



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

February 6, 2009

Mr. David A. Christian  
President and Chief Nuclear Officer  
Dominion Energy  
5000 Dominion Boulevard  
Glen Allen, VA 23060-6711

SUBJECT: KEWAUNEE POWER STATION - ISSUANCE OF AMENDMENT RE: DIESEL  
GENERATOR FUEL STORAGE TANK CAPACITY REQUIREMENT  
(TAC NO. ME0436)

Dear Mr. Christian:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 203 to Facility Operating License No. DPR-43 for the Kewaunee Power Station in response to your application dated January 23, 2009, as supplemented by letters dated January 26, January 30, and February 5, 2009. This amendment is issued under exigent circumstances and is related to the Notice of Enforcement Discretion issued on January 29, 2009.

The amendment revises the Technical Specifications in Section 3.7.a.7 from "The two underground storage tanks combine to supply at least 35,000 gallons of fuel oil for either diesel generator and the day tanks for each diesel generator contain at least 1,000 gallons of fuel oil." to require each diesel generator's underground storage tank and corresponding day tanks to contain a minimum useable volume of 32,888 gallons.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Peter S. Tam".

Peter S. Tam, Senior Project Manager  
Plant Licensing Branch III-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-305

Enclosures:

1. Amendment No. 203 to  
License No. DPR-43
2. Safety Evaluation

cc w/encls: Distribution via ListServ



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

DOMINION ENERGY KEWAUNEE, INC.

DOCKET NO. 50-305

KEWAUNEE POWER STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 203  
License No. DPR-43

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Dominion Energy Kewaunee, Inc. dated January 23, 2009, as supplemented on January 26, January 30, and February 5, 2009, 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 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 Facility Operating License No. DPR-43 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 203, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 30 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Lois M. James, Chief  
Plant Licensing Branch III-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment: Changes to the Facility Operating License  
and Technical Specifications

Date of Issuance: February 6, 2009

ATTACHMENT TO LICENSE AMENDMENT NO. 203

FACILITY OPERATING LICENSE NO. DPR-43

DOCKET NO. 50-305

Replace the following page of the Facility Operating License No. DPR-43 with the attached revised page. The changed area is identified by a marginal line.

REMOVE

INSERT

Page 3

Page 3

Replace the following page of Appendix A, Technical Specifications, with the attached revised page. The revised page is identified by amendment number and contains a marginal line indicating the area of change.

REMOVE

INSERT

3.7-1

3.7-1

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: (1) 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, (2) 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 (3) 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 1772 megawatts (thermal).

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 203, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

(3) Fire Protection

The licensee shall implement and maintain in effect all provisions of the approved Fire Protection Program as described in the licensee's Fire Plan, and as referenced in the Updated Safety Analysis Report, and as approved in the Safety Evaluation Reports, dated November 25, 1977, and December 12, 1978 (and supplement dated February 13, 1981) subject to the following provision:

The licensee may make changes to the approved Fire Protection Program without prior approval of the Commission, only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

(4) 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, is entitled: "Nuclear Management Company Kewaunee Nuclear Power Plant Physical Security Plan (Revision 0)" submitted by letter dated October 18, as supplemented by letter dated October 21, 2004, July 26, 2005, and May 15, 2006.

(5) Deleted

Amendment No. 4 thru 203  
Revised by letter dated ~~May 7, 2008, August 22, 2008~~

### 3.7 AUXILIARY ELECTRICAL SYSTEMS

#### **APPLICABILITY**

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

#### **OBJECTIVE**

To define those conditions of electrical power availability necessary to provide 1) safe reactor operation and 2) continuing availability of engineered safety features.

#### **SPECIFICATION**

- a. The reactor shall not be made critical unless all of the following requirements are satisfied:
  1. The reserve auxiliary transformer is fully operational and energized to supply power to the 4160-V buses.
  2. A second external source of power is fully operational and energized to supply power to emergency buses 1-5 and 1-6.
  3. The 4160-V buses 1-5 and 1-6 are both energized.
  4. The 480-V buses 1-52 and 1-62 and their MCC's are both energized from their respective station service transformers.
  5. The 480-V buses 1-51 and 1-61 are both energized from their respective station service transformers.
  6. Both station batteries and both DC systems are OPERABLE, except during testing and surveillance as described in TS 4.6.b.
  7. Both diesel generators are OPERABLE and each diesel generator shall have:
    - A. Day tanks containing a minimum volume of 1000 gallons;
    - B. An underground storage tank and corresponding day tanks containing a minimum volume of 32,888 gallons of useable fuel;
    - C. An OPERABLE diesel fuel oil transfer pump.
  8. At least one pair of physically independent transmission lines serving the substation is OPERABLE. The three pairs of physically independent transmission lines are:
    - A. R-304 and Q-303
    - B. F-84 and Y-51
    - C. R-304 and Y-51



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATING TO AMENDMENT NO. 203 TO FACILITY OPERATING LICENSE NO. DPR-43

DOMINION ENERGY KEWAUNEE, INC.

