

a) A water and sediment content of less than or equal to 0.05 volume percent.

b) A kinematic viscosity @ 40°C of greater than or equal to 1.9 centistokes, but less than or equal to 4.1 centistokes.

c) A specific gravity as specified by the manufacturer @ 60/60°F of greater than or equal to 0.83 but less than or equal to 0.89 or an API gravity @ 60°F of greater than or equal to 27 degrees but less than or equal to 39 degrees.

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*This test shall be conducted in accordance with the manufacturer's recommendations regarding engine prelube and warmup procedures, and as applicable regarding loading recommendations.

**This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band shall not invalidate the test.

SURVEILLANCE REQUIREMENTS (Continued)

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~~2. Within 1 week after obtaining the sample, verify an impurity level of less than 2 mg of insolubles per 100 ml when tested in accordance with ASTM-D2274-70.~~

~~3. Within 2 weeks after obtaining the sample, verify that the other properties specified in Table 1 of ASTM-D975-77 and Regulatory Guide 1.137 Position 2.a are met when tested in accordance with ASTM-D975-77.~~

f. At least once per 184 days by:

1. Starting and accelerating the EDG to synchronous speed (504 rpm) with generator voltage and frequency at 7200 ± 720 volts and 60 ± 1.2 Hz within 10 seconds after the start signal. The EDG shall be started for this test by using one of the following signals:

   a) Simulated loss of offsite power by itself.
   b) Simulated loss of offsite power in conjunction with an ESF actuation test signal.
   c) An ESF actuation test signal by itself.
   d) Simulated degraded offsite power by itself.
   e) Manual.

2. The generator shall be manually synchronized, loaded to an indicated 4150-4250 kW** in less than or equal to 60 seconds, and operate for at least 60 minutes.

g. At least once every 18 months by:

1. Subjecting the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service,

2. Verifying that on rejection of a load of greater than or equal to 729, the voltage and frequency are maintained at 7200 ± 720 volts and frequency at 60 ± 1.2 Hz.

3. Verifying the generator capability to reject a load of 4250 kw without tripping. The generator voltage shall not exceed 7920 volts during and following the load rejection.

4. Simulating a loss of offsite power by itself, and:

   a) Verifying de-energization of the emergency busses and load shedding from the emergency busses.

**This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band shall not invalidate the test.

SURVEILLANCE REQUIREMENTS (Continued)

h. At least once per 10 years or after any modifications which could affect diesel generator interdependence by starting the diesel generators simultaneously, during shutdown, and verifying that the diesel generators accelerate to at least 504 rpm in less than or equal to 10 seconds.

i. At least once per 10 years by:

1. Draining each fuel oil storage tank, removing the accumulated sediment and cleaning the tank using a sodium hypochlorite solution or its equivalent, and

2. Performing a pressure test of those portions of the diesel fuel oil system designed to Section III subsection ND of the ASME Code at a test pressure equal to 110 percent of the system design pressure.

4.8.1.1.3 Reports - All diesel generator failures, valid or non-valid, shall be reported to the Commission in a Special Report pursuant to Specification 6.9.2 within 30 days. Reports of diesel generator failures shall include the information recommended in Regulatory Position C.3.b of Regulatory Guide 1.108, Revision 1, August 1977. If the number of failures in the last 100 valid tests (on a per diesel generator basis) is greater than or equal to 7, the report shall be supplemented to include the additional information recommended in Regulatory Position C.3.b of Regulatory Guide 1.108, Revision 1, August 1977.

INSERT

c. At least once per 31 days by checking for and removing accumulated water from the fuel oil storage tanks;

d. By sampling new fuel oil in accordance with ASTM-D4057 prior to addition to storage tanks and:

1) By verifying in accordance with the tests specified in ASTM-D975-81 prior to addition to the storage tanks that the sample has:

a. An API Gravity of within 0.3 degrees at 60°F, or a specific gravity of within 0.0016 at 60/60°F, when compared to the supplier's certificate, or an absolute specific gravity at 60/60°F of greater than or equal to 0.83 but less than or equal to 0.89, or an API gravity of greater than or equal to 27 degrees but less than or equal to 39 degrees;

b. A kinematic viscosity at 40°C of greater than or equal to 1.9 centistokes, but less than or equal to 4.1 centistokes (alternatively, Saybolt viscosity, SUS at 100°F of greater than or equal to 32.6, but not less than or equal to 40.1), if gravity was not determined by comparison with the supplier's certification;

c. A flash point equal to or greater than 125°F; and

d. A clear and bright appearance with proper color when tested in accordance with ASTM-D4176-82.

