ATTACHMENT 1

MARKED-UP IMPROVED TECHNICAL SPECIFICATIONS PAGES FOR CATAWBA

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3.8 ELECTRICAL POWER SYSTEMS

3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air

LCO 3.8.3 The stored diesel fuel oil, lube oil, and starting air subsystem shall be within limits for each required diesel generator (DG).

APPLICABILITY: When associated DG is required to be OPERABLE.

ACTIONS

----------NOTE----------
Separate Condition entry is allowed for each DG.

CONDITION		REQUIRED ACTION		COMPLETION TIME
A.	One or more DGs with fuel oil inventory < 77,100 gal and > 66,100 gal.	A.1	Restore fuel oil level to within limits.	48 hours
B.	One or more DGs with lube oil inventory < ~~600~~ 400 gal and > ~~575~~ 375 gal.	B.1	Restore lube oil inventory to within limits.	48 hours
C.	One or more DGs with stored fuel oil total particulates not within limit.	C.1	Restore fuel oil total particulates within limit.	7 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.3.2	Verify lubricating oil inventory is ≥ 600 (7) 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 ≥ 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

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.3 Diesel Fuel Oil, Lube 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 7 days while the DG is supplying maximum post loss of coolant accident load demand discussed in the UFSAR, Section 9.5.4.2 (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 gravity transfer. All outside tanks 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.

The DG lubrication system is designed to provide sufficient lubrication to permit proper operation of its associated DG under all loading conditions. The system is required to circulate the lube oil to the diesel engine working surfaces and to remove excess heat generated by friction during operation. Each engine oil sump contains an inventory capable of supporting a minimum of 7 days of operation. The onsite storage in addition to the engine oil sump is sufficient to ensure 7 days of continuous operation. This supply is sufficient to allow the operator to replenish lube oil from outside sources.

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).

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 7 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 6 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 (> 6 days), the fact that procedures will be initiated to obtain replenishment, and the low probability of an event during this brief period.

B.1

With lube oil inventory < 600 gal, sufficient lubricating oil to support 7 days of continuous DG operation at full load conditions may not be available. However, the Condition is restricted to lube oil volume reductions that maintain at least a 6 day supply. This restriction allows sufficient time to obtain the requisite replacement volume. A period of 48 hours is considered sufficient to complete restoration of the required volume prior to declaring the DG inoperable. This period is acceptable based on the remaining capacity (> 6 days), the low rate of usage, the fact that procedures will be initiated to obtain replenishment, and the low probability of an event during this brief period.

C.1

This Condition is entered as a result of a failure to meet the acceptance criterion of SR 3.8.3.3. Normally, trending of particulate levels allows sufficient time to correct high particulate levels prior to reaching the limit

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 600 gal requirement is based on the DG manufacturer consumption values for 400 the run time of the DG. Implicit in this SR is the requirement to verify the capability to transfer the lube oil from its storage location to the DG, when the DG lube oil sump does not hold adequate inventory for 7 days of full load operation without the level reaching the manufacturer recommended minimum level.

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 onsite, since DG starts and run time are closely monitored by the unit staff. available

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

ATTACHMENT 2

REPRINTED IMPROVED TECHNICAL SPECIFICATIONS PAGES FOR CATAWBA

3.8 ELECTRICAL POWER SYSTEMS

3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air

LCO 3.8.3 The stored diesel fuel oil, lube oil, and starting air subsystem shall be within limits for each required diesel generator (DG).

APPLICABILITY: When associated DG is required to be OPERABLE.

ACTIONS

----------NOTE----------
Separate Condition entry is allowed for each DG.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more DGs with fuel oil inventory < 77,100 gal and > 66,100 gal.	A.1 Restore fuel oil level to within limits.	48 hours
B. One or more DGs with lube oil inventory < 400 gal and > 375 gal.	B.1 Restore lube oil inventory to within limits.	48 hours
C. One or more DGs with stored fuel oil total particulates not within limit.	C.1 Restore fuel oil total particulates within limit.	7 days

(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

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.3 Diesel Fuel Oil, Lube 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 7 days while the DG is supplying maximum post loss of coolant accident load demand discussed in the UFSAR, Section 9.5.4.2 (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 gravity transfer. All outside tanks 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.

The DG lubrication system is designed to provide sufficient lubrication to permit proper operation of its associated DG under all loading conditions. The system is required to circulate the lube oil to the diesel engine working surfaces and to remove excess heat generated by friction during operation. Each engine oil sump contains an inventory capable of supporting a minimum of 7 days of operation. This supply is sufficient to allow the operator to replenish lube oil from outside sources.

