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NLS2012039
May 24, 2012

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555-0001

Subject: Supplement to License Amendment Request for Implementing a 24-Month Fuel Cycle and Adoption of TSTF-493, Revision 4, Option A
Cooper Nuclear Station, Docket No. 50-298, License No. DPR-46

Reference:
1. Letter from Brian J. O'Grady, Nebraska Public Power District, to U.S. Nuclear Regulatory Commission, dated September 16, 2011, "License Amendment Request for Implementing a 24-Month Fuel Cycle and Adoption of TSTF-493, Revision 4, Option A" (NLS2011071)

2. Letter from Brian J. O'Grady, Nebraska Public Power District, to U.S. Nuclear Regulatory Commission, dated May 2, 2012, "Response to Request for Additional Information Regarding License Amendment Request for Implementing a 24-Month Fuel Cycle and Adoption of TSTF-493, Revision 4, Option A" (NLS2012033)

Dear Sir or Madam:

The purpose of this letter is for the Nebraska Public Power District (NPPD) to supplement its request that the Nuclear Regulatory Commission amend Facility Operating License DPR-46 to revise the Cooper Nuclear Station (CNS) Technical Specifications (TS) to support operation with 24-month fuel cycles, and incorporate Technical Specification Task Force (TSTF) Traveler TSTF-493, Revision 4, Option A (Reference 1). This supplement fulfills a commitment made in Reference 2 (Commitment Number NLS2012033-01) to revise the Surveillance Requirement (SR) 3.8.4.8 18-month frequency to 12 months, consistent with the Institute of Electrical and Electronics Engineers Standard 450; 1995.

SR 3.8.4.8 verifies that battery capacity is $\geq$ 90% of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test. Changing the SR frequency from 18 months (when the battery shows degradation or has reached 85% of expected life with capacity < 100% of manufacturers rating) to 12 months is conservative. NPPD has determined that the No Significant Hazards Consideration determination provided in Reference 1 remains bounding, and that this change therefore does not involve a significant hazard.

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NRR

Attachment 1 provides the inserted text to Attachment 1 of Reference 1. Attachment 2 provides the revised markup to TS Page 3.8-18. Attachment 3 provides the clean, retyped version of TS Page 3.8-18. Attachment 4 provides the conforming changes to TS Page B 3.8-50 for information.

The proposed supplemental TS change has been reviewed by the necessary safety review committees (Station Operations Review Committee and Safety Review and Audit Board). Amendments to the CNS Facility Operating License through Amendment 241 issued February 16, 2012, have been incorporated into this request. This request is submitted under affirmation pursuant to 10 CFR 50.30(b).

By copy of this letter and its attachments, the appropriate State of Nebraska official is notified in accordance with 10 CFR 50.91(b)(1). Copies are also being provided to the Nuclear Regulatory Commission Region IV office and the CNS Senior Resident Inspector in accordance with 10 CFR 50.4(b)(1).

There are no commitments made with this submittal. Should you have any questions concerning this matter, please contact Mike Boyce, CNS Strategic Initiatives Project Manager, at (402) 825-5100.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on: May 24, 2012
(Date)

Sincerely,

Brian J. O'Grady
Vice President – Nuclear
and Chief Nuclear Officer

BJO/wv

Attachments:
1. Supplemental Text for Attachment 1 of NLS2011071 "License Amendment Request for Implementing a 24-Month Fuel Cycle and Adoption of TSTF-493, Revision 4, Option A"
2. Proposed Technical Specification Revisions (Markup)
3. Proposed Technical Specification Revisions (Re-Typed)
4. Proposed Technical Specification Bases Revisions (Information Only)

cc: Regional Administrator w/Attachments
USNRC - Region IV

Cooper Project Manager w/Attachments
USNRC - NRR Project Directorate IV-1

Senior Resident Inspector w/Attachments
USNRC - CNS

Nebraska Health and Human Services w/Attachments
Department of Regulation and Licensure

NPG Distribution w/Attachments

CNS Records w/Attachments

ATTACHMENT 1

Supplemental Text for Attachment 1 of NLS2011071 "License Amendment Request for Implementing a 24-Month Fuel Cycle and Adoption of TSTF-493, Revision 4, Option A"