KEWAUNEE POWER STATION

DOCKET NO. 50-305

1.0 INTRODUCTION

By application dated January 23, 2009 (Agencywide Documents Management and Access System (ADAMS) Accession No. ML090260299), as supplemented by letters dated January 26 2009 (Accession No. ML090260605), January 30, and February 5, 2009 (Accession No. 090360724), Dominion Energy Kewaunee, Inc. (the licensee) requested changes to the Technical Specifications (TS) for the Kewaunee Power Station (KPS). The supplements provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the Nuclear Regulatory Commission (NRC) staff's original proposed no significant hazards consideration determination as published in the *Herald Times Reporter* of Manitowoc, Wisconsin, on January 29, 2009.

The proposed amendment is a follow-up action to the Notice of Enforcement Discretion (NOED) granted to the licensee on January 29, 2009 (Accession No. ML090291061). Regulatory and technical details related to the NOED are, thus, not repeated in this safety evaluation.

The proposed amendment would revise TS Section 3.7.a.7, regarding emergency diesel generator (EDG) underground fuel oil storage tank (UFOST) capacity to support the current plant configuration that does not rely on a siphon line connecting two UFOSTs. The fuel oil volumes of the two storage tanks cannot be credited in combination to form a single volume that could be delivered to either EDG. The proposed amendment would ensure that each EDG has adequate fuel oil for a 7 day operation at rated power without refurbishment.

There are two 100%-capacity EDGs at KPS. According to the KPS Updated Safety Analysis Report (USAR), the EDGs will automatically start when a safety injection signal is received, a degraded voltage level is sensed on the 4160 Volt (V) bus, or a loss of voltage is detected on the 4160 V bus. The design basis of KPS assumes a loss of offsite power coupled with a design-basis accident (DBA).

Each EDG fuel oil storage and transfer system has two independent tanks with a nominal capacity of 850 gallons. These tanks combine to form the day tank and provide capacity for 4-hour operation of that EDG at 2600 kilowatts (kW). The day tanks are filled from the respective UFOST, each with a nominal 35,000-gallon capacity. The original plant design had a siphon line connecting the two UFOSTs such that the total fuel oil stored in two UFOSTs was

Enclosure

adequate to support operation of one EDG for 7 days. The siphon line is no longer available, resulting in loss of capability to transfer fuel between the UFOSTs.

## 2.0 REGULATORY EVALUATION

Section 1.3 of KPS USAR states that KPS was designed, constructed, and is being operated to comply with Wisconsin Public Service Corporation's understanding of the intent of the Atomic Energy Commission (AEC) General Design Criteria (GDC) for Nuclear Power Plant Construction Permits, as proposed on July 10, 1967. Since the construction of the plant was about 50 percent completed prior to the issuance of the February 20, 1971, 10 CFR 50 Appendix A, GDC, KPS was not required to be reanalyzed and the USAR was not required to be revised to reflect these later criteria. However, the AEC Safety Evaluation Report issued July 24, 1972, acknowledged that the AEC staff assessed the plant, as described in the USAR (Amendment No. 7), against the Appendix A design criteria and "...are satisfied that the plant design generally conforms to the intent of these criteria."

AEC GDC 17, "Electric Power Systems," states that an onsite power system and an offsite electric power system shall be provided to permit functioning of structures systems and components important to safety. The safety function for each system (assuming the other is not functioning) shall be to provide sufficient capacity and capability to assure that (1) specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded as a result of anticipated operational occurrences; and (2) the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents. KPS USAR Sections 1.3 and 8.1.1.2 state that the plant is supplied with normal, auxiliary, standby and emergency power sources as follows:

1. The normal source of auxiliary power for safety features equipment is the off-site power source. Power is supplied via the high- and low-voltage Unit Auxiliary Transformers.
2. Two diesel generators are connected to the emergency buses to supply power in the event of loss of all other [alternating current] AC auxiliary power. Each of the two EDGs is capable of supplying automatically the engineered safety features load required for an acceptable post-blowdown containment pressure transient for any loss-of-coolant accident.

