UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

August 19, 2016

Mr. Shane M. Marik
Site Vice President and Chief Nuclear Officer
Omaha Public Power District
Fort Calhoun Station
9610 Power Lane, Mail Stop FC-2-4
Blair, NE 68008

SUBJECT: FORT CALHOUN STATION, UNIT NO. 1 - ISSUANCE OF AMENDMENT RE: ADOPTION OF TSTF-501, REVISION 1, "RELOCATE STORED FUEL OIL AND LUBE OIL VOLUME VALUES TO LICENSEE CONTROL" (CAC NO. MF6722)

Dear Mr. Marik:

The U.S. Nuclear Regulatory Commission (NRC) has issued the enclosed Amendment No. 289 to Renewed Facility Operating License No. DPR-40 for the Fort Calhoun Station, Unit No. 1. The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated September 11, 2015, as supplemented by letter dated April 8, 2016.

The amendment revised the TSs by removing the current stored diesel fuel oil and lube oil numerical volume requirements from the TSs and replacing them with emergency diesel generator operating time requirements consistent with NRC-approved Technical Specifications Task Force (TSTF) Traveler TSTF-501, Revision 1, "Relocate Stored Fuel Oil and Lube Oil Volume Values to Licensee Control," including plant-specific variances.

A copy of the related Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

CFLyon

Carl F. Lyon, Project Manager
Plant Licensing Branch IV-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-285

Enclosures.
1. Amendment No. 289 to DPR-40
2. Safety Evaluation

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
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OMAHA PUBLIC POWER DISTRICT

DOCKET NO. 50-285

FORT CALHOUN STATION, UNIT NO. 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 289
Renewed License No. DPR-40

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by the Omaha Public Power District (the licensee), dated September 11, 2015, as supplemented by letter dated April 8, 2016, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, Renewed Facility Operating License No. DPR-40 is amended by changes as indicated in the attachment to this license amendment, and paragraph 3.B. of Renewed Facility Operating License No. DPR-40 is hereby amended to read as follows:

   B. Technical Specifications

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 289, are hereby incorporated in the license. Omaha Public Power District shall operate the facility in accordance with the Technical Specifications.

3. The license amendment is effective as of its date of issuance and shall be implemented within 60 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Robert J. Pascarelli, Chief
Plant Licensing Branch IV-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Renewed Facility
Operating License No. DPR-40
and Technical Specifications

Date of Issuance: August 19, 2016

ATTACHMENT TO LICENSE AMENDMENT NO. 289

RENEWED FACILITY OPERATING LICENSE NO. DPR-40

DOCKET NO. 50-285

Replace the following pages of the Renewed Facility Operating License No. DPR-40 and the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain vertical lines indicating the areas of change.

License Page

REMOVE	INSERT
-3-	-3-

Technical Specifications

REMOVE	INSERT
2.7 - Page 1	2.7 - Page 1
2.7 - Page 4	2.7 - Page 4
2.7 - Page 6	2.7 - Page 6
2.7 - Page 7	2.7 - Page 7
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3.2 - Page 3	3.2 - Page 3
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(4) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source, or special nuclear material without restriction to chemical or physical form for sample analysis or instrument calibration or when associated with radioactive apparatus or components;

(5) Pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by operation of the facility.

3. This renewed license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Section 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; and is, subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

A. Maximum Power Level

Omaha Public Power District is authorized to operate the Fort Calhoun Station, Unit 1, at steady state reactor core power levels not in excess of 1500 megawatts thermal (rate power).

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 289 are hereby incorporated in the license. Omaha Public Power District shall operate the facility in accordance with the Technical Specifications.

C. Security and Safeguards Contingency Plans

The Omaha Public Power District shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The plans, which contain Safeguards Information protected under 10 CFR 73.21, are entitled: "Fort Calhoun Station Security Plan, Training and Qualification Plan, Safeguards Contingency Plan," submitted by letter dated May 19, 2006.

OPPD shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The OPPD CSP was approved by License Amendment No. 266 and modified by License Amendment No. 284.

2.0 LIMITING CONDITIONS FOR OPERATION

2.7 Electrical Systems

Applicability

Applies to the availability of electrical power for the operation of plant components.

Objective

To define those conditions of electrical power availability necessary to provide for safe reactor operation and the continuing availability of engineered safety features.

Specifications

(1) Minimum Requirements

The reactor shall not be heated up or maintained at temperatures above 300°F unless the following electrical systems are operable:

a. Unit auxiliary power transformers T1A-1 or T1A-2 (4,160 V).

b. House service transformers T1A-3 and T1A-4 (4,160 V).

c. 4,160 V engineered safety feature buses 1A3 and 1A4.

d. 4,160 V/480 V Transformers T1B-3A, T1B-3B, T1B-3C, T1B-4A, T1B-4B, T1B-4C.

e. 480 V distribution buses 1B3A, 1B3A-4A, 1B4A, 1B3B, 1B3B-4B, 1B4B, 1B3C, 1B3C-4C, 1B4C.

f. MCC No. 3A1, 3A2, 3B1, 3C1, 3C2, 4A1, 4A2, 4B1, 4C1 and 4C2.

g. 125 V d-c buses No. 1 and 2 (Panels EE-8F and EE-8G).

h. 125 V d-c distribution panels AI-41A and AI-41B.

i. 120V a-c instrument buses A, B, C, and D (Panels AI-40-A, B, C and D).

j. Two (2) 125 V d-c bus No. 1 required inverters: (A and C), or (A and associated swing inverter), or (C and associated swing inverter) AND;

Two (2) 125 V d-c bus No. 2 required inverters: (B and D), or (B and associated swing inverter), or (D and associated swing inverter).

k. Station batteries No. 1 and 2 (EE-8A and EE-8B) including one battery charger on each 125 V d-c bus No. 1 and 2 (EE-8F and EE-8G).

l. Two emergency diesel generators (DG-1 and DG-2).

m. One diesel fuel oil storage system containing a volume of diesel fuel which is ≥ a 7-day supply.

n. Lubricating oil inventory for each DG is ≥ a 7-day supply.

o. Each required starting air receiver bank pressure is ≥ 190 psig.

2.0 **LIMITING CONDITIONS FOR OPERATION**
2.7 Electrical Systems (Continued)

o. One of the required inverters may be inoperable for up to 24 hours provided the reactor protective and engineered safeguards systems instrument channels supplied by the remaining three required inverters are all operable and the 120V a-c instrument bus associated with the inoperable inverter is powered from its bypass source.

(3) Modification of Minimum Requirements for Diesel Fuel Oil, Diesel Lube Oil, and Starting Air

The minimum requirements may be modified to the extent that any of the following conditions will be allowed after the reactor coolant has been heated above 300°F. However, the reactor shall not be made critical unless all minimum requirements are met.

a. If the inventory of diesel fuel oil in the diesel fuel storage system is less than a 7-day supply, but greater than a 6 day supply, then restore the required inventory within 48 hours.

b. If one or more diesel generators has lube oil inventory < a 7-day supply and > a 6 day supply, then restore the lube oil inventory to within limits within 48 hours.

c. If the total particulates of fuel oil stored in FO-1 or FO-10 is not within limits, then restore fuel oil total particulates to within limits within 7 days.

d. If the properties of new fuel oil stored in FO-1 or FO-10 is not within limits, then restore stored fuel oil properties to within limits within 30 days.

e. If one or more diesel generators has the required starting air receiver bank with pressure < 190 psig and > 150 psig, then restore starting air receiver bank pressure to > 190 psig within 48 hours.

f. If the Required Action and associated Completion Time of a, b, c, d or e are not met or one or more diesel generators have diesel fuel oil, lube oil, or a required starting air subsystem not within limits for reasons other than a, b, c, d, or e, then declare the associated DG inoperable immediately.

2.0 **LIMITING CONDITIONS FOR OPERATION**
2.7 Electrical Systems (Continued)

Basis (continued)

Equipment served by 4.16 kV and 480 V auxiliary buses and MCC's is arranged so that loss of an entire 4.16 kV bus does not compromise safety of the plant during DBA conditions. For example, if 4.16 kV bus 1A3 is lost, two raw water pumps, one low pressure safety injection pump, two high pressure safety injection pumps, one auxiliary feedwater pump, two component cooling water pumps, one containment spray pump and two containment air fans are lost. This leaves two raw water pumps, one low pressure safety injection pump, one high pressure safety injection pump, one component cooling water pump, one containment spray pumps and two containment air fans which is more than sufficient to control containment pressure below the design value during the DBA.