1.0 SUMMARY DESCRIPTION

This letter is a request to the Nuclear Regulatory Commission (NRC) to amend Facility Operating License DPR-46 for Cooper Nuclear Station (CNS). The requested change affects certain Technical Specification (TS) Surveillance Requirement (SR) frequencies that are specified as "18 months" by revising them to "24 months" in accordance with the guidance of Generic Letter (GL) 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991 (Reference 6.1). As a result of these SR changes, the Nebraska Public Power District (NPPD) is proposing two changes to TS Allowable Values. Also consistent with this guidance, certain other Administrative Controls TS changes are made:

- TS 5.5.2, "Systems Integrity Monitoring Program," testing frequencies are changed from 18 months to 24 months for integrated leak test requirements and the applicability of SRs 3.0.2 and 3.0.3.
- TS 5.5.7, "Ventilation Filter Testing Program (VFTP)," testing frequencies are changed from 18 months to 24 months.
- TS 5.5.13, "Control Room Envelope Habitability Program," pressure measurements are changed from 18 months to 24 months.

Additionally, the proposed amendment would revise the Technical Specifications by applying additional testing requirements to applicable instrument Functions, listed in Technical Specifications Task Force (TSTF) Improved Standard Technical Specifications (STS) Change Traveler TSTF-493, Revision 4, "Clarify Application of Setpoint Methodology for LSSS [limiting safety system settings] Functions," Attachment A, "Identification of Functions to be Annotated with the TSTF-493 Footnotes" (Reference 6.2). Attachment A contains Functions related to those variables that have a significant safety function, as defined in Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.36(c)(1)(ii)(A), thereby ensuring instrumentation will function as required to initiate protective systems or actuate mitigating systems at values equal to or more conservative than the point assumed in applicable safety analyses. These TS changes are made by the addition of individual surveillance Note requirements to applicable instrument Functions in accordance with Option A of TSTF-493, Revision 4. This change is consistent with Option A of NRC-approved Revision 4 to TSTF-493. The availability of this TS improvement was announced in the *Federal Register* on May 11, 2010 (75 FR 26294). ← Insert 1

As demonstrated in this submittal, the proposed changes do not adversely impact safety. With respect to the 24-month fuel cycle changes, the proposed changes are similar to the license amendment issued for River Bend Station on August 31, 2010. NPPD is requesting approval of this change by September 16, 2012, allowing an approximate one year review by the NRC. Approval by this date will support scheduling and planning the subsequent refueling outage based on 24-month surveillance frequency requirements for SRs that must be performed during plant shutdown conditions. Once approved, NPPD will implement the amendment within 60 days.

NPPD is proposing variations or deviations from the TS changes described in TSTF-493, Revision 4, or the NRC staff's model SE referenced in the Notice of Availability. Specifically, because the CNS TS are based on an earlier version of NUREG-1433, "Standard Technical Specifications – General Electric Plants, BWR/4," the level of detail and content of the CNS Bases for TS 3.3.1 is different from that provided in NUREG-1433, Revision 3, requiring modification of the Bases changes in TSTF-493-A, Revision 4, Option A. NPPD also notes that the Model SE refers to ISA-S67.04-1994 Part 2. NPPD does not use this standard in calculating safety-related setpoints. Rather, NPPD uses the NRC-approved General Electric Instrument Setpoint Methodology, which is in general agreement with ISA-S67.04-1982. The Model SE also refers to compliance with 10 CFR 50 Appendix A, General Design Criteria (GDC) 13 and 20. CNS design predated the issuance of 10 CFR 50 Appendix A. The CNS licensing basis is to the analogous 1967 draft GDCs.

Insert 2

2.2 Need for Changes

The shift from an 18-month fuel cycle to a 24-month fuel cycle is a CNS strategic initiative. It is expected to increase the CNS capacity factor throughout the plant's operating life, and reduce cumulative radiological occupational exposure due to less frequent refueling outages.

At a pre-submittal public meeting with the NRC on October 19, 2010 regarding the 24-month fuel cycle License Amendment Request (LAR), it was determined that it would be appropriate for NPPD to combine the 24-month fuel cycle TS changes with a LAR implementing TSTF-493, Revision 4, Option A. The background for this application is adequately addressed by the NRC Notice of Availability published in the *Federal Register* on May 11, 2010 (75 FR 26294).

2.3 Technical Specification Bases Changes

Revised TS Bases are provided in Attachment 4 for NRC information. These Bases revisions will be part of LAR implementation pursuant to TS 5.5.10, "Technical Specifications (TS) Bases Control Program," following issuance of the amendment.

