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

February 21, 2019

Mr. John Dent, Jr.
Vice President-Nuclear and CNO
Nebraska Public Power District
72676 648A Avenue
Brownville, NE 68321

SUBJECT: COOPER NUCLEAR STATION - ISSUANCE OF AMENDMENT RE: ADOPTION OF TECHNICAL SPECIFICATIONS TASK FORCE (TSTF) TRAVELER TSTF-501, REVISION 1, "RELOCATE STORED FUEL OIL AND LUBE OIL VOLUME VALUES TO LICENSEE CONTROL" (EPID L-2018-LLA-0177)

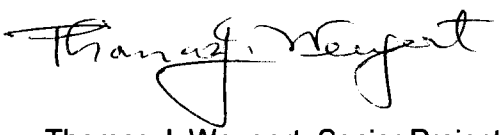
Dear Mr. Dent:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 262 to Renewed Facility Operating License No. DPR-46 for the Cooper Nuclear Station. The amendment changes the Technical Specifications (TSs) in response to your application dated June 11, 2018.

The amendment revises TS 3.8.3, "Diesel Fuel Oil, Lube Oil, and Starting Air," by relocating the current stored diesel fuel oil and lube oil numerical volume specifications from the TSs to the TS Bases and replacing them with durational requirements. The proposed changes are consistent with Technical Specifications Task Force (TSTF) Traveler TSTF-501, Revision 1, "Relocate Stored Fuel Oil and Lube Oil Volume Values to Licensee Control." Additionally, the amendment revises a surveillance requirement associated with TS 3.8.1, "AC [Alternating Current] Sources – Operating," by replacing the day tank numerical volume requirement with a durational requirement.

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

Sincerely,



Thomas J. Wengert, Senior Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-298

Enclosures:
1. Amendment No. 262 to DPR-46
2. Safety Evaluation

cc: Listserv

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

NEBRASKA PUBLIC POWER DISTRICT

DOCKET NO. 50-298

COOPER NUCLEAR STATION

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 262
Renewed License No. DPR-46

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

   A. The application for amendment by Nebraska Public Power District (the licensee), dated June 11, 2018, 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, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Renewed Facility Operating License No. DPR-46 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A as revised through Amendment No. 262, are hereby incorporated in the license. The licensee 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
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Renewed Facility
Operating License No. DPR-46
and Technical Specifications

Date of Issuance: February 21, 2019

ATTACHMENT TO LICENSE AMENDMENT NO. 262

RENEWED FACILITY OPERATING LICENSE NO. DPR-46

COOPER NUCLEAR STATION

DOCKET NO. 50-298

Replace the following pages of the Renewed Facility Operating License No. DPR-46 and Appendix A Technical Specifications with the enclosed revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Renewed Facility Operating License

REMOVE	INSERT
-3-	-3-

Technical Specifications

REMOVE	INSERT
3.8-6	3.8-6
3.8-13	3.8-13
3.8-15	3.8-15

(5) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by operation of the facility.

C. This 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, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; 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:

(1) Maximum Power Level

The licensee is authorized to operate the facility at steady state reactor core power levels not in excess of 2419 megawatts (thermal).

(2) Technical Specifications

The Technical Specifications contained in Appendix A as revised through Amendment No. 262, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

(3) Physical Protection

The licensee 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 combined set of plans, which contain Safeguards Information protected under 10 CFR 73.21, are entitled: "Cooper Nuclear Station Safeguards Plan," submitted by letter dated May 17, 2006.

NPPD 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 NPPD CSP was approved by License Amendment No. 238 as supplemented by changes approved by License Amendments 244 and 249.

(4) Fire Protection

NPPD shall implement and maintain in effect all provisions of the approved fire protection program that comply with 10 CFR 50.48(a) and 10 CFR 50.48(c), as specified in the license amendment request dated April 24, 2012 (and supplements dated July 12, 2012, January 14, 2013, February 12, 2013, March 13, 2013, June 13, 2013, December 12, 2013, January 17, 2014, February 18, 2014, and April 11, 2014), and as approved in the safety evaluation dated April 29, 2014. Except where NRC approval for changes or deviations is required by 10 CFR 50.48(c), and provided no other regulation, technical specification, license condition or requirement would require prior NRC approval, the licensee may make changes to the fire protection program without prior approval of the Commission if

