



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

March 27, 2009

Mr. David J. Bannister  
Vice President and CNO  
Omaha Public Power District  
Fort Calhoun Station  
444 South 16th St. Mall  
Omaha, NE 68102-2247

SUBJECT: FORT CALHOUN STATION, UNIT NO. 1 - ISSUANCE OF AMENDMENT RE:  
CLARIFICATION OF TECHNICAL SPECIFICATION (TS) 2.7(2)j REGARDING  
EMERGENCY DIESEL GENERATORS ALLOWED OUTAGE TIME (TAC  
NO. MD8569)

Dear Mr. Bannister:

The U.S. Nuclear Regulatory Commission (NRC) has issued the enclosed Amendment No. 258 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 April 22, 2008, as supplemented by letter dated March 6, 2009.

The amendment modifies TS 2.7, "Electrical Systems," Limiting Condition for Operation (LCO) 2.7(2)j related to the allowed outage time for the emergency diesel generators (DGs).

The change clarifies LCO 2.7(2)j such that a single period of inoperability for one DG is limited to 7 consecutive days and that the cumulative total time of inoperability for both DGs during any calendar month cannot exceed 7 days.

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,

A handwritten signature in cursive script that reads "Alan Wang".

Alan B. Wang, Project Manager  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-285

Enclosures:

1. Amendment No. 258 to DPR-40
2. Safety Evaluation

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

OMAHA PUBLIC POWER DISTRICT

DOCKET NO. 50-285

FORT CALHOUN STATION, UNIT NO. 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 258  
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 April 22, 2008, as supplemented by letter dated March 6, 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 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.

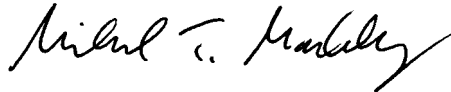
2. Accordingly, Renewed Facility Operating License No. DPR-40 is amended by changes as indicated in the attachment to this license amendment, and paragraph 3.B. of Renewed Facility Operating License No. DPR-40 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 258, 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 120 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Michael T. Markley, 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-40  
and Technical Specifications

Date of Issuance: March 27, 2009

ATTACHMENT TO LICENSE AMENDMENT NO. 258  
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 3

2.7 – Page 3

- (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. 258 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.

## TECHNICAL SPECIFICATIONS

### 2.0 **LIMITING CONDITIONS FOR OPERATION**

#### 2.7 Electrical Systems (Continued)

- d. Either one of the 4.16kV engineered safeguards buses, 1A3 or 1A4 may be inoperable for up to 8 hours provided the operability of the diesel generator associated with the operable bus is demonstrated immediately and there are no inoperable required engineered safeguards components associated with the operable bus.
- e. One of each group of 4160 V/480 V Transformers (T1B-3A or 4A), (T1B-3B or 4B), and (T1B-3C or 4C) may be inoperable for up to 8 hours provided there are no inoperable required engineered safeguards components which are redundant to components on the inoperable transformer.
- f. One of the 480 V distribution buses connected to bus 1A3 or connected to bus 1A4 may be inoperable for up to 8 hours provided there are no inoperable required safeguards components which are redundant to components on the inoperable bus.
- g. Either Group of MCC No.'s (3A1, 3B1, 3A2, 3C1, 3C2,) or (4A1, 4A2, 4C1, 4C2) may be inoperable for up to 8 hours provided there are no inoperable required safeguards components which are redundant to components on the inoperable MCC. MCC 3C1 may be inoperable in excess of 8 hours if battery chargers No. 1 and No. 2 are operable.
- h. One of the four 120V a-c instrument buses (A, B, C or D) may be inoperable for 8 hours provided the reactor protective and engineered safeguards systems instrument channels supplied by the remaining three buses are all operable.
- i. Two battery chargers may be inoperable for up to 8 hours provided battery charger No. 1 (EE-8C) or No. 2 (EE-8D) is operable.
- j. Either one of the emergency diesel generators (DG-1 or DG-2) may be inoperable for up to seven consecutive days provided there are no inoperable required engineered safeguards components associated with the operable diesel generator. In addition, the cumulative total time of inoperability for both DGs during any calendar month shall not exceed seven days. If one diesel generator is inoperable, within 8 hours (regardless of when the inoperable diesel generator is restored to operability) EITHER:
  - (1) Start the other diesel generator to verify operability, OR
  - (2) Ensure the absence of common cause for the diesel generator inoperability for the other diesel generator.
- k. Not used.



UNITED STATES  
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 258 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 April 22, 2008 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML081140092), as supplemented by letter dated March 6, 2009 (ADAMS Accession No. ML090690689), Omaha Public Power District (OPPD, the licensee) requested changes to the Technical Specifications (Appendix A to Renewed Facility Operating License No. DPR-40) for the Fort Calhoun Station (FCS), Unit No. 1.

The supplemental letter dated March 6, 2009, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the U.S. Nuclear Regulatory Commission (NRC) staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on June 17, 2008 (73 FR 34342).