AEC GDC 24, "Emergency Power for Protection Systems," states that in the event of loss of all offsite power, sufficient alternate sources of power shall be provided to permit the required functioning of the protection systems. KPS USAR, Section 1.3 states that redundancy in emergency power is provided by two diesel generators capable of supplying separate 4160 V buses. One complete set of safety features equipment is, therefore, independently supplied from each diesel generator. Diesel engine cranking is accomplished by a stored-energy system supplied solely for the associated diesel generator. The under-voltage relay scheme is designed so that loss of alternating current input power does not prevent the relay scheme from functioning properly.

GDC 17, "Electric Power Systems," requires that an onsite electric power system and an offsite electric power system be provided to permit functioning of structures, systems, and components

important to safety. In addition, GDC 17 contains requirements concerning system capacity, capability, independence, redundancy, availability, testability, and reliability.

GDC 18, "Inspection and testing of electric power systems," requires that electric power systems that are important to safety must be designed to permit appropriate periodic inspection and testing to assess the continuity of the systems and the conditions of their components.

10 CFR 50.36, Technical Specification, Section "c" requires a technical specification limiting condition for operation of a nuclear reactor be established for a structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design-basis accident or transient. Additionally, the regulation requires surveillance requirements to assure that the necessary quality of systems and components is maintained and that the limiting conditions for operation will be met.

Regulatory Guide (RG) 1.137, "Fuel Oil Systems for Standby Diesel Generators," Regulatory Position 1, states that American National Standards Institute (ANSI) Standard N195-1976, "Fuel Oil Systems for Standby Diesel-Generators," provides a method acceptable to the NRC staff for complying with the pertinent requirements of GDC 17. Regulatory Position 1.c states that section 5.4 of ANSI N195-1976, "Calculation of Fuel Oil Storage Requirements," sets forth two methods for the calculation of fuel oil storage requirements. These two methods are (1) calculations based on the assumption that the diesel generator operates continuously for 7 days at its rated capacity; and (2) calculations based on the time-dependent loads of the diesel generator. For the time-dependent load method, the minimum required capacity should include the capacity to power the engineered safety features. Section 5.3 of ANSI N195-1976 states that sufficient on-site oil storage shall be provided to operate the required number of diesel generators for 7 days or the time required to replenish the oil from sources outside the plant site following any limiting design basis event or accident without interrupting the operation of the diesel generator(s), whichever is longer.

Standard Review Plan (SRP) Section 9.5.4 "Emergency Diesel Engine Fuel Oil Storage and Transfer System" describes an acceptable method of reviewing license amendment requests involving the emergency fuel oil storage and transfer systems. The SRP is used to provide approved NRC methods to ensure public safety.

### 3.0 TECHNICAL EVALUATION

The EDG fuel oil storage and transfer system is comprised of two trains, each train consists of: one underground fuel oil storage tank, one submerged transfer pump, "day tank", valves, piping and switches. Two interconnected nominal 850-gallon tanks comprised the EDG fuel oil "day tank" in each EDG room. The day tank provides sufficient fuel oil for approximately four hours of operation of one EDG loaded at 2600 kW. Two underground UFOSTs each contain a nominal 35,000 gallons supply of fuel oil. Each tank has one immersion pump, which transfers fuel oil from its underground tank to its respective EDG day tank. The underground storage tank, together with the day tank, provides a 7-day supply of fuel oil.

Two diesel generators are provided, one connected to 4160V Bus 1-5 and one connected to 4160V Bus 1-6. Each diesel generator is a General Motors Corporation, Electro-Motive Division, Model A-20-C1, diesel engine-generator unit rated at 2600 kW (2860 kW, 110 percent

overload, two thousand hours per year) 0.8 pf, 900 rpm, 4160V, 3-phase, 60 Hz. The generator has emergency ratings of 2950 kW for 7 days continuous and 3050 kW for thirty minutes per year. Each diesel generator, as a backup to the normal standby ac power supply, is capable of sequentially starting and supplying the power requirements of one complete set of engineered safety features equipment.

### 3.1 The Proposed Changes

The current TS Section 3.7.a.7 reads as follows:

*Both diesel generators are OPERABLE. The two underground storage tanks combine to supply at least 35,000 gallons of fuel oil for either diesel generator and the day tanks for each diesel generator contain at least 1,000 gallons of fuel oil.*

The licensee proposed to modify TS Section 3.7.a.7 to read as follows:

*Both diesel generators are OPERABLE, and each diesel generator shall have:*

- A. Day tanks containing a minimum volume of 1,000 gallons;*
- B. An underground storage tank and day tanks containing a minimum volume of 32,888 gallons of useable fuel;*
- C. An OPERABLE diesel fuel oil transfer pump.*

This proposed TS change does not involve any physical changes to the diesel fuel oil storage tanks. The licensee proposed to decrease the required amount of diesel fuel oil in each of the underground fuel oil storage tanks. The licensee proposed to use the first method described in RG 1.137 to determine the required amount of fuel oil storage necessary for a 7-day supply of fuel oil, based on the assumption that the diesel generator operates continuously for 7 days at its rated capacity. The licensee's Calculation C10033 determined that 32,888 gallons of useable diesel fuel oil is required to be available in order to satisfy the criteria for 7-day operation of a single EDG and account for fuel used to perform one monthly surveillance test.