Each diesel generator has sufficient capacity to start and run at design load required by engineered safety features equipment. The safety features operated from one diesel generator can adequately cool the core for any loss of coolant accident and also maintain the containment pressure within the design value. TS 2.7(2)j limits a single period of inoperability for one diesel generator (DG) to 7 consecutive days and states that the cumulative total time of inoperability for both DGs during any calendar month shall not exceed 7 days. This is to ensure that a DG is not taken out in excess of 7 consecutive days in 2 months (e.g., 7 days at the end of 1 calendar month followed by up to 7 days at the beginning of the next month). The engine base tank capacity of 550 gallons on each diesel provides 3 hours running time (worst case loading) before transfer of fuel oil from the 18,000 gallon capacity emergency diesel generator fuel oil storage tank FO-1 is mandatory. Two fuel oil transfer pumps per diesel, with each being powered from the associated diesel, are available for transferring fuel oil from FO-1 to the day tanks. The minimum diesel fuel oil inventories available to the diesel generators from the emergency diesel generator fuel oil storage tanks FO-1, FO-10, base tanks, and day tanks are maintained to assure there is a 7-day supply of fuel (Ref. 6).

Engineering calculations have determined that 26,739 gallons of diesel fuel will be required to operate both diesel generators for eight hours and a single diesel generator for the remainder of the required 7-day operating period assuming a loss of offsite power coincident with a design basis accident. If diesel fuel storage tanks FO-1 and FO-10 are maintained at a minimum indicated inventory of 16,000 gallons and 13,000 gallons, respectively, the available onsite storage of fuel will provide 7 days of diesel operating time with approximately 850 gallons of margin. In the event that a 7-day supply of diesel fuel is not available, a 6-day supply will be available if the total combined (indicated) inventory in FO-1 and FO-10 is at least 25,000 gallons.

A minimum amount of diesel fuel oil is reserved in the auxiliary boiler fuel oil storage tank FO-10 for transfer to the emergency diesel generator fuel oil storage tank in the event of an emergency to extend the fuel supply for diesel generator operation to 7 days. Methods of transfer of the fuel oil from this tank to FO-1 have been established and procedures have been developed so that the transfer can be made in a timely manner without adversely impacting diesel generator operation.

Therefore, a minimum diesel fuel oil inventory available to the diesel generators from the total on-site diesel fuel oil storage capacity is maintained to assure the operation of one diesel generator at the required post accident loads for 7 days. The fuel inventory is allowed below the 7 day supply, but above a 6 day supply, for a period of 48 hours.

Amendment No. ~~147,162,180,218,229,251,~~ 289
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2.0 **LIMITING CONDITIONS FOR OPERATION**
2.7 Electrical Systems (Continued)

Basis (continued)

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 initiating a plant shutdown as required by Specification 2.7(3). This period is acceptable based on the remaining capacity (more than 6 days), the fact that procedures are in place to obtain replenishment, and the low probability of an event during this brief period.

Additional supplies of diesel fuel oil are available in the Omaha area and from nearby terminals. Ample facilities exist to assure deliveries to the site within 24 hours.

One battery charger on each battery shall be operating so that the batteries will always be at full charge; this ensures that adequate d-c power will be available for all emergency uses. Each battery has one battery charger permanently connected with a third charger capable of being connected to either battery bus. The chargers are each rated for 400 amperes at 130 volts. Following a DBA the batteries and the chargers will handle all required loads. Each of the reactor protective channels instrumentation channels is supplied by one of the safety-related a-c instrument buses. The removal of one of the safety-related a-c instrument buses is permitted as the 2-of-4 logic may be manually changed to a 2-of-3 logic without compromising safety.

The engineered safeguards instrument channels use safety-related a-c instrument buses (one redundant bus for each channel) and d-c buses (one redundant bus for each logic circuit). The removal of one of the safety-related a-c instrument buses is permitted as the two of four logic automatically becomes a two of three logic.

The requirement in Specification 2.7(2)j, to declare required redundant feature(s) inoperable, is intended to provide assurance that a loss of offsite power, during the period that a DG is inoperable, does not result in a complete loss of safety function of critical systems. These features are designed with redundant safety related components.

Redundant required feature failures consist of inoperable features with a component redundant to the component that has an inoperable DG. The steam driven auxiliary feedwater pump FW-10 is required to be considered a redundant required feature to motor driven auxiliary feedwater pump FW-6, and, is therefore, required to be determined OPERABLE, since there are only two safety-related AFW pumps. With FW-10 and DG-1 INOPERABLE, coincident with a single failure of house service transformer T1A-3, would result in a complete loss of a safety function. With FW-6 and DG-2 INOPERABLE, coincident with a single failure of house service transformer T1A-4, would not result in a complete loss of a safety function since FW-10 would still be OPERABLE.

Redundant required features for an inoperable DG do not include components powered from 125 VDC or 120 VAC sources, since a loss of function would not occur with an inoperable DG coincident with a single failure of its associated house service transformer. Radiation Monitors RM-051, RM-052, and RM-062 are required to be considered redundant features since the monitors are contained on a skid assembly which is powered from 480 VAC.

2.0 **LIMITING CONDITIONS FOR OPERATION**
2.7 Electrical Systems (Continued)

Basis (continued)

The time allowed for declaring a redundant required feature(s) inoperable is intended to allow the operator time to evaluate and repair any discovered inoperabilities. This also allows for an exception to the normal beginning for the limiting condition for operation time. In this required action, the time only begins upon discovery that both:

a. An inoperable DG exists and
b. A required feature associated with the other 4160V bus is inoperable.

If at any time during the existence of this Condition (one DG inoperable) a required feature subsequently becomes inoperable, this time begins to be tracked. Discovering one required DG inoperable coincident with one or more inoperable required support or supported features, or both, that are associated with the OPERABLE DG, results in starting the time for the required action. Four hours from the discovery of these events existing concurrently, is acceptable because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown.

In this modified Condition (one DG inoperable and loss of required component on the opposite DG), the remaining OPERABLE DG and offsite circuits are adequate to supply electrical power to the onsite electrical distribution system. Thus, on a component basis, single failure protection for the required feature's function may have been lost; however, the function has not been lost. The 4-hour allowed time takes into account the operability of the redundant counterpart to the inoperable required feature. Additionally, the 4-hour allowed time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period.

When a system has installed spare components, the spare component is not required to be OPERABLE to meet required feature operability. As an example, there are three installed 100% capacity high pressure safety injection (HPSI) pumps, one (SI-2B) associated with 4160V bus 1A4, and two (SI-2A and SI-2C) associated with 4160V bus 1A3. Specification 2.3(1) *Minimum Requirements* are that there be one HPSI pump on each associated 4160V bus and each safety injection refueling water tank-containment sump header. This requires that SI-2A OR SI-2C be OPERABLE, not both.

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. The onsite storage of 500 gallons in addition to the engine oil sump is sufficient to ensure 7 days of continuous operation. This supply is sufficient supply to allow the operator to replenish lube oil from outside sources. With lube oil inventory < 500 gallons, 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 a minimum of 450 gallons, which is 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.

2.0 **LIMITING CONDITIONS FOR OPERATION**
2.7 Electrical Systems (Continued)

Basis (continued)

For proper operation of the standby DGs, it is necessary to ensure the proper quality of the fuel oil. FCS has a Diesel Fuel Oil Testing Program which includes proper fuel oil quality. This program includes purchasing, receipt testing of new fuel oil, and periodic analyses of the stored fuel oil. FCS is not committed to the fuel analysis portion of Regulatory Guide 1.137 (Ref. 4) or ANSI N195-1976 (Ref. 5); however, these standards were utilized as guidance in the development of the Diesel Fuel Oil testing program. The fuel oil properties governed by these Surveillance Requirements are the water and sediment content, the kinematic viscosity, specific gravity (or API gravity), and impurity level. TS 2.7(3)c is entered as a result of a failure to meet the acceptance criterion of Table 3-5, Item 9c. 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 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.

With the new fuel oil properties defined in the Bases for Table 3-5, Item 9c 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 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.

Each DG has two starting air subsystems (primary and secondary), each with adequate capacity for five successive start attempts of the DG without recharging the air start receivers. Either subsystem can fulfill the function of starting the DG, however the requirements of TS 3.7(1)a.i must be met for the required starting air subsystem. With starting air receiver bank pressure < 190 psig, sufficient capacity for five successive DG start attempts does not exist. However, as long as the receiver bank pressure is > 150 psig, there is adequate capacity for at least one start attempt, and the DG can be considered OPERABLE while the air receiver bank pressure is 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 brief period.

References

(1) USAR, Section 8.3.1.2
(2) USAR, Section 8.4.1
(3) USAR, Section 8.2.2
(4) Regulatory Guide 1.137
(5) ANSI N195-1976
(6) USAR, Section 8.4.1.2

3.0 SURVEILLANCE REQUIREMENTS

3.2 Equipment and Sampling Tests (continued)

The RCS water inventory balance must be performed with the reactor at stable operating conditions (stable RCS pressure, temperature, power level, pressurizer and makeup tank levels, makeup and letdown, and Reactor Coolant Pump (RCP) seal leakoff flows). Therefore, a note is added allowing that this surveillance requirement is not required to be performed until after establishing normal operating temperature and pressure.