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.8.1.3	----------NOTES---------- 1. DG loadings may include gradual loading as recommended by the manufacturer. 2. Momentary transients outside the load range do not invalidate this test. 3. This Surveillance shall be conducted on only one DG at a time. 4. This SR shall be preceded by and immediately follow, without shutdown, a successful performance of SR 3.8.1.2 or SR 3.8.1.7. ---------- Verify each DG is synchronized and loaded and operates for ≥ 2 hours at a load ≥ 3600 kW and ≤ 4000 kW.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.4	Verify each day tank contains ≥ 3.9 hour supply of fuel oil.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.5	Check for and remove accumulated water from each day tank.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.6	Verify the fuel oil transfer system operates to automatically transfer fuel oil from storage tanks to the day tanks.	In accordance with the Surveillance Frequency Control Program

(continued)

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, except for Conditions A, C, and D.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Fuel oil level less than a 7 day supply and greater than a 6 day supply in storage tanks.	A.1	Restore fuel oil level to within limits.	48 hours
B. One or more DGs with lube oil inventory less than a 7 day supply and greater than a 6 day supply.	B.1	Restore lube oil inventory to within limits.	48 hours
C. Stored fuel oil total particulates not within limit.	C.1	Restore stored fuel oil total particulates to within limit.	7 days

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.3.1	Verify the fuel oil storage tanks contain a combined volume of ≥ a 7 day supply of fuel.	In accordance with the Surveillance Frequency Control Program
SR 3.8.3.2	Verify lube oil inventory is ≥ a 7 day supply.	In accordance with the Surveillance Frequency Control Program
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 has a minimum of one air start receiver with a pressure ≥ 200 psig.	In accordance with the Surveillance Frequency Control Program
SR 3.8.3.5	Check for and remove accumulated water from each fuel oil storage tank.	In accordance with the Surveillance Frequency Control Program

UNITED STATES
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 262 TO

RENEWED FACILITY OPERATING LICENSE NO. DPR-46

NEBRASKA PUBLIC POWER DISTRICT

COOPER NUCLEAR STATION

DOCKET NO. 50-298

1.0 INTRODUCTION

By application dated June 11, 2018 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18169A147), Nebraska Public Power District (NPPD, the licensee), submitted a license amendment request (LAR) to modify the technical specifications (TSs) for Cooper Nuclear Station (CNS). The proposed changes would revise TS 3.8.3, "Diesel Fuel Oil, Lube Oil, and Starting Air," Surveillance Requirement (SR) 3.8.3.1 (verification of fuel oil storage tank volume), and SR 3.8.3.2 (verification of lube oil inventory volume), by removing the current stored diesel fuel oil and lube oil numerical volume requirements and replacing them with duration-based diesel operating time requirements, consistent with Technical Specifications Task Force (TSTF) Standard Technical Specifications Traveler TSTF-501, Revision 1, "Relocate Stored Fuel Oil and Lube Oil Volume Values to Licensee Control" (ADAMS Accession No. ML090510686). The availability of this TS improvement was published in the *Federal Register* on May 26, 2010 (75 FR 29588), as part of the consolidated line item improvement process (CLIIP). In addition, the licensee proposed changes that would revise SR 3.8.1.4 (verification of diesel generator (DG) day tank fuel volume) to replace the specific day tank numerical volume requirement with a duration-based diesel operating time requirement. The licensee also proposed associated changes to the TS Bases.

Any change to the numerical volume requirements in the TSs requires prior approval by the U.S. Nuclear Regulatory Commission (NRC or the Commission). Licensees may need to modify diesel fuel oil numerical volumes to account for changes to the energy content (British Thermal Units (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. The proposed changes would remove the numerical volume requirements for stored diesel fuel oil and lube oil from the TSs and would replace them with duration-based diesel operating time requirements. If approved, this amendment would permit the numerical volume requirements for stored diesel fuel oil and lube oil to be modified under licensee control pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.59, "Changes, tests, and experiments," and, therefore, would not require prior NRC approval.

2.0 REGULATORY EVALUATION

2.1 System Description

The standby alternating current (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 requirements are retained in the TSs as a limiting condition for operation (LCO) under 10 CFR 50.36(c)(2)(i) because they support the operation of the standby AC power sources.

CNS's standby AC power system is powered by two independent DGs capable of an automatic start at any time and capable of continued operation at rated load, voltage, and frequency until manually stopped. The DG auxiliary and support subsystems, such as fuel oil and fuel oil transfer, lubricating oil, jacket water, service water, and starting air are required for operation of each DG. Each DG unit has a fuel (day) tank.