The proposed amendment would modify Technical Specification (TS) 2.7 "Electrical Systems," Limiting Condition for Operation (LCO) 2.7(2)j related to the allowed outage time (AOT) for the emergency diesel generators (DGs). The current TS require that either one of the DGs may be inoperable for up to 7 consecutive days (total for both) during any month. This wording could suggest that an DG may be inoperable for two consecutive seven-day periods for a total of fourteen consecutive days spanning two months. Specifically, the proposed change would clarify that LCO 2.7(2)j permit a single period of inoperability for one DG limited to 7 consecutive days and that the cumulative total time of inoperability for both DGs during any calendar month cannot exceed 7 days. The proposed revision to LCO 2.7(2)j requires both conditions to be met.

The proposed amendment is intended to ensure that the allowed outage time for one DG does not exceed 7 consecutive days at any given time and the cumulative outage time for both DGs combined does not exceed 7 days in a calendar month. The change is intended to remove the ambiguity in the original TS related to the interpretation of the term 'month' and the allowable time interval between successive outages for single or both DGs.

## 2.0 REGULATORY EVALUATION

In Section 50.36 of Title 10 of the *Code of Federal Regulations* (10 CFR), "Technical specifications," the NRC established its regulatory requirements related to the content of TSs. Pursuant to 10 CFR 50.36, TSs are required to include items in the following five specific categories related to station operation: (1) safety limits, limiting safety system settings, and limiting control settings; (2) limiting conditions for operation (LCOs); (3) surveillance requirements (SRs); (4) design features; and (5) administrative controls. The rule does not specify the particular requirements to be included in a plant's TS. As stated in 10 CFR 50.36(c)(2)(i), the "[l]imiting conditions for operation are the lowest functional capability or performance levels of equipment required for safe operation of the facility." The regulations in 10 CFR 50.36(c)(3) state that "[s]urveillance requirements 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."

In a memorandum dated September 18, 1992, the Commission approved the NRC staff proposal in SECY-92-223, "Resolution of Deviations Identified During the Systematic Evaluation Program," not to apply 10 CFR Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants," to plants with construction permits prior to May 21, 1971 (ADAMS Legacy Library Accession No. AN910060362). FCS was licensed for construction prior to May 21, 1971, and at that time committed to the draft General Design Criteria (GDC). The draft GDC, which are similar to Appendix A, General Design Criteria for Nuclear Power Plants in 10 CFR Part 50, are contained in Appendix G of the FCS Updated Safety Analysis Report (USAR).

FCS Design Criterion 24, "Emergency Power for Protection Systems." 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.

FCS Design Criterion 38, "Reliability and Testability of Engineered Safety Features." All engineered safety features shall be designed to provide high functional reliability and ready testability. In determining the suitability of a facility for a proposed site, the degree of reliance upon and acceptance of the inherent and engineered safety afforded by the systems, including engineered safety features, will be influenced by the known and the demonstrated performance capability and reliability of the systems, and by the extent to which the operability of such systems can be tested and inspected where appropriate during the life of the plant.

FCS Design Criterion 39, "Emergency Power For Engineered Safety Features." Alternate power systems shall be provided and designed with adequate independency, redundancy capacity and testability to permit the functioning required of the engineered safety features. As a minimum, the onsite power system and the offsite power system shall each, independently, provide this capacity assuming a failure of a single active component in each power system.

Section 50.65 of 10 CFR, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants," requires licensees to monitor the performance or condition of structures, systems, or components, against licensee-established goals, in a manner sufficient to provide reasonable assurance that these structures, systems, and components are capable of fulfilling their intended functions.



### 3.0 TECHNICAL EVALUATION

#### 3.1 System Description

The FCS USAR describes the facility as a single unit nuclear power station that complies with the requirements of FCS Design Criterion 39. The design of offsite power sources also meets the intent of 10 CFR Appendix A GDC 17. The preferred power source is taken through a single circuit 161 kilo Volt (kV) overhead transmission line and the transformers T1A3 and T1A4 to the plant essential buses. The alternate preferred power source is the 345 kV system which can be converted to an offsite power source by opening the motor-operated main generator/transformer disconnect switch DS-T1 and backfeeding the plant using the 22 kV/345 kV main transformer as a stepdown transformer. The two sources emanate from the FCS substation, which has a breaker and a half scheme and includes high-speed relaying for line and bus protection.

As described in the USAR Section 8.4, "Emergency Power Systems," the FCS Onsite Class 1E Alternating Current (AC) electrical distribution system is powered from two safety-related DGs. The 2000-hour rating of 2627 kilowatt (kw) net output power is the design capacity available for operation of engineered safeguards under the most restrictive design-basis accident (DBA) from initiation through long-term post-accident cooling. Both generator sets independently start automatically upon loss-of-offsite power (LOOP) and are ready to accept load within 10 seconds of loss of normal supply power. Each DG has sufficient capacity to start in sequence, the loads required for the safe shutdown equipment for the maximum postulated accident concurrent with a LOOP. The DG design permits periodic starting and running during normal plant operations.