Stable operation is required to perform a proper water inventory balance since calculations during maneuvering are not useful. For RCS operational leakage determined by water inventory balance, stable operation is defined as stable RCS pressure, temperature, power level, pressurizer and makeup tank levels, makeup and letdown, and RCP seal leakoff flows. The water inventory balance should be performed as soon as practical after stable conditions are met.

During Plant startup, a visual leak check is performed at normal system pressure prior to entering MODE 3. This verification is performed to ensure no RCPB leaks exist.

Table 3-5, Item 9a, ensures that there is an adequate inventory of fuel oil in the storage tanks to operate both diesel generators for eight hours and a single diesel generator for the remainder of the required 7-day operating period. If diesel fuel storage tanks FO-1 and FO-10 are maintained at a minimum indicated inventory of 16,000 gallons and 13,000 gallons respectively, the available onsite capacity will provide 7 days of diesel operating time with approximately 850 gallons of margin.

Table 3-5, Item 9b ensures that sufficient lube oil inventory is available to support at least 7 days of full load operation for each DG. The 500 gallon requirement is based on the DG manufacturer consumption values for the run time of the DG. Implicit in this Surveillance Requirement is the requirement to assure the capability to transfer the lube oil from its storage location to the DG, since 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. A 31 day Surveillance interval 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.

For Table 3-5, Item 9c, 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), but in no case is the time between receipt of new fuel and conducting the tests to exceed 31 days. The tests, limits, and applicable ASTM Standards are as follows:

a. Sample the new fuel oil in accordance with ASTM D4057 (Ref. 2),

3.0 SURVEILLANCE REQUIREMENTS

3.2 Equipment and Sampling Tests (continued)

b. Verify in accordance with the tests specified in ASTM D975 (Ref. 2) 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° when tested in accordance with ASTM D287 (Ref. 2), a kinematic viscosity at 40°C of ≥ 1.9 centistokes and ≤ 4.1 centistokes, and a flash point ≥ 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 or a water and sediment content within limits when tested in accordance with ASTM D2709 (Ref. 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 (Ref. 3) are met for new fuel oil when tested in accordance with ASTM D975 (Ref. 2), except that the analysis for sulfur may be performed in accordance with ASTM D2622 (Ref. 2). 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 in accordance with ASTM 6217 (Ref. 2) with the exception that the filters specified in the ASTM method may have a nominal pore size of up to 3 microns. 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 Surveillance interval of this test takes into consideration fuel oil degradation trends that indicate that particulate concentration is unlikely to change significantly between Surveillance intervals.

Table 3-5, Item 9d 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 cranking time required to accelerate the DG to firing speed. The pressure specified in this Surveillance Requirement is intended to reflect the lowest value at which the five starts can be accomplished. The 31-day Surveillance interval 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.

3.0 SURVEILLANCE REQUIREMENTS

3.2 Equipment and Sampling Tests (continued)

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 92 days per Table 3-5, Item 9e, 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 interval is established to ensure excessive water does not accumulate in the fuel oil system, which meets the intent of Regulatory Guide 1.137 (Ref. 4). This Surveillance Requirement is for preventative maintenance. The presence of water does not necessarily represent failure of this Surveillance Requirement provided the accumulated water is removed during performance of the Surveillance

Table 3-5, Item 8b verifies that primary to secondary LEAKAGE is less or equal to 150 gallons per day through any one SG. Satisfying the primary to secondary LEAKAGE limit ensures that the operational LEAKAGE performance criterion in the Steam Generator Program is met. If this surveillance requirement is not met, compliance with LCO 3.17, "Steam Generator Tube Integrity," should be evaluated. The 150 gallons per day limit is measured at room temperature as described in Reference 5. The operational LEAKAGE rate limit applies to LEAKAGE through any one SG. If it is not practical to assign the LEAKAGE to an individual SG, all the primary to secondary LEAKAGE should be conservatively assumed to be from one SG.

The Surveillance is modified by a footnote which states that the Surveillance is not required to be performed until 12 hours after establishment of steady state operation. For RCS primary to secondary LEAKAGE determination, steady state is defined as stable RCS pressure, temperature, power level, pressurizer and makeup tank levels, makeup and letdown, and RCP seal injection and return flows.

The Surveillance Frequency of daily is a reasonable interval to trend primary to secondary LEAKAGE and recognizes the importance of early leakage detection in the prevention of accidents. The primary to secondary LEAKAGE is determined using continuous process radiation monitors or radiochemical grab sampling in accordance with the EPRI guidelines (Ref. 5).

Table 3-5, Item 25 verifies adequate measurements are taken to ensure that facility protective actions will be taken (and power operation will be terminated) in the event of high and/or low river level conditions. The high river level limit of less than 1004 feet mean sea level is based on the maximum elevation at which facility flood control measures provide protection to safety related equipment (i.e., due to restricted access/egress to the intake structure veranda once the flood barriers are installed prior to river level reaching 1004 feet msl). A continuous watch will be established at 1002 feet mean sea level to provide adequate response time for rising river levels in accordance with the abnormal operating procedure. The river level surveillance requirement specified also ensures sufficient net positive suction head is available for operating the RW pumps.

3.0 SURVEILLANCE REQUIREMENTS

3.2 Equipment and Sampling Tests (continued)

The minimum river level of 976 feet 9 inches provides adequate suction to the RW pumps for cooling plant components. The surveillance frequency of "Daily" is a reasonable interval and models guidance provided in NUREG-0212, Revision 2, "Standard Technical Specifications for Combustion Engineering Pressurized Water Reactors," Section 4.7.6. This surveillance requirement verifies that the Missouri River water level is maintained at a level greater than or equal to 976 feet 9 inches mean sea level. A continuous watch is established to monitor the river level when the river level reaches 980 feet mean sea level to assure no sudden loss of water supply occurs.

Table 3-5, Item 26 verifies the proper position of stops on high pressure safety injection system valves. The valves have stops to position them properly so that flow is restricted to a ruptured cold leg, ensuring that the other cold legs receive at least the required minimum flow. The refueling frequency is based on the need to perform these Surveillances under the conditions that apply during a plant outage and the potential for unplanned transients if the Surveillances were performed with the reactor at power.

References

1) USAR, Section 9.10
2) ASTM D4057, ASTM D975, ASTM D4176, ASTM D2622, ASTM D287, ASTM 6217, ASTM D2709
3) ASTM D975, Table 1
4) Regulatory Guide 1.137
5) EPRI, "Pressurized Water Reactor Primary-to-Secondary Leak Guidelines."

TABLE 3-4

MINIMUM FREQUENCIES FOR SAMPLING TESTS

	Type of Measurement and Analysis	Sample and Analysis Frequency
1. Reactor Coolant		
(a) Power Operation (Operating Mode 1)	(1) Gross Radioactivity (Gamma emitters)	1 per 3 days
	(2) Isotopic Analysis for DOSE EQUIVALENT I-131	(i) 1 per 14 days
		(ii) 1 per 8 hours[1] whenever the radioactivity exceeds 1.0 μCi/gm DOSE EQUIVALENT I-131.
		(iii) 1 sample between 2-8 hours following a thermal power change exceeding 15% of the rated thermal power within a 1-hour period.
	(3) E Determination	1 per 6 months[2]
	(4) Dissolved oxygen and chloride	1 per 3 days
(b) Hot Standby (Operating Mode 2)	(1) Gross Radioactivity (Gamma emitters)	1 per 3 days
Hot Shutdown (Operating Mode 3)	(2) Isotopic Analysis for DOSE EQUIVALENT I-131	(i) 1 per 8 hours[1] whenever the radioactivity exceeds 1.0 μCi/gm DOSE EQUIVALENT I-131.
		(ii) 1 sample between 2-8 hours following a thermal power change exceeding 15% of the rated thermal power change exceeding 15% of the rated thermal power within a 1-hour period.
	(3) Dissolved oxygen and chloride	1 per 3 days

TABLE 3-4 (Continued)

MINIMUM FREQUENCIES FOR SAMPLING TESTS

		Type of Measurement and Analysis	Sample and Analysis Frequency
1.	Reactor Coolant (Continued)		
	(c) Cold Shutdown (Operating Mode 4)	(1) Chloride	1 per 3 days
	(d) Refueling Shutdown (Operating Mode 5)	(1) Chloride (2) Boron Concentration	1 per 3 days(3) 1 per 3 days(3)
	(e) Refueling Operation	(1) Chloride (2) Boron Concentration	1 per 3 days(3) 1 per 3 days(3)
2.	SIRW Tank	Boron Concentration	M
3.	Concentrated Boric Acid Tanks	Boron Concentration	W
4.	SI Tanks	Boron Concentration	M
5.	Spent Fuel Pool	Boron Concentration	See Footnote 4 below
6.	Steam Generator Blowdown (Operating Modes 1 and 2)	Isotopic Analysis for Dose Equivalent I-131	W(5)

(1) Until the radioactivity of the reactor coolant is restored to ≤1 μCi/gm DOSE EQUIVALENT I-131.

