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M. S. Tuckman
Executive Vice President
Nuclear Generation

August 26, 2002

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

Subject: Duke Energy Corporation
Catawba Nuclear Station (CNS), Units 1 and 2
Docket Numbers 50-413 and 50-414
McGuire Nuclear Station (MNS), Units 1 and 2
Docket Numbers 50-369 and 50-370
Proposed Technical Specifications (TS) Amendments
to TS 5.5.13 (Diesel Fuel Oil Testing Program),
Surveillance Requirement (SR) 3.8.3.5 (MNS) and
3.8.3.6 (CNS), and Bases 3.8.3.

Pursuant to 10 CFR 50.90, Duke is requesting amendments to the CNS and MNS Technical Specifications. These amendments allow for a relocation of specific American Society for Testing and Materials (ASTM) references dealing with diesel fuel oil analyses and the requirement for a ten-year tank inspection and cleaning to licensee-controlled documents. The amendments add new ASTM references for absolute specific gravity and API gravity tests. The amendments also allow the use of an optional water and sediment content test in lieu of the current "clear and bright" test to establish the acceptability of new fuel oil. The proposed changes provide the flexibility needed to utilize state-of-the-art technology in fuel sampling and analysis. Additionally, the changes provide flexibility in the maintenance schedule for the fuel oil tanks cleaning and inspection. Relocating this maintenance requirement from TS to licensee-controlled documents is similar to other diesel generator maintenance requirements that have already been relocated from TS requirements and placed in licensee-controlled documents.

These license amendment requests have been developed based on, and are consistent with, the guidance contained in Standard Technical Specification Travelers TSTF 374, Rev. 0

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and TSTF 2, Rev.1. Duke is aware that TSTF 374, Rev.0 has not been approved by the NRC at this time. However, the NRC previously approved similar changes for Byron and Braidwood (6/13/2001 submittal) based on TSTF-374, Rev.0. Also, TSTF 2, Rev. 1, which is approved, was previously approved for Grand Gulf(8/20/1999 submittal).

Duke is requesting that the NRC review and approve the enclosed license amendment requests no later than February 2003 in order to support fuel oil shipments and sampling for the Catawba Outage in March 2003.

Implementation of these amendments to the CNS and MNS Technical Specifications will impact the respective stations' Updated Final Safety Analysis Reports (UFSARs):

- Section 16: Selected Licensee Commitments are affected for MNS: Sections 16.8.3 and 16.9.7 and CNS: Sections 16.7-9 and 16.8-5.
- Also, Section 1.7.1.1, which discusses compliance with Regulatory Guide 1.137, will be revised to discuss revisions made per TSTF-2.

Duke Energy Corporation has determined that a 90-day implementation period would be preferred in order to revise monthly surveillances with minimum impact on scheduling.

In accordance with Duke administrative procedures and the Quality Assurance Program Topical Report, the proposed amendments have been previously reviewed and approved by the CNS and MNS Plant Operations Review Committees and on an overall basis by the Duke Nuclear Safety Review Board.

The contents of this amendment request package are as follows:

1. Attachments 1a and 1b provide marked copies of the affected TS and TS Bases pages for Catawba and McGuire, respectively, showing the proposed changes.
2. Attachments 2a and 2b contain reprinted pages of the affected TS and TS Bases pages for Catawba and McGuire, respectively.
3. Attachment 3 provides a description of the proposed changes and technical justification.

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4. Pursuant to 10 CFR 50.92, Attachment 4 documents the determination that the amendments contain No Significant Hazards Considerations.
5. Pursuant to 10 CFR 51.22(c)(9), Attachment 5 provides the basis for the categorical exclusion from performing an Environmental Assessment/Impact Statement.

Pursuant to 10 CFR 50.91, copies of these proposed amendments are being sent to the appropriate state officials.

There are no regulatory commitments contained in this letter or its attachments.

Inquiries on this matter should be directed to A.P Jackson at (803) 831-3742.

Very truly yours,



M.S. Tuckman

APJ/apj

Attachments

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M.S. Tuckman affirms that he is the person who subscribed his name to the foregoing statement, and that all the matters and facts set forth herein are true and correct to the best of his knowledge.

M.S. Tuckman

M.S. Tuckman, Executive Vice President

Subscribed and sworn to me: Aug 26, 2002
Date

Mary P. Debus
Notary Public

My commission expires: JAN 22, 2006
Date

SEAL

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NCEMC
PMPA
SREC
Catawba Document Control File: 813.20
McGuire Document Control File: 813.20
Catawba RGC Date File
ELL-EC050

ATTACHMENT 1a

MARKED-UP TS AND TS BASES PAGES FOR CATAWBA

Insert For CNS TS Changes

Insert 1

or a water and sediment content within limits.

Insert 2

or a water and sediment content within limits when tested in accordance with ASTM D2709 or D1796 (Ref.7); and

- d. Verify that the new fuel oil has an absolute specific gravity at 60/60°F of ≥ 0.83 and ≤ 0.89 when tested in accordance with ASTM D1298 or an API gravity at 60°F of $\geq 27^\circ$ and $\leq 39^\circ$ when tested in accordance with ASTM D287 (Ref.7).

Insert 3

7. ASTM Standards: D4057; D975; D1298; D4176; D2709; D1552; D2622; D1796; D2276; and D287.

5.5 Programs and Manuals

5.5.12 Explosive Gas and Storage Tank Radioactivity Monitoring Program (continued)

The program shall include:

- a. The limits for concentrations of hydrogen and oxygen in the Waste Gas Holdup System and a surveillance program to ensure the limits are maintained. Such limits shall be appropriate to the system's design criteria (i.e., whether or not the system is designed to withstand a hydrogen explosion);
- b. A surveillance program to ensure that the quantity of radioactivity contained in each gas storage tank or connected gas storage tanks and fed into the offgas treatment system is less than the amount that would result in a Deep Dose Equivalent of ≥ 0.5 rem to any individual in an unrestricted area, in the event of an uncontrolled release of the tanks' contents; and
- c. A surveillance program to ensure that the quantity of radioactivity contained in all outdoor liquid radwaste tanks that are not surrounded by liners, dikes, or walls, capable of holding the tanks' contents and that do not have tank overflows and surrounding area drains connected to the Liquid Radwaste Treatment System is less than the amount that would result in concentrations exceeding the limits of 10 CFR 20, Appendix B, Table 2, Column 2, at the nearest potable water supply and the nearest surface water supply in an unrestricted area, in the event of an uncontrolled release of the tanks' contents.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Explosive Gas and Storage Tank Radioactivity Monitoring Program surveillance frequencies.