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).

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 7 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 6 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 (> 6 days), the fact that procedures will be initiated to obtain replenishment, and the low probability of an event during this brief period.

B.1

With lube oil inventory < 400 gal, sufficient lubricating oil to support 7 days of continuous DG operation at full load conditions may not be available. However, the Condition is restricted to lube oil volume reductions that maintain at least a 6 day supply. This restriction allows sufficient time to obtain the requisite replacement volume. A period of 48 hours is considered sufficient to complete restoration of the required volume prior to declaring the DG inoperable. This period is acceptable based on the remaining capacity (> 6 days), the low rate of usage, the fact that procedures will be initiated to obtain replenishment, and the low probability of an event during this brief period.

C.1

This Condition is entered as a result of a failure to meet the acceptance criterion of SR 3.8.3.3. Normally, trending of particulate levels allows sufficient time to correct high particulate levels prior to reaching the limit

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

ATTACHMENT 3

DESCRIPTION OF PROPOSED CHANGES AND TECHNICAL JUSTIFICATION

Description of Proposed Changes

ITS 3.8.3 delineates requirements for the Diesel Generator Fuel Oil, Lube Oil, and Starting Air Systems. Specifically, ITS 3.8.3 requires a diesel lube oil inventory of $\geq$ 600 gallons. Condition B states that with one or more diesels with lube oil inventory < 600 gallons and > 575 gallons, the lube oil inventory must be restored to within limits within 48 hours. SR 3.8.3.2 requires verification that the lube oil inventory is $\geq$ 600 gallons on a 31 day frequency.

This amendment request changes the 600 gallon requirement to 400 gallons. In addition, the 575 gallon lower limit of Condition B is modified to 375 gallons. Refer to the ITS 3.8.3 markups for the changes.

Corresponding changes to the Bases for ITS 3.8.3 are also made as indicated in the proposed markups. Note that in the Bases Background section, the fourth paragraph is modified to delete the next to the last sentence. This statement is misleading, in that the engine oil sump inventory alone is sufficient to ensure 7 days of continuous operation, without relying on the onsite storage capability. This sentence was bracketed in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants," and should not have been included in the Catawba Bases. Also, in the Bases for ITS SR 3.8.3.2, the discussion pertaining to the transfer of lube oil from its storage location to the diesel is deleted, since the sump inventory alone is sufficient to meet the 7 day requirement. In the second paragraph of the ITS SR 3.8.3.2 Bases discussion, the word "onsite" is changed to "available" to be consistent with the above change. Clarification is also added to the ITS SR 3.8.3.2 Bases discussion to indicate that the 400 gallon requirement must be met whether or not the diesel generator is running. Finally, a typographical error (Condition "D" should be Condition "E") is being corrected in the first line of the Bases Actions section at the top of page B 3.8.3-5. NUREG-1431 contained this error and it was translated into the Catawba ITS Bases.

These revised requirements are consistent with the design of the Diesel Generator Lube Oil System at Catawba.

Technical Justification

The Diesel Generator Lube Oil System provides sufficient lubrication to permit proper operation of the diesel generators under all loading conditions. The system circulates the lube oil to the diesel engine working

surfaces and removes excess heat generated by friction during engine operation. Each engine oil sump contains an inventory capable of supporting a minimum of 7 days of operation. This supply is sufficient to allow the operator to replenish lube oil from outside sources.