3.0 TECHNICAL EVALUATION

3.1 Generic Letter 91-04 Changes

In NRC GL 91-04, the NRC provided generic guidance for evaluating a 24-month surveillance test interval for TS SRs that are currently performed at 18-month intervals. This section defines each step outlined by the NRC in the GL and provides a description of the methodology used by NPPD to complete the evaluation for each specific TS SR frequency being extended from 18 months to 24 months. The methodology utilized in the CNS drift analysis, as summarized in Enclosure 1, is similar to the methodology used for previous plant submittals, such as the River Bend

SR 3.8.4.5	Verify battery connection resistance meets the limits specified in Table 3.8.4-1.
~~SR 3.8.4.8~~	~~Verify battery capacity is ≥ 90% of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test [when battery shows degradation, or has reached 85% of expected life with capacity of < 100% of manufacturer's rating].~~

Insert 3

4.0 REGULATORY SAFETY ANALYSIS

NRC GL 91-04 provides generic guidance for evaluating a 24-month surveillance test interval for TS SRs. This request for a license amendment provides the CNS-specific evaluation of each step outlined by the NRC in GL 91-04, including necessary changes to TS allowable Values, and provides a description of the methodology used by NPPD to complete the evaluation for each specific TS SR being revised. NPPD has determined that the proposed changes do not require any exemptions or relief from regulatory requirements, other than the TS, and do not affect conformance with any draft GDC differently than described in the CNS USAR, as described below.

With respect to TSTF-493, Revision 4, Option A, a description of the proposed TS change and its relationship to applicable regulatory requirements were published in the Federal Register Notice of Availability on May 11, 2010 (75 FR 26294). NPPD has reviewed the NRC staff's model SE published as part of the Notice of Availability and concluded that the regulatory evaluation section is applicable to CNS.

4.1 Applicable Regulatory Requirements/Criteria

Construction of CNS predated the 1971 issuance of 10 CFR 50, Appendix A, "General Design Criteria for Nuclear Power Plants." CNS USAR Appendix F, "Conformance to AEC Proposed General Design Criteria," describes that CNS is designed to conform to the proposed GDC published in the July 11, 1967, *Federal Register*, except where commitments were made to specific 1971 GDC. It notes that the Atomic Energy Commission accepted CNS conformance with these proposed GDC.

The following is a discussion of the applicable regulations, the draft GDC from USAR Appendix F, and other applicable regulatory criteria, along with a discussion of continued conformance.

4.1.1 10 CFR 50.36, Technical Specifications

Regulatory requirement 10 CFR 50.36, "Technical Specifications," provides the content required in licensee TS. Specifically, 10 CFR 50.36(c)(3) requires that the TS include surveillance requirements. The proposed SR frequency changes and application of the TSTF-493 Notes continue to support the requirements of 10 CFR 50.36(c)(3) to assure that the necessary quality of systems and components is

INSERT 1

Finally, the proposed amendment would increase the frequency of SR 3.8.4.8 from 18 months to 12 months. This change is consistent with SR 3.8.6.6 of NUREG-1433, Rev. 3, "Standard Technical Specifications General Electric Plants, BWR/4," and is being made at NRC request.

INSERT 2

2.1.3 Other Changes

NPPD proposes to change the Frequency of SR 3.8.4.8 from 18 months to 12 months. SR 3.8.4.8 verifies that battery capacity is ≥ 90% of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test. Increasing the SR frequency from 18 months (when the battery shows degradation or has reached 85% of expected life with capacity < 100% of manufacturers rating) to 12 months is conservative, and consistent with the periodicity recommended in Institute of Electrical and Electronics Engineers (IEEE) Standard 450, 1995.

INSERT 3

3.3.3 SR 3.8.4.8 Frequency Change

NPPD proposes to change the Frequency of SR 3.8.4.8 from 18 months to 12 months. SR 3.8.4.8 verifies that battery capacity is ≥ 90% of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test. Increasing the SR frequency from 18 months (when the battery shows degradation or has reached 85% of expected life with capacity < 100% of manufacturers rating) to 12 months is conservative, and consistent with the periodicity recommended in IEEE Standard 450, 1995.