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 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

(continued)

Insert 1

5.5 Programs and Manuals

5.5.13 Diesel Fuel Oil Testing Program (continued)

3. a clear and bright appearance with proper color;
- 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 ≤ 10 mg/l when tested every 31 days, based on ASTM D-2276, Method A.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Diesel Fuel Oil Testing Program 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 involve either of the following:
 1. a change in the TS incorporated in the license; or
 2. a change to the UFSAR or Bases that involves an unreviewed safety question as defined in 10 CFR 50.59.
- c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the UFSAR.
- d. Proposed changes that meet the criteria of Specification 5.5.14.b.1 or 5.5.14.b.2 above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71(e), with approved exemptions.

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.8.3.2 Verify lubricating oil inventory is \geq 400 gal.	31 days
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
SR 3.8.3.4 Verify each DG air start receiver pressure is \geq 210 psig.	31 days
SR 3.8.3.5 Check for and remove accumulated water from each fuel oil storage tank.	31 days
SR 3.8.3.6 For each fuel oil storage tank: a. Drain the fuel oil; b. Remove the sediment; and c. Clean the tank.	10 years



BASES

ACTIONS (continued)

for reasons other than addressed by Conditions A through E, the associated DG may be incapable of performing its intended function and must be immediately declared inoperable.

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 each DG's 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

This Surveillance ensures that sufficient lube oil inventory is available to support at least 7 days of full load operation for each DG. The 400 gal requirement is based on the DG manufacturer consumption values for the run time of the DG. In order to account for the lube oil sump tank inventory decrease that occurs when the DG is started, the 400 gal requirement shall be met with the Surveillance conducted while the DG is running.

A 31 day Frequency is adequate to ensure that a sufficient lube oil supply is available, since DG starts and run time are closely monitored by the unit staff.

SR 3.8.3.3

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

BASES

SURVEILLANCE REQUIREMENTS (continued)

tests are to be conducted prior to adding the new fuel to the storage tank(s). The tests, limits, and applicable ASTM Standards are as follows:

- a. Sample the new fuel oil in accordance with ASTM D4057-84 (Ref. 7);
- b. Verify in accordance with the tests specified in ASTM D975-84 (Ref. 7) that the sample has an absolute specific gravity at 60/60°F of ≥ 0.83 and ≤ 0.89 or an API gravity at 60°F of ≥ 27 and ≤ 39 , a kinematic viscosity at 40°C of ≥ 1.9 centistokes and ≤ 4.1 centistokes, and a flash point of ≥ 125 °F; and
- c. Verify that the new fuel oil has a clear and bright appearance with proper color when tested in accordance with ASTM D4176-82 (Ref. 7) ← Insert 2

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 D975-84 (Ref. 7) are met for new fuel oil when tested in accordance with ASTM D975-84 (Ref. 7), except that the analysis for sulfur may be performed in accordance with ASTM D1552-79 (Ref. 7) or ASTM D2622-82 (Ref. 7). 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 based on ASTM D2276-78, Method A (Ref. 7). The test described in this Standard is for jet fuel. It is therefore permissible to determine particulate concentration using a 3 micron filter instead of the 0.8 micron required by the Standard. This method involves a gravimetric determination of total particulate

BASES

SURVEILLANCE REQUIREMENTS (continued)

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. For those designs in which the total stored fuel oil volume is contained in two or more interconnected tanks, each tank must be 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 3.8.3.4

This Surveillance ensures that, without the aid of the refill compressor, sufficient air start capacity for each DG is available. 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.

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.

SR 3.8.3.5

Microbiological fouling is a major cause of fuel oil degradation. There are numerous bacteria that can grow in fuel oil and cause fouling, but all must have a water environment in order to survive. Removal of water from the fuel storage tanks once every 31 days eliminates the necessary environment for bacterial survival. This is the most effective means of controlling microbiological fouling. In addition, it eliminates the potential for water entrainment in the fuel oil during DG operation. Water may come from any of several sources, including condensation, ground water, rain water, and contaminated fuel oil, and from breakdown of the fuel oil by bacteria. Frequent checking for and removal of accumulated water minimizes fouling and provides data regarding the watertight integrity of the fuel oil system. The Surveillance Frequencies are established by

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SURVEILLANCE REQUIREMENTS (continued)

Regulatory Guide 1.137 (Ref. 2). This SR is for preventive maintenance. The presence of water does not necessarily represent failure of this SR, provided the accumulated water is removed during performance of the Surveillance.

~~SR 3.8.3.6~~

~~Draining of the fuel oil stored in the supply tanks, removal of accumulated sediment, and tank cleaning are required at 10 year intervals by Regulatory Guide 1.137 (Ref. 2), paragraph 2.f. This SR also requires the performance of the ASME Code, Section XI (Ref. 9), examinations of the tanks. To preclude the introduction of surfactants in the fuel oil system, the cleaning should be accomplished using sodium hypochlorite solutions, or their equivalent, rather than soap or detergents. This SR is for preventive maintenance. The presence of sediment does not necessarily represent a failure of this SR, provided that accumulated sediment is removed during performance of the Surveillance.~~

REFERENCES

1. UFSAR, Section 9.5.4.2.
2. Regulatory Guide 1.137.
3. ANSI N195-1976, Appendix B.
4. UFSAR, Chapter 6.
5. UFSAR, Chapter 15.
6. 10 CFR 50.36, Technical Specifications, (c)(2)(ii).
7. ~~ASTM Standards: D4057-81; D975-81; D4176-82; D1552-79; D2622-82; D2276-78, Method A.~~
8. ~~ASTM Standards, D975-81, Table 1.~~
9. ~~ASME, Boiler and Pressure Vessel Code, Section XI.~~

Insert 3

ATTACHMENT 1b

MARKED-UP TS AND TS BASES PAGES FOR MCGUIRE

Insert For MNS TS Changes

Insert 1

or a water and sediment content within limits.

Insert 2

or a water and sediment content within limits when tested in accordance with ASTM D2709 or D1796 (Ref.7); and

- d. Verify that the new fuel oil has an absolute specific gravity at 60/60°F of ≥ 0.83 and ≤ 0.89 when tested in accordance with ASTM D1298 or an API gravity at 60°F of $\geq 27^\circ$ and $\leq 39^\circ$ when tested in accordance with ASTM D287 (Ref.7).

