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

January 19, 2018

Ms. Mary J. Fisher
Vice President, Energy Production and
Nuclear Decommissioning
Omaha Public Power District
Fort Calhoun Station
9610 Power Lane, Mail Stop FC-2-4
Blair, NE 68008

SUBJECT: FORT CALHOUN STATION, UNIT 1 - ISSUANCE OF AMENDMENT RE: REMOVAL OF DRY CASK LOADING LIMITS (CAC NO. MF9831; EPID L-2017-LLA-0235)

Dear Ms. Fisher:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 296 to Renewed Facility Operating License No. DPR-40 for the Fort Calhoun Station, Unit 1 (FCS). The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated June 9, 2017, as supplemented by letter dated September 21, 2017.

The amendment deletes TS 2.8.3(6), "Spent Fuel Cask Loading," and associated Figure 2-11, "Limiting Burnup Criteria for Acceptable Storage in Spent Fuel Cask"; TS 3.2, Table 3-5, item 24, "Spent Fuel Cask Loading"; TS 4.3.1.3, Design Features associated with spent fuel casks; and portions of TS 3.2, Table 3-4, item 5, footnote (4) on boron concentration associated with cask loading.

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,

James Kim

James Kim, Project Manager
Special Projects and Process Branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-285

Enclosures:
1. Amendment No. 296 to DPR-40
2. Safety Evaluation

cc: Listserv

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

OMAHA PUBLIC POWER DISTRICT

DOCKET NO. 50-285

FORT CALHOUN STATION, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 296
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 June 9, 2017, as supplemented by letter dated September 21, 2017, 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. 296, are hereby incorporated in the license. Omaha Public Power District shall operate the facility in accordance with the Technical Specifications.

3. The license amendment is effective as of its date of issuance and shall be implemented within 90 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA by Eva Brown for/

Douglas A. Broaddus, Chief
Special Projects and Process Branch
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: January 19, 2018

ATTACHMENT TO LICENSE AMENDMENT NO. 296 TO

RENEWED FACILITY OPERATING LICENSE NO. DPR-40

FORT CALHOUN STATION, UNIT 1

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.

Renewed Facility Operating License No. DPR-40

REMOVE	INSERT
-3-	-3-

Technical Specifications

REMOVE	INSERT
2.8 – Page 14	2.8 – Page 14
2.8 – Page 15	2.8 – Page 15
2.8 – Page 28	2.8 – Page 28
2.8 – Page 29	---
3.2 – Page 8	3.2 – Page 8
3.2 – Page 14	3.2 – Page 14
4.0 – Page 2	4.0 – Page 2

(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. 296 are hereby incorporated in the license. Omaha Public Power District shall operate the facility in accordance with the Technical Specifications.

C. Security and Safeguards Contingency Plans

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

OPPD shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The OPPD CSP was approved by License Amendment No. 266 and modified by License Amendment No. 284 and Amendment No. 294.

2.0 **LIMITING CONDITIONS FOR OPERATION**
2.8 Refueling
2.8.3 Refueling Operations - Spent Fuel Pool

2.8.3(6) DELETED

Intentionally Blank

2.0 LIMITING CONDITIONS FOR OPERATION
2.8 Refueling

Bases (Continued)

2.8.3(6) DELETED

References

(1) USAR Section 9.5
(2) USAR Section 9.10
(3) USAR Section 14.18

TABLE 3-4 (Continued)

MINIMUM FREQUENCIES FOR SAMPLING TESTS

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

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

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

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

(4) Prior to placing unirradiated fuel assemblies in the spent fuel pool and weekly when unirradiated fuel assemblies are stored in the spent fuel pool.

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

TABLE 3-5
MINIMUM FREQUENCIES FOR EQUIPMENT TESTS

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

4.0 **DESIGN FEATURES** (Continued)

c. A nominal 8.6 inch center to center distance between fuel assemblies placed in Region 2, the high density fuel storage racks,

d. A nominal 9.8 inches (East-West) by 10.3 inches (North South) center to center distances between fuel assemblies placed in Region 1, the low density fuel storage racks,

e. New or partially spent fuel assemblies with a discharge burnup in the "acceptable domain" of Figure 2-10 for "Region 2 Unrestricted" may be allowed unrestricted storage in any of the Region 2 fuel storage racks in compliance with Reference (1).

f. Partially spent fuel assemblies with a discharge burnup between the "acceptable domain" and "Peripheral Cells" of Figure 2-10 may be allowed unrestricted storage in the peripheral cells of the Region 2 fuel storage racks in compliance with Reference (1).

g. New or partially spent fuel assemblies with a discharge burnup in the "unacceptable domain" of Figure 2-10 will be stored in Region 1 in compliance with Reference (1).

4.3.1.2 The new fuel storage rack is designed and shall be maintained with:

a. Fuel assemblies having a maximum U-235 enrichment of 5.0 weight percent,

b. A nominal 16 inch center to center distance between fuel assemblies placed in the storage rack.

4.3.1.3 DELETED

UNITED STATES
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 296 TO RENEWED FACILITY

OPERATING LICENSE NO. DPR-40

OMAHA PUBLIC POWER DISTRICT

FORT CALHOUN STATION, UNIT 1

DOCKET NO. 50-285

1.0 INTRODUCTION

By application dated June 9, 2017, as supplemented by letter dated September 21, 2017 (Agencywide Documents Access and Management System Accession Nos. ML17160A405 and ML17264A750, respectively), Omaha Public Power District (OPPD, the licensee) requested changes to the Technical Specifications (TSs; Appendix A to Renewed Facility Operating License No. DPR-40) for the Fort Calhoun Station, Unit 1 (FCS).