2) By verifying within 30 days of obtaining the sample that the other properties specified in Table 1 of ASTM-D975-81 are met when tested in accordance with ASTM-D975-81 except that the analysis for sulfur may be performed in accordance with ASTM-D1552-79 or ASTM-D2622-82.

e. At least once every 31 days by obtaining a sample of fuel oil in accordance with ASTM-D2276-88, and verifying that total particulate contamination is less than 10 mg/liter when checked in accordance with ASTM-D2276-88, Method A.

ATTACHMENT 2

SAFETY EVALUATION

SAFETY EVALUATION FOR VIRGIL C. SUMMER NUCLEAR STATION

Description of amendment request:

Currently, the Virgil C. Summer Nuclear Station (VCSNS) Technical Specifications Surveillance Requirement 4.8.1.1.2. (c), "Electrical Power Systems," requires that each diesel generator be demonstrated operable "by obtaining a sample of fuel oil in accordance with ASTM D270-1975 at least once per 92 days and prior to the addition of new fuel oil to the storage tanks...." The purpose of demonstrating the operability of the diesel generators is to ensure that sufficient power will be available to supply the safety related equipment required for 1) the safe shutdown for the facility and 2) the mitigation and control of accident conditions within the facility. The diesel fuel oil monitoring and analyses requirements delineated in Technical Specification 4.8.1.1.2 ensure that the quality of the oil meets the NRC guidelines on kinematic viscosity, water and sediment content, and specific gravity, per Regulatory Guide 1.137, Revision 1, "Fuel Oil Systems for Standby Diesel Generators" (October 1979).

The proposed amendment revises Surveillance Requirement 4.8.1.1.2 with respect to diesel fuel oil storage, monitoring, sampling, and analysis. This proposed change replaces VCSNS Technical Specification Surveillance Requirement 4.8.1.1.2(c) with the corresponding requirement in NUREG-0452, "Standard Technical Specifications for Westinghouse Pressurized Water Reactors." Additionally, the revision adds a requirement to check for and remove any accumulated water in the fuel oil storage tanks every 31 days. This requirement is also contained in NUREG-0452.

The following table exhibits the differences between current VCSNS Technical Specifications and the proposed revision (NUREG-0452):

Current VCSNS Technical Specifications	Proposed Revision (NUREG-0452)
•No requirement for checking for and removing accumulated water from the fuel oil storage tanks	•Required at least once per 31 days
•Requires fuel oil sampling at least once per 92 days and prior to the addition of new fuel oil to the storage tanks	•Requires fuel oil sampling prior to the addition of new fuel oil to the storage tanks
•Sample is obtained per ASTM-D270-75 (ASTM-D270-75 was discontinued in 1984)	•Sample is obtained per ASTM-D4057-81

Current VCSNS Technical Specifications	Proposed Revision (NUREG-0452)
•Sample is analyzed in accordance with tests in ASTM-D975-77	•Sample is analyzed in accordance with ASTM-D975-81, Appendix XI*
•Requires verification that specific gravity OR API Gravity is within specified range	•Requires the same verification with the two additional alternatives that API Gravity OR specific gravity is within the specified tolerance of the supplier's certificate
•Requires verification that kinematic viscosity is within a specified range	•Requires the same verification, but offers an alternative of verifying that Saybolt Viscosity is within a specified range
•Requires that water and sediment content be less than or equal to 0.05 volume percent	•No requirement for this test
•Flash point tested once per 92 days	•Flash point tested prior to adding new fuel to tanks
•No requirement for "clear and bright appearance"	•Requires a "clear and bright appearance with proper color" test per ASTM-D4176-82

*SCE&G proposes to adhere to the requirements specified in Appendix XI of ASTM-D975-81 for samples taken prior to the addition of new fuel to the storage tank and subsequently to provide a monitoring program as specified in Appendix X.3 of ASTM-D975-81, with exceptions to X.3.6 as follows:

X.3.6.2 Sampling will be performed in accordance with ASTM-D4057-81 as discussed above.