Insert 3

7. ASTM Standards: D4057; D975; D1298; D4176; D2709; D1552; D2622; D1796; D2276; and D287.

5.5 Programs and Manuals

5.5.12 Explosive Gas and Storage Tank Radioactivity Monitoring Program (continued)

- b. A surveillance program to ensure that the quantity of radioactivity contained in each gas storage tank or connected gas storage tanks and fed into the offgas treatment system is less than the amount that would result in a Deep Dose Equivalent of ≥ 0.5 rem to any individual in an unrestricted area, in the event of an uncontrolled release of the tanks' contents; and
- c. A surveillance program to ensure that the quantity of radioactivity contained in all outdoor liquid radwaste tanks that are not surrounded by liners, dikes, or walls, capable of holding the tanks' contents and that do not have tank overflows and surrounding area drains connected to the Liquid Radwaste Treatment System is less than the amount that would result in concentrations exceeding the limits of 10 CFR 20, Appendix B, Table 2, Column 2, at the nearest potable water supply and the nearest surface water supply in an unrestricted area, in the event of an uncontrolled release of the tanks' contents.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Explosive Gas and Storage Tank Radioactivity Monitoring Program surveillance frequencies.

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 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; Insert 1
- b. Other properties for ASTM 2D fuel oil are within limits within 31 days following sampling and addition to storage tanks; and

(continued)

5.5 Programs and Manuals

5.5.13 Diesel Fuel Oil Testing Program (continued)

- c. Total particulate concentration of the fuel oil is ≤ 10 mg/l when tested every 31 days, based on ASTM D-2276, Method A.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Diesel Fuel Oil Testing Program 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 involve either of the following:
1. a change in the TS incorporated in the license; or
 2. a change to the UFSAR or Bases that involves an unreviewed safety question as defined in 10 CFR 50.59.
- c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the UFSAR.
- d. Proposed changes that meet the criteria of Specification 5.5.14.b.1 or 5.5.14.b.2 above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71(e).

5.5.15 Safety Function Determination Program (SFDP)

This program ensures loss of safety function is detected and appropriate actions taken. Upon entry into LCO 3.0.6, an evaluation shall be made to determine if loss of safety function exists. Additionally, other appropriate actions may be taken as a result of the support system inoperability and corresponding exception to entering supported system Condition and Required Actions. This program implements the requirements of LCO 3.0.6. The SFDP shall contain the following:

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.3.1 Verify the fuel oil storage system contains $\geq 39,500$ gal of fuel for each DG.	31 days
SR 3.8.3.2 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
SR 3.8.3.3 Verify each DG air start receiver pressure is ≥ 210 psig.	31 days
SR 3.8.3.4 Check for and remove accumulated water from the fuel oil storage tank.	31 days
SR 3.8.3.5 For each fuel oil storage tank: a. Drain the fuel oil; b. Remove the sediment; and c. Clean the tank.	10 years

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restored to the required limit. A period of 48 hours is considered sufficient to complete restoration to the required pressure prior to declaring the DG inoperable. This period is acceptable based on the remaining air start capacity, the fact that most DG starts are accomplished on the first attempt, and the low probability of an event during this period.

E.1

With a Required Action and associated Completion Time not met, or one or more DG's fuel oil or starting air subsystem not within limits for reasons other than addressed by Conditions A through D, the associated DG may be incapable of performing its intended function and must be immediately declared inoperable.

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 each DG's operation for 5 days at full load. The 4 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). The tests, limits, and applicable ASTM Standards are as follows:

- a. Sample the new fuel oil in accordance with ASTM D4057-81 (Ref. 7);
- b. Verify in accordance with the tests specified in ASTM D975-81 (Ref. 7) that the sample has ~~an absolute specific gravity at 60/60°F of ≥ 0.83 and ≤ 0.89 or an API gravity at 60°F of $\geq 27^\circ$ and $\leq 39^\circ$~~ a

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SURVEILLANCE REQUIREMENTS (continued)

kinematic viscosity at 40°C of ≥ 1.9 centistokes and ≤ 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-~~82~~ (Ref. 7) ← Insert 2

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-~~84~~ (Ref. 7) are met for new fuel oil when tested in accordance with ASTM D975-~~84~~ (Ref. 7), except that the analysis for sulfur may be performed in accordance with ASTM D1552-~~90~~ (Ref. 7) or ASTM D2622-~~82~~ (Ref. 7). 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 based on ASTM D2276-~~78~~, Method A (Ref. 7). The test described in this standard is for jet fuel. It is therefore permissible to determine particulate concentrations using a 3 micron filter instead of the 0.8 micron required by the standard. 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. For those designs in which the total stored fuel oil volume is contained in two or more interconnected tanks, each tank must be 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.

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BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.3.3

This Surveillance ensures that, without the aid of the refill compressor, sufficient air start capacity for each DG is available. The system design requirements provide for a minimum of five engine start cycles without recharging. A start cycle is defined as the period of time required to reach 95% speed from standby prelubed condition. The pressure specified in this SR is intended to reflect a conservative value at which a single fast start and five total starts can be accomplished.

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.

SR 3.8.3.4

Microbiological fouling is a major cause of fuel oil degradation. There are numerous bacteria that can grow in fuel oil and cause fouling, but all must have a water environment in order to survive. Removal of water from the fuel storage tanks once every 31 days eliminates the necessary environment for bacterial survival. This is the most effective means of controlling microbiological fouling. In addition, it eliminates the potential for water entrainment in the fuel oil during DG operation. Water may come from any of several sources, including condensation, ground water, rain water, and contaminated fuel oil, and from breakdown of the fuel oil by bacteria. Frequent checking for and removal of accumulated water minimizes fouling and provides data regarding the watertight integrity of the fuel oil system. The Surveillance Frequencies are established by Regulatory Guide 1.137 (Ref. 2). This SR is for preventive maintenance. The presence of water does not necessarily represent failure of this SR, provided the accumulated water is removed during performance of the Surveillance.