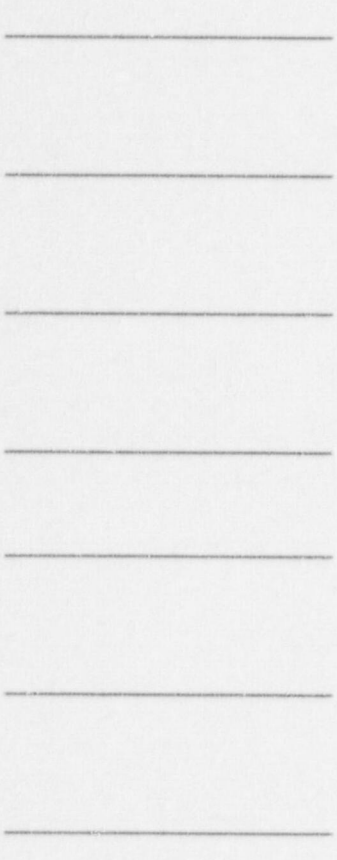
Catawba calculation CNC-1223.59-02-0003, "Diesel Generator Lube Oil System Verification Calculation," Revision 4, dated November 2, 1998, determined the lube oil requirements for the diesels. This calculation indicates that an anti-vortexing baffle is present at the bottom of each lube oil sump tank, resulting in an unusable volume of 161.4 gallons. The calculation requires a 7 day supply of oil above the tank baffle. According to vendor calculations, the burn rate for diesel lube oil is 1.2 gallons per hour. A 7 day supply of lube oil therefore requires 1.2 gallons per hour x 24 hours/day x 7 days = 201.6 gallons. This 201.6 gallon requirement must be added to the unusable volume in the sump, resulting in a sump inventory requirement of 161.4 gallons + 201.6 gallons = 363 gallons. Therefore, 363 gallons are required in the tank to ensure a 7 day requirement. For conservatism, an ITS volume requirement of 400 gallons is being selected. The lower limit of ITS 3.8.3 Condition B is chosen to be 375 gallons. The Bases states that the lower limit of Condition B needs to ensure at least a 6 day supply. A 375 gallon lower limit for Condition B will therefore easily meet the 6 day requirement of Condition B. The normal level in the sump tank is approximately 540 gallons when the diesel generator is in standby condition (not running). When the diesel is started and lube oil is circulated through the engine, the sump tank inventory drops to approximately 450 gallons. Therefore, the 400 gallon ITS limit can easily be met whether or not the engine is running. Catawba plans to raise the existing low lube oil alarm setpoint from its present value of 385 gallons to 415 gallons. This alarm will therefore annunciate prior to the 400 gallon ITS value being reached. Refer to the attached Figure 1 for a graphical representation of diesel generator lube oil inventory requirements.

The proposed changes are therefore determined to be acceptable, since a 400 gallon ITS requirement will support operation of the diesel generator at full load for a 7 day period.

Note that the previous ITS values of 600 gallons and 575 gallons were based on incorrect information in the Catawba UFSAR. Section 9.5.7.2.1 of the UFSAR indicates that the lube oil sump tank has a 700 gallon capacity. It also

indicates that the normal operating volume of the sump tank is 600 gallons. The UFSAR information pertaining to this system will be revised as necessary.

Figure 1 Diesel Generator Lube Oil Inventory Requirements



Top of sump tank = 579 gallons

Proposed new alarm setpoint for lube oil sump tank low level = 415 gallons

ITS lube oil requirement = 400 gallons

Lower limit of ITS Condition B = 375 gallons

Calculated 7 day lube oil requirement = 363 gallons

Lube oil sump tank vortexing baffle (unusable volume) = 161.4 gallons

Bottom of sump tank = 0 gallons

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 this proposed amendment 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 amendment 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

Implementation of this amendment would not involve a significant increase in the probability or consequences of an accident previously evaluated. Approval of this amendment will have no significant effect on accident probabilities or consequences. The Diesel Generator Lube Oil System is not an accident initiating system; therefore, there will be no impact on any accident probabilities by the approval of this amendment. The design of the system is not being modified by this proposed amendment. The amendment merely aligns ITS requirements with the existing design and function of the system. Therefore, there will be no impact on any accident consequences.

Second Standard

Implementation of this amendment would not create the possibility of a new or different kind of accident from any accident previously evaluated. No new accident causal mechanisms are created as a result of NRC approval of this amendment request. No changes are being made to the plant which will introduce any new accident causal mechanisms. This amendment request does not impact any plant systems that are accident initiators, since the Diesel Generator Lube Oil System is an accident mitigating system.

Third Standard

Implementation of this amendment would not involve a significant reduction in a margin of safety. Margin of safety is related to the confidence in the ability of the fission product barriers to perform their design functions

during and following an accident situation. These barriers include the fuel cladding, the reactor coolant system, and the containment system. The performance of these fission product barriers will not be impacted by implementation of this proposed amendment. The Diesel Generator Lube Oil System is already capable of performing as designed. No safety margins will be impacted.

Based upon the preceding analysis, Duke Energy has concluded that the proposed amendment does not involve a significant hazards consideration.

ATTACHMENT 5

ENVIRONMENTAL ANALYSIS

Environmental Analysis

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

This amendment to the Catawba ITS modifies requirements for the Diesel Generator Lube Oil System to align these requirements with the design and function of the system. Implementation of this amendment will have no adverse impact upon the Catawba units; neither will it 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, this amendment to the Catawba ITS meets the criteria of 10 CFR 51.22(c)(9) for categorical exclusion from an environmental impact statement.