The proposed amendment would delete TS 2.8.3(6), "Spent Fuel Cask Loading," and associated Figure 2-11, "Limiting Burnup Criteria for Acceptable Storage in Spent Fuel Cask"; TS 3.2, Table 3-5, item 24, "Spent Fuel Cask Loading"; TS 4.3.1.3, Design Features associated with spent fuel casks; and portions of TS 3.2, Table 3-4, item 5, footnote (4) on boron concentration associated with cask loading.

The supplemental letter dated September 21, 2017, 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 August 15, 2017 (82 FR 38718).

2.0 REGULATORY EVALUATION

The requested amendment concerns criticality controls and loading of spent fuel casks. Currently, criticality requirements concerning spent fuel casks are in TS 2.8.3(6), "Spent Fuel Cask Loading," and associated Figure 2-11, "Limiting Burnup Criteria for Acceptable Storage in Spent Fuel Cask"; TS 3.2, Table 3-5, item 24, "Spent Fuel Cask Loading"; TS 4.3.1.3, Design Features associated with spent fuel casks; and portions of TS 3.2, Table 3-4, item 5, footnote (4) on boron concentration associated with cask loading. These requirements were placed into the TS by Amendment No. 239 dated April 10, 2006 (ADAMS Accession No. ML061000597). The April 10, 2006, license amendment was prompted by Regulatory Issue Summary (RIS) 2005-05, "Regulatory Issues Regarding Criticality Analyses for Spent Fuel Pools and Independent Spent Fuel Storage Installations," dated March 23, 2005 (ADAMS

Accession No. ML043500532), which had advised reactor licensees that they must meet both the requirements of Section 50.68 of Title 10 of the *Code of Federal Regulations* (10 CFR) and 10 CFR Part 72 with respect to subcriticality during storage cask loading in spent fuel pools. Section 50.68 describes the requirements for maintaining subcriticality of fuel assemblies in the spent fuel pool.

However, the Commission later amended 10 CFR 50.68 to state that the criticality accident requirements of 10 CFR 50.68(b) do not apply to fuel within a package or cask in a spent fuel pool. As the Commission explained when amending the rules (71 FR 66648; November 16, 2006, as confirmed by 72 FR 3705; January 26, 2007) (confirming effective date of new rule), the criticality accident requirements of 10 CFR Parts 71 or 72, as applicable, apply to fuel within a package or cask in a spent fuel pool. As a result of the rulemaking, a licensee moving fuel between the spent fuel pool and a package or cask need only analyze fuel within the package or cask according to 10 CFR Parts 71 or 72, as applicable, and is not required to analyze fuel within the package or cask using 10 CFR 50.68(b) requirements. Section 50.68(c) of 10 CFR eliminated an unnecessary burden of addressing spent fuel criticality analyses for spent fuel pools under 10 CFR 50.68 and Independent Spent Fuel Storage Installations (ISFSI) under 10 CFR Part 72. In light of 50.68(c), there is no need for additional redundant criticality controls in the TS.

Through operation of 10 CFR 72.210, a general license is issued for the storage of spent fuel in an ISFSI at power reactor sites to persons authorized to possess or operate nuclear power reactors under 10 CFR Part 50. Through operation of 10 CFR 71.71(a), a general license is issued to any licensee of the Commission to transport, or to deliver to a carrier for transport, licensed material in a package for which a license, certificate of compliance, or other approval has been issued by the NRC.

3.0 TECHNICAL EVALUATION

In reviewing this amendment request, the acceptance criterion used by the NRC staff was that the criticality controls to be eliminated from the TS were, in fact, those controls addressed by 10 CFR 50.68(c). The NRC staff also considered whether any other licenses would be impacted by determining whether other licenses directly or indirectly takes credit for, or assumed the presence of, some aspect of the 10 CFR Part 50 license.

Revising portions of TS 3,2, Table 3-4, item 5, footnote (4) to remove a reference to a normal operations sampling tests of spent fuel casks in the spent fuel pool is acceptable because OPPD is prohibited from operating the reactor or placing fuel in the reactor vessel at FCS pursuant to 10 CFR 50.829a)(2), and is no longer in a configuration or a condition under which the TS apply.

On September 21, 2017, the licensee explained that although some station 10 CFR Part 50 programs (i.e., Radiation Protection, Chemistry, Training, etc.) are credited in the 10 CFR Part 72 general license, there is no overlap between the programs and the requested license amendment. In addition, the licensee affirmed that deleting these TS sections will not have any adverse impact on its cask loading requirements.

The NRC staff confirmed that the TS sections to be removed address criticality analyses for the casks, and that these analyses are no longer required due to 10 CFR 50.68(c). Therefore, the licensee's requested changes to delete TS 2.8.3(6), TS 3.2, Table 3-5, item 24, and Design Feature TS 4.3.1.3 are 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 January 3, 2018. 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 August 15, 2017 (82 FR 38718). 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: K. Wood

Date: January 19, 2018

SUBJECT: FORT CALHOUN STATION, UNIT 1 - ISSUANCE OF AMENDMENT RE: REMOVAL OF DRY CASK LOADING LIMITS (CAC NO. MF9831; EPID L-2017-LLA-0235) DATED JANUARY 19, 2018

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ADAMS Accession No. ML17338A172 *memo dated **via email

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