~~SR 3.8.3.5~~

~~Draining of the fuel oil stored in the supply tanks, removal of accumulated sediment, and tank cleaning are required at 10 year intervals by Regulatory Guide 1.137 (Ref. 2), paragraph 2.f. This SR also requires the performance of the ASME Code, Section XI (Ref. 9), examinations of the tanks. To preclude the introduction of surfactants in the fuel oil system, the cleaning should be accomplished using sodium hypochlorite solutions,~~

BASES

~~SURVEILLANCE REQUIREMENTS (continued)~~

~~or their equivalent, rather than soap or detergents. This SR is for preventive maintenance. The presence of sediment does not necessarily represent a failure of this SR, provided that accumulated sediment is removed during performance of the Surveillance.~~

REFERENCES

1. UFSAR, Section 8.3.1.1.7.
2. Regulatory Guide 1.137.
3. ANSI N195-1976, Appendix B.
4. UFSAR, Chapter 6.
5. UFSAR, Chapter 15.
6. 10 CFR 50.36, Technical Specifications, (c)(2)(ii).
7. ~~ASTM Standards: D4057-81; D975-81; D4176-82; D1552-90; D2622-82; D2276-78, Method A.~~
8. ~~ASTM Standards, D975, Table 1.~~
9. ~~ASME, Boiler and Pressure Vessel Code, Section XI.~~

Insert 3



ATTACHMENT 2a

REPRINTED TS AND TS BASES PAGES FOR CATAWBA

5.5 Programs and Manuals

5.5.13 Diesel Fuel Oil Testing Program (continued)

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 ≤ 10 mg/l when tested every 31 days.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Diesel Fuel Oil Testing Program 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 involve either of the following:
 1. a change in the TS incorporated in the license; or
 2. a change to the UFSAR or Bases that involves an unreviewed safety question as defined in 10 CFR 50.59.
- c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the UFSAR.
- d. Proposed changes that meet the criteria of Specification 5.5.14.b.1 or 5.5.14.b.2 above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71(e), with approved exemptions.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.8.3.2 Verify lubricating oil inventory is > 400 gal.	31 days
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
SR 3.8.3.4 Verify each DG air start receiver pressure is \geq 210 psig.	31 days
SR 3.8.3.5 Check for and remove accumulated water from each fuel oil storage tank.	31 days

BASES

SURVEILLANCE REQUIREMENTS (continued)

tests are to be conducted prior to adding the new fuel to the storage tank(s). The tests, limits, and applicable ASTM Standards are as follows:

- a. Sample the new fuel oil in accordance with ASTM D4057 (Ref. 7);
- b. Verify in accordance with the tests specified in ASTM D975 (Ref. 7) that the sample has a kinematic viscosity at 40°C of ≥ 1.9 centistokes and ≤ 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 (Ref. 7) or a water and sediment content within limits when tested in accordance with ASTM D2709 or D1796 (Ref.7) and
- d. Verify that new fuel has an absolute specific gravity at 60/60 °F or ≥ 0.83 and ≤ 0.89 when tested in accordance with the ASTM D1298 or an API gravity at 60 °F of $\geq 27^{\circ}$ and $\leq 39^{\circ}$ when tested in accordance with ASTM D287 (Ref.7).

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 ASTM D975 are met for new fuel oil when tested in accordance with ASTM D975 (Ref. 7), except that the analysis for sulfur may be performed in accordance with ASTM D1552 (Ref. 7) or ASTM D2622 (Ref. 7). 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 based on ASTM D2276 (Ref. 7). The test described in this Standard is for jet fuel. It is therefore permissible to determine particulate concentration using a 3 micron filter instead of the 0.8 micron required by the Standard. This method involves a gravimetric determination of total particulate

BASES

SURVEILLANCE REQUIREMENTS (continued)

Regulatory Guide 1.137 (Ref. 2). This SR is for preventive maintenance. The presence of water does not necessarily represent failure of this SR, provided the accumulated water is removed during performance of the Surveillance.

REFERENCES

1. UFSAR, Section 9.5.4.2.
2. Regulatory Guide 1.137.
3. ANSI N195-1976, Appendix B.
4. UFSAR, Chapter 6.
5. UFSAR, Chapter 15.
6. 10 CFR 50.36, Technical Specifications, (c)(2)(ii).
7. ASTM Standards: D4057; D975; D1298; D4176; D2709; D1552; D2622; D1796; D2276; and D287.

ATTACHMENT 2b

REPRINTED TS AND TS BASES PAGES FOR MCGUIRE

5.5.12 Explosive Gas and Storage Tank Radioactivity Monitoring Program (continued)

- b. A surveillance program to ensure that the quantity of radioactivity contained in each gas storage tank or connected gas storage tanks and fed into the offgas treatment system is less than the amount that would result in a Deep Dose Equivalent of ≥ 0.5 rem to any individual in an unrestricted area, in the event of an uncontrolled release of the tanks' contents; and
- c. A surveillance program to ensure that the quantity of radioactivity contained in all outdoor liquid radwaste tanks that are not surrounded by liners, dikes, or walls, capable of holding the tanks' contents and that do not have tank overflows and surrounding area drains connected to the Liquid Radwaste Treatment System is less than the amount that would result in concentrations exceeding the limits of 10 CFR 20, Appendix B, Table 2, Column 2, at the nearest potable water supply and the nearest surface water supply in an unrestricted area, in the event of an uncontrolled release of the tanks' contents.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Explosive Gas and Storage Tank Radioactivity Monitoring Program surveillance frequencies.

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 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

5.5.13 Diesel Fuel Oil Testing Program (continued)

- c. Total particulate concentration of the fuel oil is ≤ 10 mg/l when tested every 31 days.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Diesel Fuel Oil Testing Program 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 involve either of the following:
 - 1. a change in the TS incorporated in the license; or
 - 2. a change to the UFSAR or Bases that involves an unreviewed safety question as defined in 10 CFR 50.59.
- c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the UFSAR.
- d. Proposed changes that meet the criteria of Specification 5.5.14.b.1 or 5.5.14.b.2 above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71(e).