X.3.6.3 Insoluble fuel contaminants will be determined using ASTM-D2276-88 with sampling as specified in that method. This is an update to ASTM-D2276-78 which is given in NUREG-0452.

X.3.6.4 The fuel stability test (ASTM D2274) will not be performed as correlation of this test with fuel stability is tenuous. The results of this test are unreliable and are poor predictions of fuel stability. Storage tanks at VCSNS are underground and thus avoid temperature extremes. To deter microbiological growth, a fuel oil additive is used.

Current VCSNS Technical Specifications	Proposed Revision (NUREG-0452)
•Requires that, within 2 weeks of obtaining the sample, the properties specified in Table 1 of ASTM-D975-77 and Regulatory Guide 1.137 Position 2.a are verified when tested in accordance with ASTM-D975-77	•Requires that, within 30 days of obtaining the sample, the properties specified in Table 1 of ASTM-D975-81 are verified when tested in accordance with ASTM-D975-81, WITH THE EXCEPTION that the analysis for sulfur may be performed in accordance with ASTM-D1552-79 or ASTM-D2622-82
•Requires that, within one week of obtaining the sample, an impurity level of less than 2 mg of insoluble per 100 ml be verified when tested per ASTM-D2274-70	•Requires that at least once every 31 days a sample of fuel oil be obtained per ASTM-D2276-78, and the total particulate contamination be verified less than 10mg/liter when checked per ASTM-D2276-78.

Additionally, the proposed revision re-letters sections 4.8.1.1.2 (d),(e),(f), and (g) to make the VCSNS Technical Specifications consistent with the changes mentioned above.

South Carolina Electric and Gas Company is proposing this change to update the VCSNS Technical Specification on testing methodology and acceptability of emergency diesel generator fuel oil to comply with the latest ASTM test standards and to concur with the Standard Technical Specifications. The most beneficial aspect of this change will be the replacement of the Oxidation Stability analysis (4.8.1.1.2.(c)2. in the VCSNS Technical Specifications) with the Total Particulate Contamination analysis as found in the Standard Technical Specifications. The Oxidation Stability test is hazardous to perform and is very time consuming. Additionally, the results from the stability test are not indicative of the actual conditions in the tanks. Chemistry personnel at VCSNS have performed a trial run on the Total Particulate Contamination Test and are satisfied with the results and the methodology for performing the analysis.

South Carolina Electric and Gas Company (SCE&G) intends for this revision to be a permanent change in the VCSNS Technical Specifications. The change in diesel fuel oil monitoring and analyses does not affect the purpose of the Technical Specification. With the methods proposed in NUREG-0452 implemented at VCSNS, the diesel generator fuel oil will continue to meet the NRC guidelines for kinematic viscosity, water and sediment content, and specific gravity, and will, therefore, ensure the proper quality fuel oil for operation of the diesel generators.

Safety Evaluation:

South Carolina Electric & Gas Company proposes to revise the existing Technical Specification Surveillance Requirements on diesel generator fuel oil monitoring and testing to coincide with the requirements in NUREG-0452, "Standard Technical Specifications for Westinghouse Pressurized Water Reactors."

To ensure that the diesel generators operate properly, it is necessary to have quality fuel oil. With the approval of this Technical Specifications Change Request, Virgil C. Summer Nuclear Station will continue to verify that the diesel generator fuel oil meets the NRC guidelines on kinematic viscosity, water and sediment content, and specific gravity per Regulatory Guide 1.137, Revision 1, "Fuel-Oil Systems for Standby Diesel Generators" (October 1979).

The proposed amendment to the VCSNS Technical Specifications is limited to the sampling and analysis of diesel fuel oil. A comparison for Grade No. 2 Diesel Fuel Oil between the currently used ASTM-D975-77 Table 1, and the proposed ASTM-D975-81 Table 1 indicates no difference. The testing requirements for both tables are identical. No change will result, therefore, in diesel generator reliability as a result of the revision in allowable fuel properties. The proposed standard for diesel fuel oil acceptibility will ensure that the Emergency Diesel Generator System will continue to be credited for operation in those instances presently required in the Safety Analysis.