### 3.2 Deterministic Evaluation of the Proposed Changes

The scope of this evaluation is limited to the fuel oil requirement at KPS for each UFOST and day tank.

KPS does not currently have a siphon arrangement between the two underground storage tanks. Therefore, the fuel oil volumes of the two storage tanks cannot be credited in combination to form a single volume that could be delivered to either EDG. Each storage tank must be capable of supplying the required volume of fuel oil to its respective EDG. The purpose of the proposed change to TS Section 3.7.a.7 is to reflect the current configuration of the fuel oil system and ensure that adequate fuel oil is available in the tanks associated with each EDG for a 7-day operation.

### 3.2.1 Compliance with Current Regulations

The offsite and onsite power system at KPS are designed to meet the intent of GDCs 17 and 18, respectively. As described in the USAR Section 8.2.1, the offsite system power source is supplied from the 138/345 kilo Volt (kV) switchyard, which is connected to the unit via the reserve or start-up station service transformer. The 345kV switchyard can be used to energize another 345/138/13.8 kV autotransformer. The tertiary winding of the autotransformer is used to furnish power to the 13.8 kV auxiliary transformer via an underground insulated power cable. This cable becomes the second of the two physically independent circuits to provide offsite power to the onsite distribution systems. Both circuits are normally energized and connected to one or the other of the engineered safeguards buses at all times.

KPS has two EDGs connected to 4160 V buses. These are General Motors Corporation, Electro-Motive Division, Model A-20-C1, generator units rated at 2600 kW (2860 kW, 110 percent overload, two thousand hours per year), 0.8 power factor, 4160 V, 3-phase, 60 Hertz. Each generator has emergency rating of 2950 kW for 7 days continuous and 3050 kW for thirty minutes per year.

Each EDG engine has a set of two nominal 850-gallon day tanks which are combined to form an independent 'day' tank with a minimum capacity for at least one-hour of full-load operation of the EDG. The day tanks for each EDG are filled from the respective UFOST using fuel oil transfer pumps, one per UFOST. There are two UFOSTs, each with a nominal 35,000-gallon capacity. According to the current USAR, the two UFOSTs are connected by a siphon line and the combined usable amount of fuel oil contained in both storage tanks and one set of day tanks provides a minimum of 7 days fuel oil supply for one EDG.

RG 1.137 specifies a minimum of 7 days supply of fuel oil for each EDG system to meet the engineered safety feature load requirements following a loss of offsite power and a DBA. According to the KPS design bases summarized in the licensee's January 23, 2009, application, a minimum of 32,888 gallons of usable fuel oil is required for operation of one EDG at rated power for 7 days. The intent of RG 1.137 was satisfied by the original configuration of the fuel oil storage system with the siphon line which allowed the combined fuel oil storage capacity available onsite between the two UFOSTs and the day tanks to be used by one EDG for 7 days.

### 3.2.2 Proposed Changes

KPS does not currently have the siphon arrangement between the two underground storage tanks. Therefore, the fuel oil volumes of the two UFOSTs cannot be combined to form a single volume that could be delivered to either EDG. Each UFOST can be credited with supplying fuel oil only to its associated EDG. In order to maintain the defense-in-depth approach and satisfy the single failure criteria, each UFOST system must be capable of supplying the required volume of fuel oil to its respective EDG.

In its January 23, 2009, application, the licensee indicated that in the event of loss of offsite power at KPS, one EDG can operate from one UFOST and associated day tanks for 7 days at rated power output without replenishment from other sources. Specifically, the licensee stated that:

- 32,888 gallons of usable fuel oil is required for operation of one EDG stored in the UFOST and the associated set of day tanks. This includes 272 gallons for one hour testing with heatup and cooldown periods not exceeding 30 minutes and added an additional 10 percent for conservatism.
- TS Section 3.7.a.7 for the day tank set associated with each EDG will be maintained at 1,000 gallons of fuel oil which provide capacity for operation of one EDG at 2600 kW for approximately 4 hours.