5.5.15 Safety Function Determination Program (SFDP)

This program ensures loss of safety function is detected and appropriate actions taken. Upon entry into LCO 3.0.6, an evaluation shall be made to determine if loss of safety function exists. Additionally, other appropriate actions may be taken as a result of the support system inoperability and corresponding exception to entering supported system Condition and Required Actions. This program implements the requirements of LCO 3.0.6. The SFDP shall contain the following:

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.3.1 Verify the fuel oil storage system contains $\geq 39,500$ gal of fuel for each DG.	31 days
SR 3.8.3.2 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
SR 3.8.3.3 Verify each DG air start receiver pressure is ≥ 210 psig.	31 days
SR 3.8.3.4 Check for and remove accumulated water from the fuel oil storage tank.	31 days

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.3 Diesel Fuel Oil and Starting Air

BASES

BACKGROUND Each diesel generator (DG) is provided with a storage tank having a fuel oil capacity sufficient to operate that diesel for a period of 5 days while the DG is supplying maximum post loss of coolant accident load demand discussed in the UFSAR, Section 8.3.1.1.7 (Ref. 1). The maximum load demand is calculated using the assumption that a minimum of any two DGs is available. This onsite fuel oil capacity is sufficient to operate the DGs for longer than the time to replenish the onsite supply from outside sources.

Fuel oil is transferred from storage tank to day tank by either of two transfer pumps associated with each storage tank. Redundancy of pumps and piping precludes the failure of one pump, or the rupture of any pipe, valve or tank to result in the loss of more than one DG. All outside tanks, pumps, and piping are located underground.

For proper operation of the standby DGs, it is necessary to ensure the proper quality of the fuel oil. Regulatory Guide 1.137 (Ref. 2) addresses the recommended fuel oil practices as supplemented by ANSI N195 (Ref. 3). The fuel oil properties governed by these SRs are the water and sediment content, the kinematic viscosity, specific gravity (or API gravity), and impurity level.

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).

APPLICABLE SAFETY ANALYSES The initial conditions of Design Basis Accident (DBA) and transient analyses in the UFSAR, Chapter 6 (Ref. 4), and in the UFSAR, 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.

Since diesel fuel oil and the air start subsystem support the operation of the standby AC power sources, they satisfy Criterion 3 of 10 CFR 50.36 (Rev. 6).

BASES

LCO Stored diesel fuel oil is required to have sufficient supply for 5 days of full load operation. It is also required to meet specific standards for quality. DG day tank fuel requirements, as well as transfer capability from the storage tank to the day tank, are addressed in LCO 3.8.1, "AC Sources—Operating," and LCO 3.8.2, "AC Sources—Shutdown." This requirement, in conjunction with an ability to obtain replacement supplies within 4 days, supports the availability of DGs required to shut down the reactor and to maintain it in a safe condition for an anticipated operational occurrence (AOO) or a postulated DBA with loss of offsite power.

The starting air system is required to have a minimum capacity for 5 successive DG start attempts without recharging the air start receivers.

APPLICABILITY The AC sources (LCO 3.8.1 and LCO 3.8.2) are required to ensure the availability of the required power to shut down the reactor and maintain it in a safe shutdown condition after an AOO or a postulated DBA. Since stored diesel fuel oil and the starting air subsystem support LCO 3.8.1 and LCO 3.8.2, stored diesel fuel oil and starting air are required to be within limits when the associated DG is required to be OPERABLE.

ACTIONS The ACTIONS Table is modified by a Note indicating that separate Condition entry is allowed for each DG. This is acceptable, since the Required Actions for each Condition provide appropriate compensatory actions for each inoperable DG subsystem. Complying with the Required Actions for one inoperable DG subsystem may allow for continued operation, and subsequent inoperable DG subsystem(s) are governed by separate Condition entry and application of associated Required Actions.

A.1

In this Condition, the 5 day fuel oil supply for a DG is not available. However, the Condition is restricted to fuel oil level reductions that maintain at least a 4 day supply. These circumstances may be caused by events, such as full load operation required after an inadvertent start while at minimum required level, or feed and bleed operations, which may be necessitated by increasing particulate levels or any number of other oil quality degradations. This restriction allows sufficient time for obtaining the requisite replacement volume and performing the analyses required prior to addition of fuel oil to the tank. A period of 48 hours is considered sufficient to complete restoration of the required level prior to declaring the DG inoperable. This period is acceptable based on the remaining capacity (> 4 days), the fact that procedures will be initiated to obtain replenishment, and the low probability of an event during this brief period.

BASES

ACTIONS (continued)

B.1

This Condition is entered as a result of a failure to meet the acceptance criterion of SR 3.8.3.4. Normally, trending of particulate levels allows sufficient time to correct high particulate levels prior to reaching the limit of acceptability. Poor sample procedures (bottom sampling), contaminated sampling equipment, and errors in laboratory analysis can produce failures that do not follow a trend. Since the presence of particulates does not mean failure of the fuel oil to burn properly in the diesel engine, and particulate concentration is unlikely to change significantly between Surveillance Frequency intervals, and proper engine performance has been recently demonstrated (within 31 days), it is prudent to allow a brief period prior to declaring the associated DG inoperable. The 7 day Completion Time allows for further evaluation, resampling and re-analysis of the DG fuel oil.

C.1

With the new fuel oil properties defined in the Bases for SR 3.8.3.2 not within the required limits, a period of 30 days is allowed for restoring the stored fuel oil properties. This period provides sufficient time to test the stored fuel oil to determine that the new fuel oil, when mixed with previously stored fuel oil, remains acceptable, or to restore the stored fuel oil properties. This restoration may involve feed and bleed procedures, filtering, or combinations of these procedures. Even if a DG start and load was required during this time interval and the fuel oil properties were outside limits, there is a high likelihood that the DG would still be capable of performing its intended function.

D.1 and D.2

DG starting air system normal alignment allows air from both receivers to enter both left and right starting air headers. Therefore, with one receiver isolated, both left and right starting air headers will be supplied from the remaining receiver. With the degraded receiver isolated and the remaining receiver ≥ 210 psig, the capacity for 5 starts exists. In the interim prior to manually isolating the degraded receiver, part of the starting air would be lost to pressurizing the degraded receiver. Therefore, this period must be minimized and action to isolate the degraded receiver shall be initiated immediately.

With the degraded starting air receiver isolated and the remaining receiver pressure ≥ 210 psig, the capacity for 5 starts exists, and the DG can be considered OPERABLE while the degraded air receiver pressure is

BASES

ACTIONS (continued)

restored to the required limit. A period of 48 hours is considered sufficient to complete restoration to the required pressure prior to declaring the DG inoperable. This period is acceptable based on the remaining air start capacity, the fact that most DG starts are accomplished on the first attempt, and the low probability of an event during this period.

E.1

With a Required Action and associated Completion Time not met, or one or more DG's fuel oil or starting air subsystem not within limits for reasons other than addressed by Conditions A through D, the associated DG may be incapable of performing its intended function and must be immediately declared inoperable.