ATTACHMENT 3

NO SIGNIFICANT HAZARDS EVALUATION

NO SIGNIFICANT HAZARDS CONSIDERATION

Description of amendment request:

Currently, the Virgil C. Summer Nuclear Station (VCSNS) Technical Specifications Surveillance Requirement 4.8.1.1.2. (c), "Electrical Power Systems," requires that each diesel generator be demonstrated operable "by obtaining a sample of fuel oil in accordance with ASTM D270-1975 at least once per 92 days and prior to the addition of new fuel oil to the storage tanks...." The purpose of demonstrating the operability of the diesel generators is to ensure that sufficient power will be available to supply the safety related equipment required for 1) the safe shutdown for the facility and 2) the mitigation and control of accident conditions within the facility. The diesel fuel oil monitoring and analyses requirements delineated in Technical Specification 4.8.1.1.2 ensure that the quality of the oil meets the NRC guidelines on kinematic viscosity, water and sediment content, and specific gravity, per Regulatory Guide 1.137, Revision 1, "Fuel Oil Systems for Standby Diesel Generators" (October 1979).

The proposed amendment revises Surveillance Requirement 4.8.1.1.2 with respect to diesel fuel oil storage, monitoring, sampling, and analysis. This proposed change replaces VCSNS Technical Specification Surveillance Requirement 4.8.1.1.2(c) with the corresponding requirement in NUREG-0452, "Standard Technical Specifications for Westinghouse Pressurized Water Reactors." Additionally, the revision adds a requirement to check for and remove any accumulated water in the fuel oil storage tanks every 31 days. This requirement is also contained in NUREG-0452.

The following table exhibits the differences between current VCSNS Technical Specifications and the proposed revision (NUREG-0452):

Current VCSNS Technical Specifications	Proposed Revision (NUREG-0452)
•No requirement for checking for and removing accumulated water from the fuel oil storage tanks	•Required at least once per 31 days
•Requires fuel oil sampling at least once per 92 days and prior to the addition of new fuel oil to the storage tanks	•Requires fuel oil sampling prior to the addition of new fuel oil to the storage tanks
•Sample is obtained per ASTM-D270-75 (ASTM-D270-75 was discontinued in 1984)	•Sample is obtained per ASTM-D4057-81

Current VCSNS Technical Specifications	Proposed Revision (NUREG-0452)
•Sample is analyzed in accordance with tests in ASTM-D975-77	•Sample is analyzed in accordance with ASTM-D975-81, Appendix XI*
•Requires verification that specific gravity OR API Gravity is within specified range	•Requires the same verification with the two additional alternatives that API Gravity OR specific gravity is within the specified tolerance of the supplier's certificate
•Requires verification that kinematic viscosity is within a specified range	•Requires the same verification, but offers an alternative of verifying that Saybolt Viscosity is within a specified range
•Requires that water and sediment content be less than or equal to 0.05 volume percent	•No requirement for this test
•Flash point tested once per 92 days	•Flash point tested prior to adding new fuel to tanks
•No requirement for "clear and bright appearance"	•Requires a "clear and bright appearance with proper color" test per ASTM-D4176-82

*SCE&G proposes to adhere to the requirements specified in Appendix XI of ASTM-D975-81 for samples taken prior to the addition of new fuel to the storage tank and subsequently to provide a monitoring program as specified in Appendix X.3 of ASTM-D975-81, with exceptions to X.3.6 as follows:

X.3.6.2 Sampling will be performed in accordance with ASTM-D4057-81 as discussed above.

X.3.6.3 Insoluble fuel contaminants will be determined using ASTM-D2276-88 with sampling as specified in that method. This is an update to ASTM-D2276-78 which is given in NUREG-0452.

X.3.6.4 The fuel stability test (ASTM D2274) will not be performed as correlation of this test with fuel stability is tenuous. The results of this test are unreliable and are poor predictions of fuel stability. Storage tanks at VCSNS are underground and thus avoid temperature extremes. To deter microbiological growth, a fuel oil additive is used.