Each unit fuel oil day tank is supplied from two main fuel storage tanks. Together, the main fuel storage tanks are capable of providing sufficient fuel for 7 days of operation of one DG unit under postulated accident conditions. Fuel is transferred from the main storage tanks to the day tanks by either of two transfer pumps associated with each storage tank. A cross-tie is provided such that each DG can be supplied from either main fuel oil storage tank. Each unit fuel oil day tank provides enough fuel to allow a minimum of 3.9 hours of full load (4 megawatt) operation of the DG unit.

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. A DG unit 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.

2.2 Description of the Proposed Changes

The proposed changes would revise TS 3.8.3, "Diesel Fuel Oil, Lube Oil, and Starting Air" and SRs 3.8.3.1, 3.8.3.2, and 3.8.1.4, by removing the current stored diesel fuel oil volume and lube oil inventory numerical requirements and replacing them with duration-based diesel operating time requirements. The proposed changes would mean that the volume necessary to meet the TS duration requirements may be modified under licensee control. The specific TS changes are described in the following sections.

2.2.1 Proposed Changes to TS 3.8.3 ACTIONS Table Conditions A and B

Conditions A and B of TS LCO 3.8.3, "Diesel Fuel Oil, Lube Oil, and Starting Air," would be revised in the ACTIONS Table. Currently, Conditions A and B apply when the stored diesel fuel oil and lube oil numerical volume requirements are not met. As discussed in the TS Bases, the numerical diesel fuel oil volume requirement in Condition A is based on a combined volume of less than a 7-day supply, but at least a 6-day supply. The numerical DG lube oil inventory requirement in Condition B is a volume of less than a 7-day supply, but greater than a 6-day supply. The proposed amendment would remove the numerical volumetric requirements from the TSs and replace them with duration-based requirements. Specifically, the TSs would be modified so that Condition A is entered when the stored diesel fuel oil is less than a 7-day

supply, but greater than a 6-day supply for one or more DG units. Condition B would be entered when the stored DG lube oil contains less than a 7-day supply, but greater than a 6-day lube oil supply for one or more DG units.

2.2.2 Proposed Changes to SR 3.8.3.1, SR 3.8.3.2, and SR 3.8.1.4

Currently, SR 3.8.3.1 requires the licensee to verify that the fuel oil storage tanks contain a combined volume greater than or equal to 49,500 gallons of fuel, SR 3.8.3.2 requires the licensee to verify that the lube oil inventory volume is greater than or equal to 504 gallons, and SR 3.8.1.4 requires the licensee to verify that each DG day tank contains a volume greater than or equal to 1500 gallons of fuel oil. As described in the current TS Bases, the numerical requirements in SRs 3.8.3.1 and 3.8.3.2 are based on maintaining at least a 7-day supply, while the numerical requirement in SR 3.8.1.4 is based on a 3.9-hour supply at full load. The proposed amendment would remove the numerical volume requirements from these SRs. SRs 3.8.3.1 and 3.8.3.2 would be revised to require the licensee to verify that the stored diesel fuel oil volume and lube oil inventory are greater than or equal to a 7-day supply for each DG unit. SR 3.8.1.4 would be revised to require the licensee to maintain a minimum 3.9-hour supply of fuel oil.

2.3 Licensee-Identified Differences with TSTF-501, Revision 1

In the LAR, the licensee proposed two variations from TSTF-501, Revision 1, as described below:

- Variation 1: CNS SR 3.8.1.4, concerning fuel oil day tank inventory, currently specifies verification of greater than or equal to a minimum volume of fuel oil. The licensee proposed a revision to SR 3.8.1.4 to remove the day tank volume requirement and replace it with a durational requirement.

- Variation 2: The CNS calculations that determine fuel oil volumes do not include the fuel oil volume required to support periodic testing. Instead, NPPD administratively controls fuel oil in support of periodic testing.

2.4 Regulatory Requirements and Guidance Used in the Evaluation of the Changes

2.4.1 Regulatory Requirements

The regulation in 10 CFR 50.36, "Technical specifications," provides the regulatory requirements for the content of the TSs and requires, in part, that a summary statement of the bases for such specifications shall be included by applicants for a license authorizing operation of a production or utilization facility. Specifically, 10 CFR 50.36(c) requires that TSs include items in five specific categories related to station operation. These categories are (1) safety limits, limiting safety system settings, and limiting control settings, (2) LCOs, (3) SRs, (4) design features, and (5) administrative controls.