(2) Sample to be taken after a minimum of 2 EFPD and 20 days of power operation have elapsed since reactor was subcritical for 48 hours or longer.

(3) Boron and chloride sampling/analyses are not required when the core has been off-loaded. Reinitiate boron and chloride sampling/analyses prior to reloading fuel into the cavity to assure adequate shutdown margin and allowable chloride levels are met.

(4) Prior to placing unirradiated fuel assemblies in the spent fuel pool or placing fuel assemblies in a spent fuel cask in the spent fuel pool, and weekly when unirradiated fuel assemblies are stored in the spent fuel pool, or every 48 hours when fuel assemblies are in a spent fuel storage cask in the spent fuel pool.

(5) When Steam Generator Dose Equivalent I-131 exceeds 50 percent of the limits in Specification 2.20, the sampling and analysis frequency shall be increased to a minimum of 5 times per week. When Steam Generator Dose Equivalent I-131 exceeds 75 percent of this limit, the sampling and analysis frequency shall be increased to a minimum of once per day.

TABLE 3-5
MINIMUM FREQUENCIES FOR EQUIPMENT TESTS

		Test	Frequency	USAR Section Reference
1.	Control Element Assemblies	Drop times of all full-length CEA's	Prior to reactor criticality after each removal of the reactor vessel closure head	7.5.3
2.	Control Element Assemblies	Partial movement of all CEA's (Minimum of 6 in)	Q	7
3.	Pressurizer Safety Valves	Verify each pressurizer safety valve is OPERABLE in accordance with the Inservice Testing Program. Following testing, lift settings shall be 2485 psig ±1% and 2530 psig ±1% respectively.	In accordance with the Inservice Testing Program[1]	7
4.	Main Steam Safety Valves	Set Point	R	4
5.	DELETED			
6.	DELETED			
7.	DELETED			
8a.	Reactor Coolant System Leakage[3]	Evaluate	D[2]	4
8b.	Primary to Secondary Leakage[4]	Continuous process radiation monitors or radiochemical grab sampling	D[2]	4
9a	Diesel Fuel Supply	Verify diesel fuel inventory ≥ a 7 day supply of fuel.	M	8.4
9b.	Diesel Lubricating Oil	Verify lubricating oil inventory ≥ a 7 day supply.	M	8.4
9c.	Diesel Fuel Oil Properties	Test Properties	In accordance with the Diesel Fuel Oil Testing Program	8.4
9d.	Required Diesel Generator Air Start Receiver Bank Pressure	Air Pressure	M	8.4

TABLE 3-5
MINIMUM FREQUENCIES FOR EQUIPMENT TESTS

		Test	Frequency	USAR Section Reference
9e.	Check for and Remove Accumulated Water from Each Fuel Oil Storage Tank	Check for Water and Remove	Q	8.4
10a.	Charcoal and HEPA Filters for Control Room Air Filteration System (CRAFS)	1. In-Place Testing[5] Charcoal adsorbers and HEPA filter banks shall be leak tested and show ≥99.95% Freon (R-11 or R-112) and cold DOP particulates removal, respectively.	On a refueling frequency or every 720 hours of system operation or after each complete or partial replacement of the charcoal adsorber/HEPA filter banks, or after any major structural maintenance on the system housing or following significant painting, fire or chemical releases in a ventilation zone communicating with the system.	9.10
		2. Laboratory Testing[5] Verify, within 31 days after removal, that a laboratory test of a sample of the charcoal adsorber, when obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows methyliodide penetration less than 0.175% when tested in accordance with ASTM D3803-1989 at a temperature of 30°C (86°F) and a relative humidity of 70%.	On a refueling frequency or every 720 hours of system operation or after any structural maintenance on the HEPA filter or charcoal adsorber housing or following significant painting, fire or chemical release in a ventilation zone communicating with the system.	

TABLE 3-5
MINIMUM FREQUENCIES FOR EQUIPMENT TESTS

	Test	Frequency	USAR Section Reference
10a. (continued)	3. Overall System Operation		
	a. Each train shall be operated.	15 continuous minutes every month with heaters operating.	
	b. The pressure drop across the combined HEPA filters and charcoal adsorber banks shall be demonstrated to be less than 9 inches of water at system design flow rate.	R	
	c. Fan shall be shown to operate within ± 10% design flow.	R	
	4. Automatic and manual initiation of each train shall be demonstrated.	R	
10b. Charcoal Adsorbers for Spent Fuel Storage Pool Area	1. In-Place Testing[5] Charcoal adsorbers shall be leak tested and shall show ≥99% Freon (R-11 or R-112) removal.	On a refueling frequency or every 720 hours of system operation, or after each complete or partial replacement of the charcoal adsorber bank, or after any major structural maintenance on the system housing or following significant painting, fire or chemical release in a ventilation zone communicating with the system.	6.2 9.10
	2. Laboratory Testing Verify, within 31 days after removal, that a laboratory test of a sample of the charcoal adsorber, when obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows methyliodide penetration less than 10% when tested in accordance with ASTM D3803-1989 at a temperature of 30°C (86°F) and a relative humidity of 95%.	On a refueling frequency or every 720 hours of system operation or after any structural maintenance on the HEPA filter or charcoal adsorber housing or following significant painting, fire or chemical release in a ventilation zone communicating with the system.	

TABLE 3-5
MINIMUM FREQUENCIES FOR EQUIPMENT TESTS

		Test	Frequency	USAR Section Reference
10b.	(continued)	3. Overall System Operation a. Operation of each circuit shall be demonstrated.	15 continuous minutes every month.	
		b. Volume flow rate through charcoal filter shall be shown to be between 4500 and 12,000 cfm.	R	
		4. Manual initiation of the system shall be demonstrated.	R	
10c.	Charcoal Adsorbers for S.I. Pump Room	1. In-Place Testing[5] Charcoal adsorbers shall be leak tested and shall show ≥99% Freon (R-11 or R-112) removal.	On a refueling frequency or every 720 hours of system operation, or after each complete or partial replacement of the charcoal adsorber bank, or after any major structural maintenance on the system housing or following significant painting, fire or chemical release in any ventilation zone communicating with the system.	9.10 6.2
		2. Laboratory Testing Verify, within 31 days after removal, that a laboratory test of a sample of the charcoal adsorber, when obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows methyliodide penetration less than 10% when tested in accordance with ASTM D3803-1989 at a temperature of 30°C (86°F) and a relative humidity of 95%.	On a refueling frequency or following 720 hours of system operation or after any structural maintenance on the HEPA filter or charcoal adsorber housing or following significant painting, fire or chemical release in a ventilation zone communicating with the system.	
		3. Overall System Operation a. Operation of each circuit shall be demonstrated.	15 continuous minutes every month.	
		b. Volume flow rate shall be shown to be between 3000 and 6000 cfm.	R	

TABLE 3-5
MINIMUM FREQUENCIES FOR EQUIPMENT TESTS

		Test	Frequency	USAR Section Reference
10c.	(continued)	4. Automatic and/or manual initiation of the system shall be demonstrated.	R	
11.	Containment Ventilation System Fusible Linked Dampers	1. Demonstrate damper action. 2. Test a spare fusible link.	1 year, 2 years, 5 years, and every 5 years thereafter.	9.10
12.	Diesel Generator Under-Voltage Relays	Calibrate	R	8.4.3
13.	Motor Operated Safety Injection Loop Valve Motor Starters (HCV-311, 314, 317, 320, 327, 329, 331, 333, 312, 315, 318, 321)	Verify the contactor pickup value at ≤85% of 460 V.	R	
14.	Pressurizer Heaters	Verify control circuits operation for post-accident heater use.	R	
15.	Spent Fuel Pool Racks	Test neutron poison samples for dimensional change, weight, neutron attenuation change and specific gravity change.	1, 2, 4, 7, and 10 years after installation, and every 5 years thereafter.	
16.	Reactor Coolant Gas Vent System	1. Verify all manual isolation valves in each vent path are in the open position.	During each refueling outage just prior to plant start-up.	
		2. Cycle each automatic valve in the vent path through at least one complete cycle of full travel from the control room. Verification of valve cycling may be determined by observation of position indicating lights.	R	
		3. Verify flow through the reactor coolant vent system vent paths.	R	