The requirements of FCS Design Criterion 24 are satisfied as each of the plant protection systems have access to the following sources, in the order and times listed in the USAR:

- a. 161 kV System: No delay, as two independent non safety related buses are normally connected to the 161 kV supply.
- b. DGs: After 10 seconds (engine start and acceleration), power is available for transfer of engineered safeguards to this emergency on-site source. The transfer is automatic on failure of the connected offsite power source.
- c. 345 kV System: By backfeed from the switchyard following manual disconnection of the generator whenever it is tripped, followed by manual reclosure of the 345 kV circuit breaker. The time delay is variable depending on the nature of the problem that required the backfeed to be initiated.

#### 3.2 Proposed Technical Specification Changes

On February 1, 2008, OPPD contacted NRC Region IV to inquire about enforcement discretion to extend the AOT for an DG past the allowed 7 days. The existing TS 2.7(2)j states:

Either one of the emergency diesel generators (DG-1 or DG-2) may be inoperable for up to seven days (total for both) during any month, provided there are no inoperable required engineered safeguards components associated with

the operable diesel generator. If one diesel generator is inoperable, within 8 hours (regardless of when the inoperable diesel generator is restored to operability) EITHER:

- (1) Start the other diesel generator to verify operability, OR
- (2) Ensure the absence of common cause for the diesel generator inoperability for the other diesel generator.

This TS wording, which dates from original issuance of the operating license, is considered ambiguous and open to interpretation. The TS AOT could conceivably extend to 14 consecutive days, spanning the course of two months, depending on the interpretation of when the 30 days started. In view of the ambiguity in the interpretation of the existing TS Section 2.7(2j), there was a concern that the request may not get approved. Therefore, in its letter dated April 22, 2008, the licensee proposed to revise TS Section 2.7(2j) such that in all circumstances a single period of inoperability for one DG is limited to 7 consecutive days and that the cumulative total time of inoperability for both DGs during any calendar month cannot exceed 7 days. The proposed revision to TS 2.7(2j) requires both conditions to be met.

In response to NRC staff request for additional information, the licensee, in its letter dated March 6, 2009, provided a clarification to the proposed TS wording to state:

Either one of the emergency diesel generators (DG-1 or DG-2) may be inoperable for up to seven consecutive days provided there are no inoperable required engineered safeguards components associated with the operable diesel generator. In addition, the cumulative total time of inoperability for both DGs during any calendar month shall not exceed seven days. If one diesel generator is inoperable, within 8 hours (regardless of when the inoperable diesel generator is restored to operability) EITHER:

- (1) Start the other diesel generator to verify operability, OR
- (2) Ensure the absence of common cause for the diesel generator inoperability for the other diesel generator.

### 3.3 Evaluation

TSs address configuration control through specifying time limits for equipment out of service, and actions, generally leading to plant shutdown, when the out-of-service times are exceeded. TSs are primarily based on the deterministic DBAs, and do not consider the plant risk impact as a factor in the action requirements. The TS AOTs were developed to address random failures of plant safety systems or components (SSC) and a judgment of a reasonable time to effect repairs before plant shutdown is required. Normally, TSs may serve as the preanalyzed assessment, used with sound judgment, when the licensee proposes that a single SSC be removed from service for maintenance when no other SSC is out of service.

The objective of TS Section 2.7(2j) is to ensure that each DG is adequately tested and maintained within the allowed time constraints. The limited AOT of 7 days in a month ensures

that one DG outage does not impose an extended risk to the availability of onsite power sources in the event of a LOOP. The proposed change maintains this existing requirement and clarifies the total AOT as applicable for

1. A maximum of 7 consecutive days in a calendar month for one DG.
2. A maximum of 7 cumulative days in a calendar month for both DGs.

In its letter dated March 6, 2009, OPPD clarified their TS Basis to ensure that 7 consecutive days of DG AOT in 1 month must not be misconstrued to imply 14 consecutive days in 2 months (i.e., 7 days at the end of 1 calendar month followed by 7 days at the beginning of the following month).

FCS is not committed to NRC Regulatory Guide (RG) 1.93, "Availability of Electric Power Sources," dated December 1974, and does not have the 72-hour LCO recommended in the RG. However, the additional requirement at FCS for limiting the AOT to a maximum of 7 consecutive days coupled with a restriction of 7 cumulative days in a calendar month for both DGs meets the intent of minimizing the risk for a station blackout event at the plant.

The NRC staff reviewed FCS USAR Section 8, "Electrical Systems," and confirmed that there is no requirement in the FCS USAR that would be adversely affected by the licensee's requested change to the TS. The NRC staff concludes that the change removes the ambiguity in the original TS related to the interpretation of the term 'month' and the allowable time interval between successive outages for single or both DGs and therefore, is 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. 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 June 17, 2008 (73 FR 34342). 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) 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: G. Singh Matharu

Date: March 27, 2009

March 27, 2009

Mr. David J. Bannister  
Vice President and CNO  
Omaha Public Power District  
Fort Calhoun Station  
444 South 16th St. Mall  
Omaha, NE 68102-2247

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EMERGENCY DIESEL GENERATORS ALLOWED OUTAGE TIME (TAC  
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Sincerely,

/RA/

Alan B. Wang, Project Manager  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-285

Enclosures:

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2. Safety Evaluation

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\*3/10/09 SE memo

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