The regulation in 10 CFR 50.36(c)(2), "Limiting conditions for operation," states, in part, that TSs will include LCOs, which are "the lowest functional capability or performance levels of equipment required for safe operation of the facility." Section 50.36(c)(2)(i) further states that "[w]hen 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 regulation in 10 CFR 50.36(c)(3), "Surveillance requirements," states that "[s]urveillance requirements are requirements related 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."

2.4.2 Guidance

Regulatory Guide (RG) 1.137, Revision 1, "Fuel-Oil Systems for Standby Diesel Generators" (ADAMS Accession No. ML003740180), provides guidance that describes a method acceptable to the NRC staff for complying with the Commission's regulations regarding fuel oil systems for standby DGs and endorses American National Standards Institute (ANSI) standard ANSI N195-1976, with certain limitations. RG 1.137, Section C.1.c sets forth two methods for the calculation of fuel oil storage requirements as described in ANSI N195-1976, Section 5.4 "Calculation of Fuel Oil Storage Requirements." These methods are: (1) calculations based on the assumption that the DG operates continuously for 7 days at its rated capacity, and (2) calculations based on the time-dependent loads of the diesel generator. If the time-dependent load method is used, the minimum required capacity should include the capacity to power engineered safety features.

NUREG-1433, Revision 4, "Standard Technical Specifications for General Electric BWR [Boiling-Water Reactor]/4 Plants" (ADAMS Accession No. ML12104A192), provides example TS LCOs and acceptable remedial actions that meet the requirements in 10 CFR 50.36(c)(2)(i) for a standard plant design.

The NRC-Approved TSTF Traveler TSTF-501, Revision 1, "Relocate Stored Fuel Oil and Lube Oil Volume Values to Licensee Control" (ADAMS Accession No. ML090510686), provides an acceptable method of modifying the stored fuel oil and lube oil requirements contained in the Standard Technical Specifications.

3.0 TECHNICAL EVALUATION

The licensee reviewed the model safety evaluation (SE), which was published in the *Federal Register* on May 26, 2010 (75 FR 29588), as part of the CLIIP notice of availability. The licensee concluded, as stated on page 4 of Attachment 1 of the LAR that the justifications presented in the model SE are applicable to CNS, and therefore justify this amendment.

A DG is provided with a fuel oil capacity sufficient to operate that DG for a period of 7 days. This onsite fuel oil capacity is sufficient to operate the DG long enough to place CNS in a shutdown condition and to bring in replenishment fuel from offsite sources.

The standby AC power sources (i.e., the DGs), 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. Requirements for diesel fuel oil and lube oil supplies are retained in the TSs under 10 CFR 50.36(c)(2)(i) because they support the operation of the standby AC power sources.

The proposed changes would revise TS 3.8.3 and SRs 3.8.3.1, 3.8.3.2, and 3.8.1.4 by removing the current stored diesel fuel oil and lube oil numerical volume requirements from the TSs and replacing them with the associated duration-based diesel operating times. If approved, these changes would permit the fuel oil and lube oil volumes necessary to support a duration-based

diesel operating time to be modified under licensee control pursuant to 10 CFR 50.59. The NRC staff's evaluation of the proposed TS changes is provided in the following sections.

3.1 NRC Staff Evaluation of Proposed Changes to TS 3.8.3 ACTIONS Table Conditions A and B

Currently, Condition A of TS 3.8.3 is entered when the fuel oil volume requirement is not met and Condition B is entered when the lube oil inventory requirement is not met. The current TS Bases state that the numerical volume requirements in Conditions A and B are based on volumes less than a 7-day supply, but at least a 6-day supply. The proposed changes would remove the numerical volumetric requirements from the TSs and would modify Conditions A and B to replace them with duration-based diesel operating time requirements, such that Condition A is entered when the stored fuel oil inventory is less than a 7-day supply, but greater than a 6-day supply and Condition B is entered when the lube oil inventory is less than a 7-day supply, but greater than a 6-day supply for one or more DGs. No other parts of Condition A or B are proposed to be modified.

As described in Section 3.2 below, the licensee stated that the stored diesel fuel oil and lube oil numerical volumes sufficient to meet the duration-based operating time requirements will be calculated using Section 5.4 of ANSI N195-1976, "Fuel Oil Systems for Standby Diesel Generators," and the volumes are based on applying the conservative assumption that the DG is operated continuously for 7 days at its rated capacity. The use of this methodology will ensure that the supplies of stored diesel fuel oil and lube oil for each DG that dictate Condition entry will continue to be calculated in accordance with NRC-approved methods.