TABLE 3-5
MINIMUM FREQUENCIES FOR EQUIPMENT TESTS

		Test	Frequency	USAR Section Reference
17.	DELETED			
18.	Shutdown Cooling	1. Verify required shutdown cooling loops are OPERABLE and one shutdown cooling loop is IN OPERATION.	S (when shutdown cooling is required by TS 2.8).	
		2. Verify correct breaker alignment and indicated power is available to the required shutdown cooling pump that is not IN OPERATION.	W (when shutdown cooling is required by TS 2.8).	
19.	Refueling Water Level	Verify refueling water level is ≥ 23 ft. above the top of the reactor vessel flange.	Prior to commencing, and daily during CORE ALTERATIONS and/or REFUELING OPERATIONS inside containment.	
20.	Spent Fuel Pool Level	Verify spent fuel pool water level is ≥ 23 ft. above the top of irradiated fuel assemblies seated in the storage racks.	Prior to commencing, and weekly during REFUELING OPERATIONS in the the spent fuel pool.	
21.	Containment Penetrations	Verify each required containment penetration is in the required status.	Prior to commencing, and weekly during CORE ALTERATIONS and/or REFUELING OPERATIONS in containment.	
22.	Spent Fuel Assembly Storage	Verify by administrative means that initial enrichment and burnup of the fuel assembly is in accordance with Figure 2-10.	Prior to storing the fuel assembly in Region 2 (including peripheral cells).	
23.	P-T Limit Curve	Verify RCS Pressure, RCS temperature, and RCS heatup and cooldown rates are within the limits specified by the P-T limit Figure(s) shown in the PTLR.	This test is only required during RCS heatup and cooldown operations and RCS inservice leak and hydrostatic testing. While these operations are occurring, this test shall be performed every 30 minutes.	
24.	Spent Fuel Cask Loading	Verify by administrative means that initial enrichment and burnup of the fuel assembly is in accordance with Figure 2-11.	Prior to placing the fuel assembly in a spent fuel cask in the spent fuel pool.	

TABLE 3-5
MINIMUM FREQUENCIES FOR EQUIPMENT TESTS

	Test	Frequency	USAR Section Reference
25. River Level	Verify water level is within limits by measurement at least once per 24 hours, when the water level is less than 1004 feet and greater than or equal to 976 feet 9 inches above mean sea levels.	D	9.8
26. HPSI Throttle Valves	Verify, for each HPSI throttle valve listed below, each position stop is in the correct position. HCV-311 HCV-312 HCV-314 HCV-315 HCV-317 HCV-318 HCV-330 HCV-321	R	

[1] The provisions of Technical Specification 3.0.1 and 3.0.5 do not apply.
[2] Whenever the system is at or above operating temperature and pressure.
[3] Not applicable to primary to secondary LEAKAGE.
[4] Verify primary to secondary LEAKAGE is ≤ 150 gallons per day through any one SG. This surveillance is not required to be performed until 12 hours after establishment of steady state operation.
[5] Tests shall be performed in accordance with applicable section(s) of ANSI N510-1980.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 289 TO RENEWED FACILITY

OPERATING LICENSE NO. DPR-40

OMAHA PUBLIC POWER DISTRICT

FORT CALHOUN STATION, UNIT NO. 1

DOCKET NO. 50-285

1.0 INTRODUCTION

By application dated September 11, 2015, as supplemented by letter dated April 8, 2016 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML15254A464 and ML16099A179, respectively), Omaha Public Power District (OPPD, the licensee) requested changes to the Technical Specifications (TSs) for Fort Calhoun Station, Unit No. 1 (FCS). The proposed amendment would revise the TSs by removing the current stored diesel fuel oil and lube oil numerical volume requirements from the TSs and replacing them with emergency diesel generator (EDG) operating time requirements consistent with U.S. Nuclear Regulatory Commission (NRC)-approved Technical Specifications Task Force (TSTF) Traveler TSTF-501, Revision 1, "Relocate Stored Fuel Oil and Lube Oil Volume Values to Licensee Control" (ADAMS Accession No. ML090510686), including plant-specific variances. The availability of this TS improvement was announced in the *Federal Register* on May 26, 2010 (75 FR 29588), as part of the consolidated line item improvement process.

The supplemental letter dated April 8, 2016, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the NRC staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on November 24, 2015 (80 FR 73239).

The licensee requested changes to the FCS TSs to adopt TSTF-501, Revision 1, because the current TSs contain numerical volume requirements for both stored diesel fuel oil and lube oil, and any change to the numerical volume requirements currently requires prior approval from the NRC. As an example, diesel fuel oil numerical volume requirements may need to be modified in order to take into account changes to the energy content (British thermal units per gallon; BTU/gallon) of available fuels in the market. Fluctuations in energy content could be caused by a variety of factors, including changes to regulatory requirements. By adopting TSTF-501, Revision 1, the numerical volume requirements for both stored diesel fuel oil and lube oil would be removed from the TSs. As a result, the numerical volume requirements for both stored

diesel fuel oil and lube oil could be modified by the licensee without prior NRC approval under the provisions of Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.59.

1.1 Proposed Changes

The proposed changes would revise TS 2.7, "Electrical Systems," by removing the current stored diesel fuel oil volume and lube oil level numerical requirements from the TSs and replacing them with EDG operating time requirements so that the volume necessary to meet the TS duration requirements may be modified under licensee control. The TSs would also be modified so that the stored diesel fuel oil and lube oil inventory will require that a 7-day supply be available for a single EDG. As a result, the licensee proposed the following changes:

1. Currently, TS 2.7(1)m and TS 2.7(1)n require that stored diesel fuel oil and lube oil volumes, respectively, must exceed a numerical requirement. As discussed in the TS Bases, these numerical requirements are based on volumes greater than or equal to a 7-day supply. The revision removes the numerical volumetric requirements from the TSs and places them in the TS Bases. The TSs are modified so that TS 2.7(1)m and TS 2.7(1)n state that volume requirements are greater than or equal to a 7-day supply for diesel fuel oil and lube oil, respectively.

2. TS 2.7(3)a and TS 2.7(3)b generally correspond to NUREG-1432, Revision 4, "Standard Technical Specifications - Combustion Engineering Plants," April 2012 (STS) (ADAMS Accession ML12102A165), Limiting Condition for Operation (LCO) 3.8.3 Condition A and Condition B. TS 2.7(3)a and TS 2.7(3)b must be followed when diesel fuel oil and lube oil numerical volume requirements are not met. As discussed in the TS Bases, these numerical requirements are based on volumes less than a 7-day supply but greater than a 6-day supply. The revision locates the volumetric requirements from the TSs and places them in the TS Bases. The TSs are modified so that TS 2.7(3)a and TS 2.7(3)b must be followed when the stored diesel fuel oil and lube oil inventory is less than a 7-day supply, but greater than a 6-day supply for one or more EDGs.

3. Currently, Surveillance Requirements (SRs) 9a and 9b of TS 3.2, Table 3-5, only specify a frequency for checking the volumes of diesel fuel oil and lube oil, and no numerical limit is specified. The proposed change will state that the minimum inventory of diesel fuel oil and lube oil must be greater than a 7-day supply. The associated numerical limits will be specified in the TS Bases.

4. The numerical value for diesel fuel oil supply will be changed in order to address previous non-conservative assumptions in the calculation methodology. This change will be reflected in the TS 2.7 Bases.

The licensee stated in its application that the license amendment request (LAR) is generally consistent with NRC-approved TSTF-501, Revision 1, with plant-specific variances.

1.2 Differences with TSTF-501, Revision 1

The TSs for FCS are organized differently than the STS for Combustion Engineering plants. The information contained in the licensee's TS 2.7, "Electrical Systems," and TS 3.0, "Surveillance Requirements," generally corresponds to the information in STS Section 3.8.3, "Diesel Fuel Oil, Lube Oil, and Starting Air."

The fourth change listed in Section 1.1 of this safety evaluation, in which the licensee proposes to change the numerical diesel fuel oil requirement with updated calculation methodology, is outside of the scope of TSTF-501, Revision 1. The licensee stated in its application that it proposed the change in accordance with NRC Administrative Letter (AL) 98-10, "Dispositioning of Technical Specifications that are Insufficient to Assurance Plant Safety," dated December 29, 1998 (ADAMS Accession No. ML031110108), which provides guidance to licensees to address non-conservative TSs.

2.0 REGULATORY EVALUATION

2.1 Proposed Change to TS 2.7(1), "Minimum Requirements"

The regulation under 10 CFR 50.36(c)(2) defines LCOs. Paragraph 50.36(c)(2)(i) states, in part, that LCOs are "the lowest functional capability or performance levels of equipment required for safe operation of the facility." Paragraph 50.36(c)(2)(ii) states that an LCO must be established for each item meeting one or more of four criteria.