In response to a staff request for additional information, the licensee provided clarification on the design bases calculation for fuel oil consumption and tank sizing criteria by its January 30, 2009 letter. Specifically, the licensee clarified that:

- The combined volumes of fuel in the 2 day tanks in a set and one UFOST, associated with each EDG, will be used to demonstrate capacity for seven day operation of each EDG.
- 30 gallons will be added to the fuel oil storage requirements to compensate for expansion of fuel oil in the day tanks due to higher ambient temperatures.
- The proposed Section 3.7.a.7 change will require 32,888 gallons of usable fuel oil storage.

The licensee further stated that the fuel oil levels are checked each shift and documented in operator logs. According to the licensee, the log will specify a minimum volume of 33,377 gallons in the UFOST of which 1,733 gallons is not usable. The set of two day tanks for each EDG will be administratively maintained at or above 1,244 gallons assuring a 7-day supply of 32,888 gallons for each EDG.

By its February 5, 2009, letter, the licensee proposed future changes to the USAR to reflect this change in licensing basis as discussed above. The NRC staff found the proposed changes to the USAR appropriate. The USAR will be updated according to the requirements of 10 CFR 50.71.

### 3.2.3 Evaluation of Safety Margins

The existing design of KPS provides sufficient fuel oil for 7-day operation of one EDG with two UFOSTs and associated set of day tanks with a minimum onsite storage capability of 36,000 usable gallons of fuel oil. The proposed amendment to Section 3.7.a.7 will assure that the minimum onsite storage of 65,776 gallons of usable fuel oil is available allowing operation of two EDGs at rated capacity for 7 days.

ANSI N195-1976 sets forth two methods for the calculation of fuel oil storage requirements. These two methods are (1) calculations based on the assumption that the diesel generator operates continuously for 7 days at its rated capacity; and (2) calculations based on the time-dependent loads of the diesel generator. The licensee has used method (1), which provides conservative results for determining the required EDG fuel oil storage capacity. The licensee

has evaluated the higher initial loading of the EDG during a DBA to ensure that method (1) provides conservative results.

In the January 30, 2009, letter, the licensee indicated that the effects of vortexing, unusable volume, instrument inaccuracies, and measurement uncertainties associated with establishing tank levels have been conservatively added to the parameters provided to operators for their logs.

ANSI N195-1976 requires enough fuel oil in the day tank for operation of the EDG at rated power for one hour with a 10 percent margin. For KPS, this results in a requirement of 272 gallons of usable fuel. The current and proposed values in Section 3.7.a.7 require 1000 gallons of fuel oil in each set of tanks. The NRC staff determines that, based on the information provided by the licensee, there is adequate margin in fuel oil supply for the day tanks.

#### 3.2.4 Verification of Fuel Oil Amount

The licensee's Calculation C10033 evaluated the useable and un-useable volumes of the UFOSTs and the day tanks in order to verify that the tanks have the capacity to hold the required amount of fuel oil to satisfy the 7-day requirement for each EDG. Each EDG fuel oil supply system consists of two 850-gallon tanks located in each EDG room, and a nominal 35,000 gallon underground storage tank. The licensee determined a minimum of 32,888 gallons of useable fuel oil was required to be available to each EDG to meet the 7-day design-basis requirement. To ensure the required amount of fuel oil is on hand, the licensee will perform a daily surveillance procedure to verify the quantity of fuel oil available to each EDG from its respective day tanks combined with its respective underground storage tank meets a specified volume. The log will specify a minimum volume of at least 33,377 gallons for each of the UFOSTs; thus assuring a minimum of 31,644 useable gallons are available in each underground tank. The volume of fuel oil in each EDG day tank is maintained automatically by the fuel transfer pump start switch at a level of 596' 10", which assures the level is maintained above the minimum alarm level of 595' 5". These level switches assure a minimum of 1,244 useable gallons are available to the EDG from the day tanks. Additionally, the transfer pump actuation level and minimum alarm level ensure that the TS minimum level of 1,000 gallons is maintained in the day tank. A combination of fuel oil in these two tanks (underground storage tank and day tanks) provides a useable volume of 32,888 gallons to each EDG.

The NRC staff reviewed the licensee's proposed method of assuring the required amount of fuel oil is stored in each of the tanks. Based upon a review the licensee's methodology of calculating the available volume of each tank, the useable volume of each tank, and the required amount of fuel to be stored in each tank, the NRC staff finds the proposed action will provide a reasonable assurance that a 7-day supply of fuel oil is on-hand and available to each EDG.