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 each DG's operation for 5 days at full load. The 4 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). The tests, limits, and applicable ASTM Standards are as follows:

- a. Sample the new fuel oil in accordance with ASTM D4057 (Ref. 7);
- b. Verify in accordance with the tests specified in ASTM D975 (Ref. 7) that the sample has a kinematic viscosity at 40°C of ≥ 1.9 centistokes and ≤ 4.1 centistokes, and a flash point of $\geq 125^\circ\text{F}$; and

BASES

SURVEILLANCE REQUIREMENTS (continued)

- c. Verify that the new fuel oil has a clear and bright appearance with proper color when tested in accordance with ASTM D4176 (Ref. 7) or a water and sediment content within limits when tested in accordance with ASTM D2709 or D1796 (Ref. 7) and
- d. Verify that new fuel has an absolute specific gravity at 60/60 °F or ≥ 0.83 and ≤ 0.89 when tested in accordance with the ASTM D1298 or an API gravity at 60 °F of $\geq 27^\circ$ and $\leq 39^\circ$ when tested in accordance with ASTM D287 (Ref.7).

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 ASTM D975 (Ref. 7) are met for new fuel oil when tested in accordance with ASTM D975 (Ref. 7), except that the analysis for sulfur may be performed in accordance with ASTM D1552 (Ref. 7) or ASTM D2622 (Ref. 7). 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 based on ASTM D2276 (Ref. 7). The test described in this standard is for jet fuel. It is therefore permissible to determine particulate concentrations using a 3 micron filter instead of the 0.8 micron required by the standard. 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. For those designs in which the total stored fuel oil volume is contained in two or more interconnected tanks, each tank must be 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.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.3.3

This Surveillance ensures that, without the aid of the refill compressor, sufficient air start capacity for each DG is available. The system design requirements provide for a minimum of five engine start cycles without recharging. A start cycle is defined as the period of time required to reach 95% speed from standby prelubed condition. The pressure specified in this SR is intended to reflect a conservative value at which a single fast start and five total starts can be accomplished.

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.

SR 3.8.3.4

Microbiological fouling is a major cause of fuel oil degradation. There are numerous bacteria that can grow in fuel oil and cause fouling, but all must have a water environment in order to survive. Removal of water from the fuel storage tanks once every 31 days eliminates the necessary environment for bacterial survival. This is the most effective means of controlling microbiological fouling. In addition, it eliminates the potential for water entrainment in the fuel oil during DG operation. Water may come from any of several sources, including condensation, ground water, rain water, and contaminated fuel oil, and from breakdown of the fuel oil by bacteria. Frequent checking for and removal of accumulated water minimizes fouling and provides data regarding the watertight integrity of the fuel oil system. The Surveillance Frequencies are established by Regulatory Guide 1.137 (Ref. 2). This SR is for preventive maintenance. The presence of water does not necessarily represent failure of this SR, provided the accumulated water is removed during performance of the Surveillance.

BASES

REFERENCES

1. UFSAR, Section 8.3.1.1.7.
2. Regulatory Guide 1.137.
3. ANSI N195-1976, Appendix B.
4. UFSAR, Chapter 6.
5. UFSAR, Chapter 15.
6. 10 CFR 50.36, Technical Specifications, (c)(2)(ii).
7. ASTM Standards: D4057; D975; D1298; D4176; D2709; D1552; D2622; and D1796.

ATTACHMENT 3

DESCRIPTION OF PROPOSED CHANGES AND TECHNICAL JUSTIFICATION

DESCRIPTION OF PROPOSED CHANGES AND TECHNICAL JUSTIFICATION

BACKGROUND INFORMATION

The requirements outlined in the Technical Specifications ensure that the fuel oil storage tanks at both CNS and MNS are maintained essentially full to provide an adequate supply of quality fuel. TS 5.5.13 implements required testing of both new fuel oil and stored fuel oil. The Diesel Fuel Oil Testing Program includes sampling and testing requirements, and acceptance criteria, all in accordance with applicable ASTM standards.

The tests of fuel oil are a means of determining whether new fuel oil is of appropriate grade (i.e., proper fuel oil quality) and of assuring it has not been contaminated with substances that would have an immediate, detrimental impact on diesel engine combustion (i.e., proper fuel oil quality).

The purpose of the Diesel Fuel Oil program is to establish the following:

- Acceptability of new fuel oil for use prior to addition to storage tanks;
- Other properties of new fuel oil are within limits within 31 days following sampling and addition to storage tanks; and
- Total particulate concentration of the fuel oil is \leq 10 mg/l when tested every 31 days.

Currently, the fuel oil tanks are maintained by draining, cleaning, and inspecting them on 10-year intervals as specified in Regulatory Guide 1.137 (paragraph 2.f) and ASME Code, Section XI. These actions are only for preventive maintenance. The presence of sediment does not necessarily represent the failure of this surveillance requirement provided that sediment is removed during the surveillance. Currently, Surveillance Requirement (SR) 3.8.3.6 for CNS and SR 3.8.3.5 for MNS specify the need to drain, remove sediment, and clean the tanks on a ten year frequency.

Description of Proposed Changes

Duke Energy Corporation is proposing to revise TS 5.5.13, "Diesel Fuel Oil Testing Program" to relocate the specific American Society for Testing and Materials (ASTM) Standard references from the Administrative Controls Section of TS 5.5.13.c to licensee-controlled documents. In addition to the "clear and bright" used to establish the acceptability of new fuel oil for use prior to addition to storage tanks, an option to allow an alternate "water and sediment" content test to be performed to establish the acceptability of new fuel oil has been added.

The details of the proposed change to TS 5.5.13 are as follows:

- TS 5.5.13.a.3 currently states: " a clear and bright appearance with proper color;"
- TS 5.5.13.a.3 has been revised to state: "a clear and bright appearance with proper color or a water and sediment content within limits;"
- TS 5.5.13.c currently states: "Total particulate concentration of fuel oil is \leq 10 mg/l when tested every 31 days in accordance with ASTM D2276 Method A."
- TS 5.5.13.c has been revised to state: "Total particulate concentration of fuel oil is \leq 10 mg/l when tested every 31 days.