The standby alternating current (AC) power sources are a part of the primary success path and function to mitigate a design-basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier and therefore meets 10 CFR 50.36(c)(2)(B), Criterion 3. Diesel fuel oil and lube oil are necessary for the proper operation of the EDG so it is appropriate that minimum requirements are retained in the TSs to satisfy 10 CFR 50.36(c)(2)(i) since they support the operation of the standby AC power sources. The proposed changes revise TS 2.7(1), "Minimum Requirements," by relocating the current stored diesel fuel oil and lube oil numerical volume requirements from the TSs to the TS Bases so that they may be modified by the licensee under the provisions of 10 CFR 50.59. TSs 2.7(1)m and 2.7(1)n will now require that a 7-day supply of stored diesel fuel oil and lube oil inventory be available for a single EDG. This does not change the current licensing basis for the licensee.

2.2 Proposed Change to TS 2.7(3), "Modification on Minimum Requirements for Diesel Fuel Oil, Diesel Lube Oil, and Starting Air"

Paragraph 50.36(c)(2)(i) states, in part, that "when a limiting condition for operation of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specifications until the condition can be met."

The licensee proposes to revise TS 2.7(3)a and TS 2.7(3)b to reflect the change in LCO requirements as discussed in Section 2.1 of this safety evaluation. Currently TS 2.7(3)a and 2.7(3)b must be followed when the stored diesel fuel oil and lube oil numerical volume requirements are not met. As discussed in the current TS Bases, the numerical volume

requirements in TS 2.7(3)a and 2.7(3)b are based on volumes less than a 7-day supply but greater than a 6-day supply. The proposed change removes the numerical volumetric requirements from the TSs to the TS Bases. The TSs are modified so that TS 2.7(3)a and 2.7(3)b must be followed when the stored diesel fuel oil and lube oil inventory is less than a 7-day supply, but greater than a 6-day supply for one or more EDGs. These remedial actions are permitted by 10 CFR 50.36(c)(2)(i), and the technical justification for allowing these remedial actions is discussed in Section 3.0 of this safety evaluation.

2.3 Proposed Change to TS 3.2, Table 3-5, SRs 9a and 9b

Paragraph 50.36(c)(3) of 10 CFR states that TSs will include SRs which are "requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met."

Currently, SRs 9a and 9b only specify a surveillance frequency for diesel fuel oil inventory and lube oil inventory, respectively. The proposed change will add a requirement for the inventories to be greater than or equal to a 7-day supply. This is consistent with TSTF-501, Revision 1.

2.4 Proposed Change to Numerical Volume Requirement for Diesel Fuel Oil Inventory

The licensee identified several non-conservatisms in its calculation of the minimum required diesel fuel oil inventory, which include:

- Crediting the manual reduction in EDG operating frequency after 24 hours of operation.
- Crediting the load shed of non-safety loads using non-qualified electrical components.
- Failure to account for the operation of non-safety ventilation equipment during EDG operation.
- Failure to account for the operation of equipment necessary to transfer diesel fuel oil from storage tank FO-10 to FO-1.
- Crediting the EDG day tank for the non-running EDG without a means for transferring diesel fuel oil to the running EDG.
- Failure to account for the possibility that the day tank and the base tank may not contain 100 percent of the rated tank volume due to vortexing and other factors.

The licensee subsequently implemented administrative controls in accordance with the guidance of AL 98-10 to address these non-conservatisms and has proposed updated, conservative values for the minimum required diesel fuel oil inventory.

NRC Regulatory Guide (RG) 1.137, Revision 1, "Fuel Oil Systems for Standby Diesel Generators," dated October 1979 (ADAMS Accession No. ML003740180), describes methods acceptable to the NRC staff for meeting regulatory requirements regarding diesel fuel oil

systems for safety-related EDGs. RG 1.137 endorses compliance with industry standard American National Standards Institute (ANSI) N195-1976, "Fuel Oil Systems for Standby Diesel Generators." ANSI N195-1976 recommends that a 10 percent margin be included in addition to the minimum calculated inventory for diesel fuel oil. The licensee stated that its calculation methodology is generally consistent with the methodology discussed in ANSI N195-1976, although the licensee only proposes a 3 percent margin. By letter dated April 8, 2016, in response to an NRC request for additional information (RAI) dated February 23, 2016 (ADAMS Accession No. ML16048A024), the licensee provided reasoning for its proposed 3 percent margin instead of a 10 percent margin. This is discussed in further detail in Section 3.4.6 of this safety evaluation.

3.0 TECHNICAL EVALUATION

3.1 Proposed Change to TS 2.7(1), "Minimum Requirements"

The licensee has revised its EDG fuel oil calculations such that enough diesel fuel oil capacity will be present for both EDGs to start and run for 8 hours and a single EDG will continue to operate for a period of 7 days while the EDG is supplying a worst-case accident load. This onsite diesel fuel oil capacity is sufficient to operate the EDG for longer than the time needed to replenish the onsite diesel fuel oil supply from outside sources.

The standby AC power sources are a part of the primary success path and function or actuate to mitigate a design-basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier. Diesel fuel oil and lube oil are retained in the TSs to satisfy 10 CFR 50.36(c)(2)(i), since they support the operation of the standby AC power sources. The proposed changes would revise TS 2.7, "Electrical Systems," by removing the current stored diesel fuel oil and lube oil numerical volume requirements from the TSs and replacing them with the required diesel operating time of 7 days so that the diesel fuel oil and lube oil volumes necessary to support the required diesel operating time may be modified under licensee control.

The EDG lubrication system is designed to provide sufficient lubrication to permit proper operation of its associated EDG 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 EDG has a lube oil 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.

In order to meet a 7-day supply of stored diesel fuel oil and lube oil for an EDG, TS 2.7 currently contains numerical volume requirements associated with a 7-day supply for each EDG as measured by volume, in gallons. The TS Bases currently discuss that the numerical volume requirements are based on meeting a 7-day supply. The proposed change revises TS 2.7 by relocating the current stored diesel fuel oil and lube oil numerical volume requirements from the TSs to the TS Bases so that the diesel fuel oil and lube oil volumes necessary to support the required EDG operating time may subsequently be modified under licensee control pursuant to 10 CFR 50.59. The licensee proposes to revise the TSs to require that a 7-day inventory of diesel fuel oil and lube oil will be available for an EDG. No changes to the current plant configuration or current 7-day basis are proposed in the application. However, the licensee

proposes a different numerical requirement for this 7-day basis as a result of an updated calculation methodology, which is further discussed in section 3.4.

Section 3.4 below discusses the methodology by which the stored diesel fuel oil and lube oil numerical volume basis may be modified under licensee control. The use of this methodology will ensure that a 7-day supply of stored diesel fuel oil and lube oil for an EDG will be met, thereby providing assurance that the lowest functional capability or performance levels of the EDG required for safe operation of the facility will continue to be met.

Based on the above evaluation, the NRC staff concludes that the proposed change to TS 2.7(1) is acceptable, because TS 2.7(1) will continue to meet the requirements of 10 CFR 50.36(c)(2).

3.2 Proposed Change to TS 2.7(3), "Modification of Minimum Requirements for Diesel Fuel Oil, Diesel Lube Oil, and Starting Air"

Currently, TS 2.7(3)a and TS 2.7(3)b must be followed when the stored diesel fuel oil and lube oil numerical volume requirements are not met. As discussed in the current TS Bases, the numerical volume requirements in TS 2.7(3)a and TS 2.7(3)b are based on volumes less than a 7-day supply, but greater than a 6-day supply. The proposal removes the volumetric numerical requirements from the TSs to the TS Bases. The TSs are modified so that TS 2.7(3)a and TS 2.7(3)b are entered when the stored diesel fuel oil and lube oil inventory is less than a 7-day supply, but greater than a 6-day supply for one or more EDGs.

The licensee did not propose any changes to the required actions or completion times of TS 2.7(3)a and TS 2.7(3)b in its application. The licensee is relocating the current numerical volume requirements from the TSs to the TS Bases and relocating the associated current basis of less than 7 days but greater than 6 days from the TS Bases to the TSs. An updated numerical requirement for diesel fuel oil will be included in the TS Bases. This update is discussed in Section 3.4 of this safety evaluation.

Section 3.4 below discusses the methodology by which the stored diesel fuel oil and lube oil numerical volume basis in the TS Bases may be modified under licensee control. The use of this methodology will ensure that the 7-day and 6-day supplies of stored diesel fuel oil and lube oil for an EDG will continue to be calculated in accordance with NRC-approved methods.

Based on the above evaluation, the NRC staff concludes that the change to TS 2.7(3) is acceptable, because TSs 2.7(3)a and 2.7(3)b will continue to meet the requirements of 10 CFR 50.36(c)(2).