#### 3.2.5 Acceptability of Proposed TS Changes

The NRC staff reviewed the proposed TS revision described in Section 3.1 above using guidance provided in SRP 9.5.4 to ensure the minimum on-site inventory of fuel oil for each EDG system is sufficient to enable the EDGs to power required engineered safety features for a

period of 7 days or longer as specified by ANSI/ANS-59.51 following any DBA and loss of offsite power. Based upon its review, the NRC staff finds the licensee's proposed change to the KPS TS satisfies the requirements of 10 CFR 50.36, which require a TS limiting condition for a system that is part of the primary success path and which functions or actuates to mitigate a DBA or transient.

### 3.2.6 Acceptability of Future USAR Changes

The Section 8.2.3.1 of the KPS USAR currently states:

Two 850-gallon "day" tanks are located in enclosures within each diesel generator room. The two tanks provide capacity for approximately four hours operation for one generator at full load. Two 35,000-gallon underground storage tanks supply fuel oil through immersion pumps to either pair of day tanks. Combined fuel capability of one storage tank and two day tanks would provide a minimum of 7 days fuel supply for one diesel generator (36,000 gallons of fuel oil), thus assuring adequate time to restore off-site power or to replenish fuel. The diesel fuel oil storage capacity requirements are consistent with those specified in ANSI N195-1976/ANS-59.51, Section 5.2, 5.4 and 6.1. See Reference 3 and Technical Specification 3.7 for fuel oil storage requirements.

The licensee proposes to revise this text to read:

Two 850-gallon "day" tanks are located in enclosures within each diesel generator room. The two tanks provide capacity for approximately four hours operation for one diesel generator at full load. Two separate 35,000-gallon underground storage tanks supply fuel oil through dedicated immersion pumps to each pair of day tanks. The usable amount of fuel oil, available for each diesel generator, contained in the associated diesel generator underground storage tanks and one set of day tanks would provide a minimum of 7 days fuel supply for operation of the associated diesel generator at 100% of the continuous rated power, thus assuring adequate time to restore off-site power or to replenish fuel. Minimum calculated usable volume was determined to be 32,888 gallons, which provides for a 7-day fuel supply plus a monthly surveillance run on the respective diesel generator. An additional 30 gallons of usable volume is required to account for thermal expansion in the day tanks due to the temperature difference from the underground fuel oil storage tank to the day tanks. Thus the total usable volume required to be maintained in each underground storage tank and the associated day tanks must be at least 32,888 gallons. The diesel fuel oil storage capacity requirements are consistent with those specified in ANSI N195-1976/ANS-59.51, Section 5.2, 5.4 and 6.1.

The NRC staff reviewed the licensee's proposed USAR change in accordance with guidance of SRP 9.5.4 to verify whether the EDG description and related diagrams clearly indicate all modes of system operation, including the means for indicating, controlling, and monitoring fuel oil level, temperature, and pressure as required for uninterrupted operation. The NRC staff finds the licensee's proposed change to the KPS USAR satisfy 10 CFR 50 Appendix A, Criterion 17 and RG 1.137, which requires a 7-day supply of fuel oil available on-site to each diesel generator.

The licensee will update the KPS USAR with the above text on a schedule in accordance with the scheduler requirements of 10 CFR 50.71.

### 3.2.7 Proposed TS Bases and USAR Changes

As part of the application for amendment, the licensee provided draft TS Bases pages. The NRC staff reviewed these draft pages and found the changes consistent with the TS changes evaluated above.

### 3.3 Summary of NRC Staff Evaluation

The NRC staff evaluated the licensee's request to revise TS Section 3.7.a.7 associated with EDG UFOSTs and day tanks without crediting the siphon line interconnection between the UFOSTs. The NRC staff's deterministic evaluation supports the proposed revision of the KPS TS for the UFOST and day tanks associated with each EDG system. The NRC staff's conclusion is based on the following: (1) the increase in required fuel oil inventory does not degrade safety margins; (2) the unavailability of the siphon line does not negatively impact the performance capabilities of each EDG; and (3) the two EDGs remain capable of powering the required loads necessary to achieve safe shutdown.

Based on the above evaluation, the NRC staff finds the proposed changes to the KPS TS provide reasonable assurance of the continued availability of the required electrical power to shut down the reactor and to maintain the reactor in a safe condition after an anticipated operational occurrence or a postulated DBA. Furthermore, the NRC staff concludes that the proposed TS changes are in accordance with 10 CFR 50.36, and meet the intent of GDCs 17 and 18. The NRC staff finds that the proposed TS changes meet the intent of RG 1.137 recommendations for onsite fuel oil storage capacity. Therefore, the staff finds the proposed TS changes acceptable.