The TS Bases 3.8.3, "Diesel Fuel Oil" has been revised to ensure the current ASTM standards are referenced and to remove specific dates from each reference. The Bases for SR 3.8.3.3 (CNS) and 3.8.3.2 (MNS) has been revised to indicate that the API gravity is tested in accordance with ASTM D287 or that, as an option, absolute gravity is tested in accordance with ASTM D1298. Since ASTM 975 does not specifically address API gravity testing, references to absolute specific gravity and API gravity in section "b" were moved to section "d" where they could be properly referenced.

Also, the proposed changes relocate SR 3.8.3.5 (MNS) and the 3.8.3.6 (CNS) requirement to perform a 10 year tank cleaning of the fuel oil tank to licensee-controlled documents. A corresponding change to TS Bases 3.8.3 is included.

Regulatory Requirements and General Discussion

This license amendment employs many of the same concepts used in Industry/TSTF Standard Technical Specification change Traveler numbers TSTF-374, Rev.0 (Revision to TS 5.5.13 and Associated TS Bases for Diesel Fuel) and TSTF 2, Rev. 1 (Relocate the 10 year sediment cleaning of the fuel oil storage tank to licensee control). TSTF 2 is an approved Traveler. However, at this time TSTF 374, Rev.0 is continuing through the NRC approval process. This amendment will follow the same bases used by Braidwood and Byron plants in their 6/13/2001 submittal. Also, this amendment is similar to the 8/20/1999 submittal by the Grand Gulf plant for TSTF-2.

Administrative controls will exist within the licensee-controlled documents such as the Selected Licensee Commitments and the Diesel Fuel Oil Testing Program to ensure program requirements are met.

Technical Justification

TSTF 374 based:

The initial conditions of the Design Basis Accident (DBA) and transient analyses assume Engineered Safety Feature (ESF) systems are Operable. The Diesel Generators (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. For proper operation of the DGs, it is necessary to ensure the proper quality of fuel oil. The DG fuel oil properties governed by the TS 5.5.13 are the water and sediment content, the kinematic viscosity, specific gravity or API gravity, and particulate level.

The Diesel Fuel Oil Testing Program requires fuel oil testing to be performed in accordance with applicable ASTM standards, which are universally accepted throughout the United States as the best available practices to ensure an acceptably low level of impurities and contaminants in fuel oil. Implementing the required testing specified in the Diesel Fuel Oil Program and the proposed TS and Bases changes will continue to ensure the use of current applicable ASTM Standards to evaluate the quality of both new fuel oil and stored fuel oil designated for use in the DGs. The TS will continue to ensure that the applicable ASTM Standards are used.

Since relocating the specific ASTM Standard references from 5.5.13c to a licensee-controlled document will not affect the fuel oil properties, the OPERABILITY of the DGs will be maintained. TS 3.8.3 requires fuel oil testing to be performed in accordance with the Diesel Fuel Oil Testing Program, and TS 5.5.13 provides the programmatic requirements for fuel oil testing. The proposed changes relocate specific ASTM references from TS 5.5.13c to a licensee-controlled document. Changes to the licensee-controlled document are performed in accordance with the provisions of 10 CFR 50.59, "Changes, tests, and experiments." Thus, adequate control over changes to the licensee-controlled document (i.e., in particular changes to the applicable ASTM Standards) exist to allow relocation of the specific ASTM standards to a licensee-controlled document.

As discussed in ASTM D975, ASTM D2709, "Test Method for Water and Sediment in Distillate Fuels by Centrifuge," or ASTM D1796, "Standard Method for Water and Sediment in Fuel Oils by the Centrifuge Method (Laboratory Procedure)" are acceptable standards for the water and sediment content test. ASTM standard D1796 is the same standard currently used at both sites to verify the water and sediment content is within limits 31 days following sampling and addition to the storage tanks. Therefore, since water and sediment analysis is currently used to verify the acceptability of new fuel for addition to the storage tanks, the use of these quantitative methods in lieu of ASTM D4176 (i.e., "clear and bright" test) does not introduce a different method that requires further evaluation prior to implementation. The affected Bases are revised to include the option of water and sediment content limits.

SR 3.8.3.2 for McGuire(MNS) and 3.8.3.3 for Catawba(CNS) each require fuel oil testing to be performed in accordance with the Diesel Fuel Oil Testing Program, and TS 5.5.13.c provides the programmatic requirements for fuel testing. As such, detail of the specific ASTM standard reference (i.e., ASTM D2276, Method A-2 or A-3) is not required to ensure adequate protection of the public health and safety. Relocation of the specific ASTM references will provide the flexibility needed to utilize state-of-the-art technology in fuel oil sampling and analysis methodology. Changes to the licensee-controlled documents are performed in accordance with the provisions of 10 CFR 50.59. Thus, adequate controls exist to allow relocation of the specific ASTM Standard references to licensee-controlled documents.

The Bases for SR 3.8.3.2 (MNS) and 3.8.3.3 (CNS) are clarified to reflect that the API gravity is tested in accordance with ASTM D1298 or D287 since ASTM D975 does not specifically address API gravity testing.

The proposed TS and Bases changes will continue to ensure the quality of both new fuel oil and stored fuel oil designated for use in the DGs. Therefore, the OPERABILITY of the DGs is unaffected.

TSTF 2 Based:

The justification given in the NRC-Approved TSTF is that ITS SR 3.8.3.5 (MNS) and 3.8.3.6 (CNS) are preventative maintenance type SRs. Sediment in the tank, or failure to perform the SR does not necessarily result in an inoperable storage tank as stated in the Bases for the SR. Preventative maintenance SRs generally have been relocated from the TS and allowed to be under licensee control. This SR is similar to the DG inspection SR, which was allowed to be relocated in licensee-controlled documents; they are both preventative maintenance requirements. Performance of SR 3.8.3.3 (fuel oil testing) and the limits of the Diesel Fuel Oil Testing Program help ensure tank sediment is minimized. Performance of SR 3.8.3.1 (fuel oil volume verification) once per 31 days ensures that any degradation of the tank wall surface that results in a fuel oil volume reduction is detected and corrected in a timely manner.

ATTACHMENT 4

NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The following discussion is a summary of the evaluation of the changes contained in these proposed amendments against the 10 CFR 50.92(c) requirements to demonstrate that all three standards are satisfied. A no significant hazards consideration is indicated if operation of the facility in accordance with the proposed amendments would not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated, or
2. Create the possibility of a new or different kind of accident from any accident previously evaluated, or
3. Involve a significant reduction in a margin of safety.