ATTACHMENT 2

Proposed Technical Specification Revisions (Markup)

Cooper Nuclear Station, Docket No. 50-298, DPR-46

Revised Technical Specification Pages

3.8-18

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.4.7	----------NOTES---------- 1. The modified performance discharge test in SR 3.8.4.8 may be performed in lieu of the service test in SR 3.8.4.7 once per 60 months. 2. This Surveillance shall not be performed in MODE 1, 2, or 3. However, credit may be taken for unplanned events that satisfy this SR. ----------	
	Verify battery capacity is adequate to supply, and maintain in OPERABLE status, the required emergency loads for the design duty cycle when subjected to a battery service test.	~~18~~ 24 months
SR 3.8.4.8	----------NOTE---------- This Surveillance shall not be performed in MODE 1, 2, or 3. However, credit may be taken for unplanned events that satisfy this SR. ----------	
	Verify battery capacity is ≥ 90% of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test.	60 months AND ~~18~~ 12 months when battery shows degradation or has reached 85% of expected life with capacity < 100% of manufacturer's rating AND 24 months when battery has reached 85% of the expected life with capacity ≥ 100% of manufacturer's rating

ATTACHMENT 3

Proposed Technical Specification Revisions
(Re-Typed)

Cooper Nuclear Station, Docket No. 50-298, DPR-46

Revised Technical Specification Pages

3.8-18

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.4.7	----------NOTES---------- 1. The modified performance discharge test in SR 3.8.4.8 may be performed in lieu of the service test in SR 3.8.4.7 once per 60 months. 2. This Surveillance shall not be performed in MODE 1, 2, or 3. However, credit may be taken for unplanned events that satisfy this SR. ----------	
	Verify battery capacity is adequate to supply, and maintain in OPERABLE status, the required emergency loads for the design duty cycle when subjected to a battery service test.	24 months
SR 3.8.4.8	----------NOTE---------- This Surveillance shall not be performed in MODE 1, 2, or 3. However, credit may be taken for unplanned events that satisfy this SR. ----------	
	Verify battery capacity is $\geq$ 90% of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test.	60 months AND 12 months when battery shows degradation or has reached 85% of expected life with capacity < 100% of manufacturer's rating AND 24 months when battery has reached 85% of the expected life with capacity $\geq$ 100% of manufacturer's rating

ATTACHMENT 4

Proposed Technical Specification Bases Revisions (Information Only)

Cooper Nuclear Station, Docket No. 50-298, DPR-46

Revised Technical Specification Bases Pages

B 3.8-50

INFORMATION ONLY

BASES

SURVEILLANCE REQUIREMENTS (continued)

A modified discharge test is a test of the battery capacity and its ability to provide a high rate, short duration load (usually the highest rate of the duty cycle). This will often confirm the battery's ability to meet the critical period of the load duty cycle, in addition to determining its percentage of rated capacity. Initial conditions for the modified performance discharge test should be identical to those specified for a service test. Either the battery performance discharge test or the modified performance discharge test is acceptable for satisfying SR 3.8.4.8; however, only the modified performance discharge test may be used to satisfy SR 3.8.4.8 while satisfying the requirements of SR 3.8.4.7 at the same time.

The acceptance criteria of $\geq$ 90% capacity for this Surveillance is conservative with respect to IEEE-450 (Ref. 7) and IEEE-485 (Ref. 10). These references recommend that the battery be replaced if its capacity is below 80% of the manufacturer's rating. A capacity of 80% shows that the battery rate of deterioration is increasing, even if there is ample capacity to meet the load requirements.

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The Frequency for this test is normally 60 months. If the battery shows degradation, or if the battery has reached 15 years (85% of its expected life) and capacity is < 100% of the manufacturer's rating, the Surveillance Frequency is reduced to ~~18~~ months. However, if the battery shows no degradation but has reached 85% of its expected life, the Surveillance Frequency is only reduced to 24 months for batteries that retain capacity $\geq$ 100% of the manufacturer's rating. Degradation is indicated, according to IEEE-450 (Ref. 7), when the battery capacity drops by more than 10% relative to its capacity on the previous performance tests or when it is below 90% of the manufacturer's rating. However, at Cooper Nuclear Station degradation is defined when the battery capacity drops by more than 5% relative to the capacity on the previous performance test or when the battery capacity $\leq$ 95% of the manufacturer's rating. This more restrictive definition of degradation is necessary to ensure that the decision can be made for battery replacement before the $\geq$ 90% capacity technical specification is violated. ~~The 60 month frequency is consistent with the recommendations in IEEE-450 (Ref. 7). The 18 month and 24 month Frequencies are derived from the recommendations in IEEE-450 (Ref. 7)~~

All these frequencies are consistent with the recommendations in IEEE-450 (Ref. 7).

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required DC electrical power subsystem from service, perturb the electrical distribution system, and challenge safety systems. Credit may be taken for unplanned events that satisfy the Surveillance.

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