### 4.0 STATEMENT OF EXIGENT CIRCUMSTANCES

The Commission's regulation as stated in 10 CFR 50.91, provides special exceptions for the issuance of amendments when the usual 30-day public notice cannot be met. One type of special exception is an exigency. An exigency exists when the NRC staff and the licensee need to act quickly and time does not permit the staff to publish a *Federal Register* notice allowing 30 days for prior public comment, and the NRC staff also determines that the amendment involves no significant hazards consideration.

In accordance with 10 CFR 50.91(a)(6)(i)(B), the NRC staff used local media to provide reasonable notice to the public in the area surrounding Kewaunee Power Station, of the proposed amendment and proposed finding of no significant hazards consideration, and reasonable opportunity to comment thereon. The notice was published in Manitowoc *Herald Times Reporter*, Wisconsin, January 29, 2009, and requested any comments be submitted by close of business on February 5, 2009 by telephone, e-mail, or mail. No comments were received.

The licensee's January 26, 2009, submittal requests that an amendment be issued in a timely manner. The licensee's reasoning is reproduced below:

On January 23, 2009, the NRC staff notified DEK during a telephone conference that without a siphon arrangement to equalize EDG underground fuel oil storage tank (UFOST) levels, KPS was not in compliance with the requirements of KPS TS 3.7.a.7. TS 3.7.a.7 requires the EDG UFOSTs combine to supply at least 35,000 gallons for either EDG. DEK had relied on a portable transfer pump to provide an interconnection between the tanks to ensure the combined fuel oil volume of at least 35,000 gallons was available from the UFOSTs to either EDG. The NRC has determined that using the portable transfer pump is not consistent with the KPS current licensing bases. Therefore, compliance with TS 3.7.a.7 is not physically possible with the existing storage tanks because the siphon line is not functional and the NRC informed DEK that the portable transfer pump was not an appropriate substitute for the siphon line. Consequently, this condition rendered both EDGs inoperable at 1358 CST.

Although the EDG fuel oil tanks currently contain a seven-day supply of fuel oil for each EDG onsite, the plant is not in strict compliance with the TS. Because there is insufficient capacity in the individual EDG UFOSTs to meet the current TS 3.7.a.7 requirement of at least 35,000 gallons, and the siphon line cannot be readily restored, the TS must be changed to resolve this issue.

During the telephone conference, DEK requested and received a verbal notice of enforcement discretion (NOED) from the NRC at 1542 CST. The NRC also stated that the NOED would expire after 14 days. Therefore, the NOED granted on January 23, 2009, will expire on February 6, 2009, at 1542 COT. Approval of License Amendment Request (LAR) 247 would restore KPS compliance with TS 3.7.a.7. If the LAR is not approved within the 14-day period of the NOED, the current KPS TS would require that DEK initiate actions within one hour to place the unit in a MODE in which the TS 3.7.a.7 does not apply by placing KPS, in at least HOT STANDBY within the next 6 hours, and at least HOT SHUTDOWN within the following 6 hours. Therefore, in order to prevent an unnecessary plant shutdown, review and approval of LAR 247 is requested to be completed by February 6, 2009, under the rules of 10 CFR 50.91(a)(6).

The licensee also explained why the requested action could not reasonably have been identified earlier:

DEK had previously recognized the failure of the siphon line between the UFOSTs and had put in place, using the 10 CFR 50.59 process, an alternate means of interconnecting the UFOSTs. The alternate means consisted of using a portable transfer pump to pump fuel oil from either UFOST to the opposite UFOST. The portable transfer pump provided a means to interconnect the UFOSTs and ensure that the TS required amount of diesel fuel (35,000 gallons) was available from the UFOSTs to either EDG. DEK took actions to stage the equipment necessary to pump fuel oil from one UFOST to another; created procedures for the operator to perform the installation and operation of the UFOST activity; and trained personnel on the installation and use of the portable transfer pump. Based on DEK's understanding of the operability requirements for the UFOSTs and the associated EDGs, no further actions were deemed necessary.

However, on January 23, 2009 during a telephone conference, DEK was informed of the NRC position that the UFOSTs are considered inoperable without the siphon line between the UFOSTs. During the telephone conference, the NRC indicated that in order for the EDGs to be operable, the UFOSTs must be interconnected or contain 35,000 gallons of fuel. Therefore, the need for the exigent TS change request could not have reasonably been identified earlier.

Thus, the licensee was not aware that the siphon line modification was not in compliance with applicable requirements. The licensee was made aware of the noncompliance on January 23, 2009, the day when the NOED was verbally granted. On the basis of the above discussion, the NRC staff has determined that exigent circumstances exist, that the licensee used its best efforts to make a timely application and did not cause the exigent situation.