3.3 Proposed Change to TS 3.2, Table 3-5, SRs 9a and 9b

Currently, SRs 9a and 9b in TS 3.2, Table 3-5, only specify a frequency for verifying that inventory requirements for diesel fuel oil and lube oil are met. The licensee proposes to revise the SRs to include time-based requirements for diesel fuel oil and lube oil; specifically, that a 7-day supply be available for an EDG. The numerical volume values will be placed in the TS Bases, and the TSs will state that at least a 7-day supply is available for an EDG. The licensee does not propose to change the surveillance frequency.

The methodology for determining the 7-day stored diesel fuel oil supply for an EDG, as well as the 6-day supply associated with TS 2.7(3)a, is discussed further in Section 3.4 of this safety evaluation.

Based on the above evaluation, the NRC staff concludes that the change to SRs 9a and 9b in TS 3.2, Table 3-5, is acceptable, because SRs 9a and 9b in TS 3.2, Table 3-5 will continue to meet the requirements of 10 CFR 50.36(c)(3).

3.4 Proposed Change to TS 2.7, "Electrical Systems," Calculation Methodology

As stated in the LAR, the licensee has identified and addressed the following non-conservatisms in the currently used calculations for the 7-day supply of diesel fuel oil:

- Crediting the manual reduction in EDG operating frequency after 24 hours of operation.
- Crediting the load shed of non-safety loads using non-qualified electrical components.
- Failure to account for the operation of non-safety ventilation equipment during EDG operation.
- Failure to account for the operation of equipment necessary to transfer diesel fuel oil from storage tank FO-10 to FO-1.
- Crediting the EDG day tank for the non-running EDG without a means for transferring diesel fuel oil to the running EDG.
- Failure to account for the possibility that the day tank and the base tank may not contain 100 percent of the rated tank volume due to vortexing and other factors.

Revised calculations by the licensee resulted in a requirement for an increased diesel fuel oil inventory. The supply in the diesel fuel oil engine storage tank, FO-1, is unchanged, with a required minimum inventory of 16,000 gallons. The diesel fuel oil storage tank, FO-10, which supplements FO-1, will now contain a minimum of 13,000 gallons instead of the previous 10,000 gallons in order to provide 7 days of continuous EDG operation. A usable inventory from FO-1 and FO-10 combined of 25,000 gallons is required to ensure 6 days of continuous EDG operation.

3.4.1 Clarification of Addressed Non-conservatisms and Diesel Fuel Oil Allocations

In RAI EPNB-1 dated February 23, 2016, the NRC staff inquired about the usable capacities of tanks FO-1 and FO-10, since the LAR stated that both are 18,000-gallon capacity tanks.

In its RAI response dated April 8, 2016, the licensee stated that it has administrative controls to prevent filling the tanks above 17,500 gallons to ensure that they do not overflow during fill operations. The 16,000-gallon value is used as an administrative limit to allow operational flexibility during EDG testing. If the administrative limits were raised by 1,000 gallons for each

tank, the TS limit for FO-1 would be 17,000 gallons and the administrative limit for FO-10 would be 17,000 gallons. A typical monthly test for each EDG uses about 200-300 gallons of diesel fuel oil. Diesel fuel oil is required to be ordered when the tank inventory is within 500 gallons of the TS limit, so diesel fuel oil would need to be ordered every time an EDG monthly test is performed. The licensee stated that this would be excessively restrictive for normal operation.

The licensee stated that if the usable capacities of diesel fuel oil in tanks FO-1 and FO-10 were increased to 17,000 gallons, then diesel fuel oil would have to be ordered every time a monthly EDG test is performed. The licensee also stated that it is not committed to ANSI N195-1976, and the diesel fuel oil inventory in excess of the required minimum amount for 7 days of EDG operation is administratively controlled to ensure that monthly EDG testing can be performed without diesel fuel oil inventory reaching or exceeding the minimum amount required to ensure 7 days of EDG operation. Because the minimum amount of diesel fuel oil required to ensure 7 days of EDG operation is not affected by the diesel fuel oil consumption required for EDG testing, the NRC staff concludes that the TS limit for tank FO-1 and the administrative limit for tank FO-10 do not have to be increased.

3.4.2 Diesel Fuel Oil Pump Flow Rates

In RAI EPNB-2 dated February 23, 2016, the NRC staff inquired about the flow rates of the motor-driven pump, FO-37, and the manually operated portable pump. Each pump is used to transfer fuel from FO-10 to FO-1, and the manual pump is to be used if FO-37 fails or is unavailable. In its RAI response dated April 8, 2016, the licensee stated that the flow rate of pump FO-37 is 5.8 gallons per minute (gpm). The manually operated portable pump is capable of a flow rate of 7 gpm. The licensee stated that the maximum flow rate of diesel fuel oil to the EDG is 3 gpm.

The NRC staff concludes that the flow rates of pump FO-37 and the manually operated portable pump are acceptable, because they are both greater than the flow rate of diesel fuel oil to the EDG. This ensures that the EDG fuel supply will not be emptied faster than it can be replenished by the pumps.

3.4.3 Auxiliary Feedwater Pump Diesel Engine Diesel Fuel Oil Consumption

In RAI EPNB-5 dated February 23, 2016, the NRC staff noted that in Section 3.0 of the LAR, the consumption of diesel fuel oil by the auxiliary feedwater pump diesel engine is not recognized in the 3,000 gallons of diesel fuel oil in FO-10, which is not dedicated to the EDG. The staff asked why this consumption is not accounted for, and in its RAI response dated April 8, 2016, the licensee stated that the diesel-driven auxiliary feedwater pump FW-54 operates for the purpose of supplying power to transfer pump FO-37 during the transfer of diesel fuel oil from tank FO-10 to tank FO-1. The licensee's engineering calculation FC06871, which determines required diesel fuel oil quantity, assumes that FW-54 operates the entire time that pump FO-37 is operating for diesel fuel oil transfer. This assumption results in the determination that 568 gallons of diesel fuel oil is used from tank FO-10 for pump FW-54 operation. This 568 gallons of diverted diesel fuel oil is accounted for in the overall available quantity of diesel fuel oil for EDG operation.

The NRC staff concludes that the licensee's response is acceptable, because the diesel fuel oil used from tank FO-10 for pump FW-54 is accounted for in the licensee's calculation for the overall available quantity of diesel fuel for EDG operation.

3.4.4 Diesel Fuel Oil for Auxiliary Boiler

In RAI EPNB-6 dated February 23, 2016, the NRC staff inquired why diesel fuel oil in tank FO-10 is reserved for the auxiliary boiler if the auxiliary boiler is not specifically credited for mitigating design-basis events. In its RAI response dated April 8, 2016, the licensee stated that that the auxiliary boiler is likely to be operated soon after the start of a design-basis event if the outside air temperature is in a range expected in the winter season. This is because most areas in the plant are heated solely by the auxiliary steam system, which is supplied from the auxiliary boiler when the main turbine is not operating. The licensee also stated that the 3,000 gallons of diesel fuel oil allocated to the auxiliary boiler is considered acceptable with the understanding that during an extended loss of offsite power, diesel fuel oil conservation would be considered a high priority for the emergency response organization, which would focus on ways to reduce diesel fuel oil consumption by the auxiliary boiler.

Although the auxiliary boiler is not credited to mitigate design-basis events, it is used to provide heat to areas in the plant in a normal winter season. During an extended loss of offsite power, the licensee will focus on ways to conserve the diesel fuel oil allocated for the auxiliary boiler. Based on this response, and the fact that the licensee can obtain replacement diesel fuel oil within 7 days, the NRC staff concludes that reserving 3,000 gallons of diesel fuel oil in tank FO-10 for the auxiliary boiler is acceptable.

3.4.5 Biodiesel in Diesel Fuel Oil

In RAI EPNB-4 dated February 23, 2016, the NRC staff observed that in Section 3.0 of the LAR, the licensee stated that the use of Ultra Low Sulfur Diesel fuel is addressed. The NRC staff noted that American Society for Testing and Materials (ASTM) D-975, "Standard Specification for Diesel Fuel Oils," allows up to 5 percent biodiesel in normal diesel fuel oil without labeling requirements. The NRC staff then inquired if the licensee accounted for 5 percent biodiesel in the diesel fuel oil, which could cause an increase in fuel consumption. In its RAI response dated April 8, 2016, the licensee stated that 5 percent biodiesel in the diesel fuel oil has not been accounted for, because the purchase requirements for diesel fuel oil for the EDGs requires the diesel fuel oil supplier to meet a maximum specification for biodiesel content of less than or equal to 0.2 percent. The licensee tests delivered diesel fuel oil for biodiesel content and other quality specifications prior to offloading the diesel fuel oil from the delivery truck into the storage tank. If all of the diesel fuel oil specifications are not met, the diesel fuel oil delivery is either rejected or used in other applications. If the biodiesel content in the diesel fuel oil is less than or equal to 0.2 percent, the impact on overall fuel energy content is considered negligible.