Current VCSNS Technical Specifications	Proposed Revision (NUREG-0452)
•Requires that, within 2 weeks of obtaining the sample, the properties specified in Table 1 of ASTM-D975-77 and Regulatory Guide 1.137 Position 2.a are verified when tested in accordance with ASTM-D975-77	•Requires that, within 30 days of obtaining the sample, the properties specified in Table 1 of ASTM-D975-81 are verified when tested in accordance with ASTM-D975-81, WITH THE EXCEPTION that the analysis for sulfur may be performed in accordance with ASTM-D1552-79 or ASTM-D2622-82
•Requires that, within one week of obtaining the sample, an impurity level of less than 2 mg of insoluble per 100 ml be verified when tested per ASTM-D2274-70	•Requires that at least once every 31 days a sample of fuel oil be obtained per ASTM-D2276-78, and the total particulate contamination be verified less than 10mg/liter when checked per ASTM-D2276-78.

Additionally, the proposed revision re-letters sections 4.8.1.1.2 (d),(e),(f), and (g) to make the VCSNS Technical Specifications consistent with the changes mentioned above.

South Carolina Electric and Gas Company is proposing this change to update the VCSNS Technical Specification on testing methodology and acceptability of emergency diesel generator fuel oil to comply with the latest ASTM test standards and to concur with the Standard Technical Specifications. The most beneficial aspect of this change will be the replacement of the Oxidation Stability analysis (4.8.1.1.2.(c)2. in the VCSNS Technical Specifications) with the Total Particulate Contamination analysis as found in the Standard Technical Specifications. The Oxidation Stability test is hazardous to perform and is very time consuming. Additionally, the results from the stability test are not indicative of the actual conditions in the tanks. Chemistry personnel at VCSNS have performed a trial run on the Total Particulate Contamination Test and are satisfied with the results and the methodology for performing the analysis.

South Carolina Electric and Gas Company (SCE&G) intends for this revision to be a permanent change in the VCSNS Technical Specifications. The change in diesel fuel oil monitoring and analyses does not affect the purpose of the Technical Specification. With the methods proposed in NUREG-0452 implemented at VCSNS, the diesel generator fuel oil will continue to meet the NRC guidelines for kinematic viscosity, water and sediment content, and specific gravity, and will, therefore, ensure the proper quality fuel oil for operation of the diesel generators.

Basis For No Significant Hazards Consideration:

The proposed amendment has been reviewed and determined to involve no significant hazards consideration. Operation of the Virgil C. Summer Nuclear Station in accordance with the proposed changes to the Technical Specifications is evaluated with respect to the criteria of 10CFR50.92 as follows:

1. The changes would not involve a significant increase in the probability or consequences of any accident previously evaluated at VCSNS. No change to the design or function of any plant system is proposed. The proposed standard for diesel fuel oil acceptability will assure that, from a fuel standpoint, the emergency Diesel Generator System (EDGS) will continue to function reliably and can continue to be credited for operation in those instances presently required in the Safety Analysis. The fuel oil surveillance program will continue to ensure that an adequate supply of quality fuel oil is maintained onsite.

2. The changes would not create the possibility of a new or different kind of accident from any accident previously evaluated. No change in EDGS operation or reliability will result from the proposed change in allowable fuel properties. The proposed change is limited to the sampling and analysis of diesel fuel oil, and will continue to ensure that the fuel oil at VCSNS meets the fuel oil requirements specified in Regulatory Guide 1.137, Revision 1, "Fuel-Oil Systems for Standby Diesel Generators" (October 1979).

3. The changes would not involve a significant reduction in a margin of safety. A comparison between acceptability standards for Grade No. 2 Diesel Fuel Oil between ASTM D975-77 Table 1 and ASTM D975-81 Table 1 indicates no difference. The margin of safety at the Virgil C. Summer Nuclear Station will not, therefore, be reduced by the proposed change.

The Nuclear Regulatory Commission has provided examples of amendments that are not likely to involve a significant hazards consideration. Example (ii), 51 FR 7751 is as follows:

> "A change that constitutes an additional limitation, restriction, or control not currently included in the technical specifications."

SCE&G has determined proposed Surveillance Requirement 4.8.1.1.2.c to be similar to example (ii) since it is an additional control to ensure the quality of available diesel fuel oil.

Example (i), 51 FR 7751 is as follows:

> "A purely administrative change to technical specifications."

SCE&G has determined proposed Surveillance Requirements 4.8.1.1.2.h and 4.8.1.1.2.i to be similar to example (i) since these requirements have been changed only in the relabeling of sections and constitute an editorial change in order to achieve consistency.

In view of the preceeding, South Carolina Electric & Gas Company has determined that the proposed license amendment does not involve any significant hazards considerations.