#### 5.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

Commission's regulation at 10 CFR 50.92(c) states that the Commission may make a final determination that a license amendment involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated; (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) result in a significant reduction in a margin of safety.

The NRC staff reviewed the no significant hazards consideration (NSHC) evaluation provided by the licensee in its application. The NRC staff has made a final determination that NSHC consideration is involved for the proposed amendment and that the amendment should be issued as allowed by the criteria contained in 10 CFR 50.91. The NRC staff's final determination is presented below:

- (1) Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

No. The probability or consequences of accidents previously evaluated in the Updated Safety Analysis Report are unaffected by this proposed change. There is no change to any equipment response or accident mitigation scenario, and this change results in no additional challenges to fission product barrier integrity. The proposed change does not alter the design, configuration, operation, or function of any plant system, structure, or component. As a result, the outcomes of previously evaluated accidents are unaffected. The proposed change maintains the current required 7 days of available fuel oil to the emergency diesel generators consistent with the requirements of [American National Standards Institute] ANSI N195-1976/[American Nuclear Society] ANS-59.51, section 5.4.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

- (2) Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

No. No new accident scenarios, failure mechanisms, or limiting single failures are introduced as a result of the proposed change. The proposed change does not challenge the performance or integrity of any safety-related system. The proposed change does not install or remove any plant equipment. The proposed change does not alter the design, physical configuration, or mode of operation of any plant structure, system, or component. No physical changes are being made to the plant, so no new accident causal mechanisms are being introduced. The proposed change maintains the current required 7 days of available fuel oil to the emergency diesel generators consistent with the requirements of ANSI N195-1976/ANS-59.51, section 5.4.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

- (3) Does the proposed amendment involve a significant reduction in a margin of safety?

No. The margin of safety associated with the acceptance criteria of any accident is unchanged. The proposed change will have no affect on the availability, operability, or performance of the safety-related systems and components. The proposed change does not alter the design, configuration, operation, or function of any plant system, structure, or component. The ability of operable structures, systems, and components to perform their designated safety function is unaffected by this proposed change. The proposed change maintains the current required 7 days of available fuel oil to the emergency diesel generators consistent with the requirements of ANSI N195-1976/ANS-59.51, section 5.4.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

## 6.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Wisconsin State official was notified of the proposed issuance of the amendment. The State official had no comments.

## 7.0 ENVIRONMENTAL CONSIDERATION

This amendment changes a requirement with respect to 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 effluent 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 this amendment involves no significant hazards consideration (The *Herald News Reporter* of Manitowoc, Wisconsin, January 29, 2009) and there has been no public comment on such finding. Accordingly, this 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 this amendment.

8.0 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) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: Gurcharan Singh Matharu  
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Matthew McConnell  
Peter Tam

Date: February 6, 2009

Mr. David A. Christian  
President and Chief Nuclear Officer  
Dominion Energy  
5000 Dominion Boulevard  
Glen Allen, VA 23060-6711

February 6, 2009

SUBJECT: KEWAUNEE POWER STATION - ISSUANCE OF AMENDMENT RE: DIESEL  
GENERATOR FUEL STORAGE TANK CAPACITY REQUIREMENT  
(TAC NO. ME0436)

Dear Mr. Christian:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 203 to Facility Operating License No. DPR-43 for the Kewaunee Power Station in response to your application dated January 23, 2009, as supplemented by letters dated January 26, January 30, and February 5, 2009. This amendment is issued under exigent circumstances and is related to the Notice of Enforcement Discretion issued on January 29, 2009.

The amendment revises the Technical Specifications in Section 3.7.a.7 from "The two underground storage tanks combine to supply at least 35,000 gallons of fuel oil for either diesel generator and the day tanks for each diesel generator contain at least 1,000 gallons of fuel oil." to require each diesel generator's underground storage tank and corresponding day tanks to contain a minimum useable volume of 32,888 gallons.

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

Sincerely,  
**/RA/**  
Peter S. Tam, Senior Project Manager  
Plant Licensing Branch III-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-305

Enclosures:

1. Amendment No. 203 to License No. DPR-43
  2. Safety Evaluation
- cc w/encls: Distribution via ListServ

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ADAMS ACCESSION NUMBER: **ML090280581**

OFFICE	LPL3-1/PM	LPL3-1/LA	EEEE/BC	SBPB/BC	ITSB/BC	OGC	LPL3-1/BC
NAME	PTam	BTully	GWilson*	DHarrison*	RElliott	LSubin	LJames
DATE	2/6/09	2/6/09	2/5/09*	2/5/09*	2/6/09	2/6/09	2/6/09

\*Safety evaluation input transmitted by memo on the date shown.

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