First Standard

The proposed changes relocate the specific American Society for Testing and Materials (ASTM) Standard references from the Administrative Controls Section of Technical Specifications (TS) to a licensee-controlled document. Since any changes of the licensee-controlled document will be evaluated to the requirements of 10CFR50.59 "Changes, tests, and experiments," no increase in the probability or consequences of an accident previously evaluated is involved. In addition, the "clear and bright" test used to establish the acceptability of new fuel oil for use prior to addition to the storage tanks has expanded to allow a water and sediment content test to be performed to establish the acceptability of new fuel oil. The Bases for SR 3.8.3.3 (CNS) and 3.8.3.2 (MNS) are revised to indicate that the API gravity is tested in accordance with ASTM D1298 or D287.

Relocating the specific ASTM Standard references from the TS to a licensee-controlled document, allowing a water and sediment test to be performed to establish the acceptability of new fuel oil, and revising the TS Bases will not affect or degrade the ability of the emergency diesel generators (DGs) to perform their specified safety function. Fuel oil quality will continue to meet ASTM requirements.

In addition Surveillance Requirements (SR) 3.8.3.5 for McGuire and 3.8.3.6 for Catawba are revised to remove the requirement for a 10-year tank inspection and cleaning. This requirement will be moved to a licensee-controlled document. Any changes of the licensee-controlled document

will be evaluated to the requirements of 10CFR50.59
"Changes, tests, and experiments,".

This change will not affect or degrade the ability of the emergency diesel generators (DGs) to perform their specified safety function. Fuel oil quality will continue to meet ASTM requirements.

The proposed changes do not adversely affect accident initiators or precursors nor alter the design assumptions, conditions, and configuration of the facility or the manner in which the plant is operated and maintained. The proposed changes do not alter or prevent the ability of structures, systems, or components (SSCs) from performing their intended function to mitigate the consequences of an initiating event within the assumed acceptance limits. The proposed change does not affect the source term, containment isolation, or radiological release assumptions used in evaluating the radiological consequences of an accident previously evaluated. Further, the proposed changes do not increase the types and amounts of radioactive effluent that may be released offsite, nor significantly increase individual or cumulative occupational/public radiation exposures.

Therefore, the changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

Second Standard

The proposed changes relocate the specific ASTM Standard references from the Administrative Controls Section of TS to a licensee-controlled document. In addition, the "clear and bright" test used to establish the acceptability of new fuel oil for use prior to addition to storage tanks has been expanded to allow a water and sediment content test to be performed to establish the acceptability of new fuel oil. The proposed changes revise Bases B 3.8.3 to reference the current specific ASTM standards. The Bases for SRs 3.8.3.3(CNS) and 3.8.3.2 (MNS) are revised to indicate that the API gravity is tested in accordance with ASTM D1298 or D287.

In addition Surveillance Requirements (SR) 3.8.3.5 for McGuire and 3.8.3.6 for Catawba are revised to remove the requirement for a 10-year tank inspection and cleaning. This requirement will be moved to a licensee-controlled document. Any changes of the licensee-controlled document

will be evaluated to the requirements of 10CFR50.59
"Changes, tests, and experiments,".

The changes do not involve a physical alteration to the plant (i.e., no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. In addition, the changes do not impose any new or different requirements or eliminate any existing requirements. The changes do not alter assumptions made in the safety analysis or licensing basis. Therefore, the changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

Third Standard

The proposed changes relocate the specific ASTM Standard references from the Administrative Control Section of TS to a licensee-controlled document. Instituting the proposed changes will continue to ensure the use of the current applicable ASTM Standards to evaluate the quality of both new and stored fuel oil designated for use in the emergency diesels. The detail associated with the specific ASTM Standard references is not required to be in the TS to provide adequate protection of the public health and safety, since the TS still retains the requirement for compliance with the applicable ASTM standard. Changes to the licensee-controlled document are performed in accordance with the provisions of 10 CFR 50.59. Should it be determined that future changes involve a potential reduction in a margin of safety, NRC review and approval would be necessary prior to the implementation of the changes. This approach provides an effective level of regulatory control and provides for a more appropriate change control process.

The "clear and bright" test used to establish the acceptability of new fuel oil for use prior to the addition to storage tanks has been expanded to allow a water and sediment content test to be performed to establish the acceptability of new fuel oil. The proposed changes revise Bases B 3.8.3 to allow reference to the current ASTM standard. The Bases for SR 3.8.3.3 is revised to indicate that the API gravity is tested in accordance with ASTM D1298 or D287. The level of safety of facility operation is unaffected by the proposed changes since there is no change in the intent of the TS requirements of assuring fuel oil is of the appropriate quality for emergency DG use.

In addition Surveillance Requirements (SR) 3.8.3.5 for McGuire and 3.8.3.6 for Catawba are revised to remove the

requirement for a 10-year tank inspection and cleaning. This requirement will be moved to a licensee-controlled document. Any changes of the licensee-controlled document will be evaluated to the requirements of 10CFR50.59 "Changes, tests, and experiments". The level of safety of the facility operation is unaffected by the proposed changes since there is no change in the intent of the SR to clean and inspect the fuel tanks.

Therefore, the proposed changes listed above do not involve a significant reduction in a margin of safety.

ATTACHMENT 5

ENVIRONMENTAL IMPACT STATEMENT CONSIDERATION

ENVIRONMENTAL IMPACT STATEMENT CONSIDERATION

Pursuant to 10 CFR 51.22(b), an evaluation of these license amendment requests has been performed to determine whether or not they meet the criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) of the regulations.

These amendments to the Catawba and McGuire TS allow for a relocation of specific ASTM references dealing with diesel fuel oil analyses and the requirement for a ten-year tank inspection and cleaning to licensee-controlled documents. The amendments also allow the use of an optional water and sediment content test in lieu of the current "clear and bright" test to establish the acceptability of new fuel oil. Implementation of these amendments will have no adverse impact upon the Catawba or McGuire units; neither will they contribute to any additional quantity or type of effluent being available for adverse environmental impact or personnel exposure.

It has been determined there is:

1. No significant hazards consideration,
2. No significant change in the types, or significant increase in the amounts, of any effluents that may be released offsite, and
3. No significant increase in individual or cumulative occupational radiation exposures involved.

Therefore, these amendments to the Catawba and McGuire TS meet the criteria of 10 CFR 51.22(c)(9) for categorical exclusion from an environmental impact statement.