Based on the above evaluation, the NRC staff concludes that the changes to the TS 3.8.3 ACTIONS Table are acceptable.

3.2 NRC Staff Evaluation of Proposed Changes to SRs 3.8.3.1, 3.8.3.2, and 3.8.1.4

Currently, SR 3.8.3.1 and SR 3.8.3.2 require the licensee to verify that the stored diesel fuel oil and lube oil numerical volume requirements are met. SR 3.8.1.4 requires the licensee to verify that each day tank contains the required volume of diesel fuel oil.

The licensee proposes to revise SR 3.8.3.1 and SR 3.8.3.2 to reflect the change from numerical volume requirements to durational requirements made in TS 3.8.3 ACTIONS Table. Specifically, SRs 3.8.3.1 and 3.8.3.2 would be revised to require availability of a 7-day supply of fuel oil and lube oil for each DG, rather than a specified numerical volume. As a result, SR 3.8.3.1 and SR 3.8.3.2 would require the licensee to verify that the combined volume of the fuel oil storage tanks and the lube oil inventory are each greater than or equal to a 7-day supply for a DG.

The licensee also proposes to revise SR 3.8.1.4, which contains the DG day tank volumetric requirement. The proposed change to SR 3.8.1.4 is similar to the proposed change for SR 3.8.3.1 in that the numerical volume requirements would be replaced with durational requirements. The revised SR 3.8.1.4 would require the licensee to verify that the stored diesel fuel oil volume in each day tank is greater than or equal to a 3.9-hour supply of fuel oil. The licensee's proposed inclusion of changes to the day tank storage requirements in the LAR is identified as Variation 1 in Section 2.3 of this SE.

The licensee notes that the NRC staff previously determined that the licensee must identify the NRC-approved fuel oil calculation methodology in the Final Safety Analysis Report. The licensee also notes that CNS's Updated Safety Analysis Report (USAR) currently contains that information. In the LAR, the licensee describes the methodology contained in the USAR for determining the supply of stored diesel fuel oil and lube oil for each diesel generator on pages 3 and 4 of Attachment 1 as follows:

> The specific Emergency Diesel Generator (EDG) fuel oil volumes contained in the fuel oil storage tanks, necessary to ensure that EDG run-duration requirements are met, are calculated using Section 5.4 of American National Standards Institute (ANSI) N195-1976, "Fuel Oil Systems for Standby Diesel Generators," and are based on applying the conservative assumption that the EDG is operated continuously for 7 days at its rated capacity. This fuel oil calculation methodology is one of two approved methods specified in Regulatory Guide (RG) 1.137, Revision 1, "Fuel Oil Systems for Standby Diesel Generators," Regulatory Position C.1.c.

Additionally, on page 3 of Attachment 1 of the LAR, the licensee describes how the volume of fuel necessary to support operation of the standby DGs is managed at the site, as follows:

> The Cooper Nuclear Station (CNS) calculations that determine fuel oil volumes required to support operation of the diesel generators for the 7-day TS requirement do not include an explicit allowance for fuel oil consumption due to periodic testing. Instead, NPPD administratively controls fuel oil in support of required periodic testing, such that the TS required volumes for the fuel oil tanks are maintained.

This is identified as Variation 2 in Section 2.3 of this SE.

The methodology in ANSI N195-1976 discusses how the stored diesel fuel oil requirement should be calculated based upon the DGs operating at the minimum required capacity for the plant condition that is most limiting for the calculation of such capacity. One method for calculating the stored diesel fuel oil supply in ANSI N195-1976 takes into account the time dependence of DG loads. That is, if DG loads increase or decrease during the event, the load changes should be included in the required fuel 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 should be included in the calculation of required fuel storage capacity. Revision 1 of RG 1.137 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. A minimum margin of 10 percent shall be added to the calculated storage requirement if the alternate conservative calculation discussed next is not used. Another method for calculating the stored diesel fuel oil supply, which is more conservative than the time-dependent load method, is to calculate the storage capacity by assuming that the diesel engine operates continuously for 7 days at its rated capacity.

Since both methods described in ANSI N195-1976 are approved for use by the NRC staff in RG 1.137, Revision 1, and the licensee calculates the volume of fuel oil in accordance with RG 1.137, Revision 1, the staff has reasonable assurance that the volume of fuel oil calculated by the licensee will meet the new duration-based limits specified in SR 3.8.3.1 and SR 3.8.1.4. Additionally, the licensee will administratively control the amount of fuel oil required to support

periodic testing, such that the volume of fuel required for testing will exist in addition to the 7-day supply requirement.