The licensee stated that the contract with its diesel fuel oil supplier requires that the biodiesel content in the diesel fuel oil must be less than or equal to 0.2 percent, and the diesel fuel oil is tested for biodiesel content prior to offloading the diesel fuel oil into the storage tank. With these conditions in place, the NRC staff concludes that the small percentage of biodiesel in the diesel fuel oil is not enough to lower the energy content in the diesel fuel oil.

3.4.6 Use of Three Percent Margin in Diesel Fuel Oil Calculation

The methodology for determining these minimum inventories is based on a time-dependent worst-case accident load, which generally coincides with ANSI N195-1976, "Fuel Oil Systems for Standby Diesel Generators." The calculation considers the diesel fuel oil required for operation of engineered safety features. This diesel fuel oil calculation methodology in ANSI N195-1976 is endorsed in RG 1.137.

ANSI N195-1976 discusses how the stored diesel fuel oil requirement shall be calculated based upon the diesel generators operating at the minimum required capacity for the plant condition which is most limiting for the calculation of such capacity. One method for calculating the stored diesel fuel oil supply takes into account the time dependence of EDG loads. That is, if EDG loads increase or decrease during the event, the load changes shall be included in the required diesel fuel oil storage calculation. If the design includes provisions for an operator to supply power to equipment other than the minimum required for the plant condition, such additional loads shall be included in the calculation of required diesel fuel oil storage capacity. It is stated in ANSI N195-1976 that a 10 percent margin shall be added to the calculated storage requirement if the time-dependent calculation methodology is used. RG 1.137, Revision 1, supplements the above by stating that for the time-dependent load method, the minimum required capacity should include the capacity to power the engineered safety features.

Although the licensee is not committed to ANSI N195-1976, the licensee's methodology for determining the minimum required diesel fuel oil is generally consistent with ANSI's time-dependent load calculation methodology. This ANSI method recommends that the minimum calculated diesel fuel oil inventory contain a 10 percent margin if a time-dependent load is used to determine diesel fuel oil consumption. However, the licensee's proposed amendment contains a margin of 3 percent due to an allocation of some of the diesel fuel oil in tank FO-10 to the operation of the auxiliary boiler. The licensee stated that tank FO-10 provides diesel fuel oil to both the EDGs and to the auxiliary boiler, and that some credit must be given for the possibility that the auxiliary boiler may operate at some point during the 7-day period of EDG operation.

The licensee proposes to increase the amount of diesel fuel oil in tank FO-10 allocated for EDG operation from 10,000 gallons to 13,000 gallons. Thus, an overall increase of 3,000 gallons of diesel fuel oil is proposed for the minimum required inventory for EDG operation. With this modification, and with the correction of the non-conservative assumptions listed previously, this volume requirement provides a margin of approximately 3 percent over the calculated diesel fuel oil usage for an EDG operating for 7 days under worst-case accident conditions. The licensee does not propose a change in the physical configuration of the EDG systems or the current licensing basis. However, the licensee proposes to increase the total amount of diesel fuel oil in tank FO-10 that is allocated to EDG operation to correct the non-conservatisms in the TSs.

In its RAI dated February 23, 2016, the NRC staff requested that the licensee justify using a 3 percent margin instead of a 10 percent margin. In its RAI response dated April 8, 2016, the licensee stated that the 3 percent margin is calculated by comparing the amount of diesel fuel oil available on site in tanks FO-1, FO-10, and tanks local to the EDGs (27,592 gallons per engineering calculation FC06871) to the most conservative value of diesel fuel oil calculated to

be necessary for 7 days of EDG operation (26,739 gallons per Engineering Analysis EA92-072). The licensee also stated that the fuel consumption calculation uses EDG fuel consumption rates that are based on testing performed to verify data from the EDG vendor.

The required minimum amount of diesel fuel oil for 7 days of EDG operation (26,739 gallons) does not include an allowance for periodic EDG testing. Diesel fuel oil inventory in excess of the required minimum amount for 7 days of EDG operation is administratively controlled to ensure that monthly EDG testing can be performed without diesel fuel oil inventory reaching or exceeding the minimum amount required to ensure 7 days of EDG operation. Therefore, the calculated 3 percent margin does not need to ensure available inventory for testing since separate testing margin is made available. The minimum inventory in tank FO-1 for 7 days of EDG operation is 16,000 gallons, and the administrative limit for ordering additional fuel for tank FO-1 is 16,500 gallons.

The volume of diesel fuel oil used for periodic testing is separate from the amount of fuel oil required to ensure 7 days of EDG operation, and it is separate from the 3 percent margin of fuel oil required for 7 days of operation. This volume used for periodic testing is administratively controlled and does not affect the fuel oil reserved for 7 days of EDG operation or the 3 percent margin. Also, the fuel oil consumption rates used in the licensee's fuel oil consumption calculation are based on testing that was performed to verify data from the EDG vendor. These consumption rates are more exact than consumption rates envisioned to be used by ANSI N195-1976. Based on this information, the NRC concludes that the 3 percent margin remains sufficient to account for small errors, or slightly larger draws from the fuel oil storage. In addition, the licensee is not committed to ANSI N195-1976. Because (1) the licensee is not committed to ANSI N195-1976, (2) the licensee has used EDG fuel oil consumption rates in its fuel oil consumption calculation that are based on testing performed to verify data from the EDG vendor, and (3) fuel oil reserved for periodic testing is separate from the required inventory for 7 days of EDG operation and the 3 percent margin, the NRC staff concludes that the 3 percent margin is acceptable.

3.5 TS Bases

The regulation under 10 CFR 50.36(a)(1) states, in part, that, "A summary statement of the bases or reasons for such specifications ... shall also be included in the application, but shall not become part of the technical specifications." The licensee may make changes to the TS Bases without prior NRC staff review and approval in accordance with TS 5.20, "Technical Specification (TS) Bases Control Program." Accordingly, along with the proposed TS changes, the licensee also submitted TS Bases changes corresponding to the proposed TS changes. The NRC staff determined that TS Bases changes are consistent with the proposed TS changes and provide the purpose for each requirement in the specification consistent with the Commission's Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors, dated July 2, 1993 (58 FR 39132). Therefore, the NRC staff has no objections to the proposed changes to the TS Bases.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Nebraska State official, Ms. J. Schmitt, was notified on July 5, 2016, of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration and there has been no public comment on such finding published in the *Federal Register* on November 24, 2015 (80 FR 73239). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: N. Hobbs, NRR/DSS/SBPB
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Date: August 19, 2016

August 19, 2016

Mr. Shane M. Marik
Site Vice President and Chief Nuclear Officer
Omaha Public Power District
Fort Calhoun Station
9610 Power Lane, Mail Stop FC-2-4
Blair, NE 68008

SUBJECT: FORT CALHOUN STATION, UNIT NO. 1 - ISSUANCE OF AMENDMENT RE: ADOPTION OF TSTF-501, REVISION 1, "RELOCATE STORED FUEL OIL AND LUBE OIL VOLUME VALUES TO LICENSEE CONTROL" (CAC NO. MF6722)

Dear Mr. Marik:

The U.S. Nuclear Regulatory Commission (NRC) has issued the enclosed Amendment No. 289 to Renewed Facility Operating License No. DPR-40 for the Fort Calhoun Station, Unit No. 1. The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated September 11, 2015, as supplemented by letter dated April 8, 2016.

The amendment revised the TSs by removing the current stored diesel fuel oil and lube oil numerical volume requirements from the TSs and replacing them with emergency diesel generator operating time requirements consistent with NRC-approved Technical Specifications Task Force (TSTF) Traveler TSTF-501, Revision 1, "Relocate Stored Fuel Oil and Lube Oil Volume Values to Licensee Control," including plant-specific variances.

A copy of the related Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,
/RA/
Carl F. Lyon, Project Manager
Plant Licensing Branch IV-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-285
Enclosures:
1. Amendment No. 289 to DPR-40
2. Safety Evaluation
cc w/encls: Distribution via Listserv

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ADAMS Accession No. ML16182A363 *memo dated **previously concurred

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NAME	FLyon	JBurkhardt	AKlein	DAlley**	RDennig*
DATE	7/27/16	7/5/16	8/1/16	7/26/16	6/22/16
OFFICE	NRR/DE/EEEB/BC	OGC	NRR/DORL/LPL4-1/BC	NRR/DORL/LPL4-1/PM	
NAME	JZimmerman**	VHoang	RPascarelli	FLyon	
DATE	7/26/16	8/16/16	8/19/16	8/19/16	

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