One variable used in both stored diesel fuel oil calculation methods is the fuel consumption rate. The property of diesel fuel oil having the most significant effect on the fuel consumption rate is the energy content (heating value) of the fuel. Standards exist that correlate the energy content to the fuel's American Petroleum Institute (API) gravity or absolute specific gravity. At a minimum, licensees calculate the required fuel storage values for their plants assuming the most limiting API gravity or absolute specific gravity, and therefore, the most limiting fuel energy content. As long as the fuel oil placed in the storage tank is within the API gravity range or absolute specific gravity range specified by the licensee, the calculations of fuel consumption and required stored volume remain valid. Current SR 3.8.3.3 requires new fuel to be tested in accordance with, and maintained within the limits of current TS 5.5.9, "Diesel Fuel Oil Testing Program" to verify that the fuel's API gravity or absolute specific gravity is within the range assumed in the diesel fuel oil consumption calculations.

The lube oil inventory equivalent to a 7-day supply and 6-day supply associated with TS 3.8.3 Condition B is based on the DG manufacturer consumption values for the run time of the DG.

The above methods still provide assurance that the necessary quantity and quality of diesel fuel oil and lube oil will continue to be maintained and calculated in accordance with NRC-approved methods. Variation 1 is acceptable because revising the day tank supply to a duration-based amount continues to provide assurance that the necessary quality of systems and components is maintained, and that facility operation will be within safety limits, and that the LCOs will be met. The method used to calculate the day tank oil volumes is one of the acceptable methods provided in RG 1.137. Variation 2 is acceptable because the calculation method used to determine the volume of oil required to be controlled is one of the acceptable methods provided in RG 1.137 and continues to provide assurance that the necessary quality of systems and components is maintained, that facility operation will be within the safety limits, and that the LCOs will be met because only the calculated volume of oil, less testing volume, is necessary if the DG was used in an accident.

Therefore, the NRC staff considers the duration-based changes to SRs 3.8.3.1, 3.8.3.2, and 3.8.1.4 to be acceptable.

3.3 TS Bases Changes

The regulation at 10 CFR 50.36(a)(1) states that a summary statement of the bases or reasons for such specifications, other than those covering administrative controls, shall also be included in the application, but shall not become part of the TSs. Consistent with 10 CFR 50.36(a)(1), the licensee submitted corresponding TS Bases changes that provide the reasons for the proposed TSs changes. The NRC staff concludes that the proposed TS Bases changes describe the bases for the affected TSs and follow the "Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors" (58 FR 39132).

3.4 Technical Conclusion

The proposed changes will continue to require that the appropriate volumes of stored diesel fuel oil and lube oil are maintained. The proposed changes to TS 3.8.3 ACTIONS Table continue to provide assurance that the lowest functional capability or performance levels of equipment required for safe operation of the facility will continue to be met. Conditions A and B of TS 3.8.3

ACTIONS Table continue to provide acceptable remedial actions to follow until LCO 3.8.3 can be met. The NRC staff concludes that replacement of the TS numerical value volume requirements with durational requirements does not change the current plant configuration, the current volume requirements, or the current basis for fuel oil and lube oil volume requirements. Therefore, the changes to TS 3.8.3 ACTIONS Table will continue to meet 10 CFR 50.36(c)(2) and are acceptable.

In addition, the proposed changes to SRs 3.8.3.1, 3.8.3.2, and 3.8.1.4 continue to provide assurance that the necessary quality of systems and components is maintained, the facility will be within safety limits, and that the LCO will be met. The revised SRs will continue to meet 10 CFR 50.36(c)(3), and are therefore acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Nebraska State official was notified of the proposed issuance of the amendment on December 20, 2018. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. 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, published in the *Federal Register* on August 28, 2018 (83 FR 43905), and there has been no public comment on such finding. 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 Contributor: P. Snyder

Date: February 21, 2019

SUBJECT: COOPER NUCLEAR STATION - ISSUANCE OF AMENDMENT RE: ADOPTION OF TECHNICAL SPECIFICATIONS TASK FORCE (TSTF) TRAVELER TSTF-501, REVISION 1, "RELOCATE STORED FUEL OIL AND LUBE OIL VOLUME VALUES TO LICENSEE CONTROL" (EPID L-2018-LLA-0177) DATED FEBRUARY 21, 2019

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