



**Nebraska Public Power District**  
*Nebraska's Energy Leader*

50.90

NLS2002015  
January 21, 2002

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

Gentlemen:

Subject: Proposed License Amendment Related to Reactor Equipment Cooling (REC) Surge  
Tank Level Surveillance Requirement (SR) 3.7.3.1  
Cooper Nuclear Station, NRC Docket 50-298, DPR-46

In accordance with provisions of 10 CFR 50.4 and 50.90 the Nebraska Public Power District (NPPD) hereby submits a request for an amendment to License DPR-46 to change the Cooper Nuclear Station (CNS) Technical Specifications (TS). The proposed change will modify TS Surveillance Requirement (SR) 3.7.3.1 to improve consistency with CNS License Amendment No. 185, approved on March 13, 2001, and eliminate unnecessary restrictions regarding how the Reactor Equipment Cooling (REC) System surge tank level is monitored.

Attachment 2 provides a description and evaluation of the proposed TS change, an analysis of the issue of significant hazards consideration using the standards of 10 CFR 50.92, and of the criteria of 10 CFR 51.22 for environmental considerations. Attachment 3 provides a marked up page of the current TS to show the proposed change and Attachment 4 provides a typed version of the affected TS page with the proposed change incorporated.

NPPD hereby requests that the NRC approve and issue the TS amendment with a 30-day implementation time.

The proposed change has been reviewed by the necessary safety review committees and incorporates all amendments to the CNS Facility Operating License through Amendment 190 issued November 16, 2001. There are no page coordination issues with any other pending Technical Specification amendment request.

By copy of this letter and attachments the appropriate State of Nebraska official is being notified in accordance with 10 CFR 50.91(b)(1). Copies to the Region IV Office and the CNS Resident Inspector are also being sent in accordance with 10 CFR 50.4(b)(1).

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Adol

Should you have any questions concerning this matter, please contact Mr. Paul Fleming at (402) 825-2774.

Sincerely,



David L. Wilson  
Vice President of Nuclear Energy

/dw

Attachments:

1. Notarized Affidavit
2. NPPD's Evaluation
3. Markup of Technical Specification Pages
4. Retyped Technical Specification Pages

cc: Regional Administrator w/attachment  
USNRC - Region IV

Senior Project Manager  
USNRC - NRR Project Directorate IV-1

Senior Resident Inspector  
USNRC - Cooper Nuclear Station

Nebraska Health and Human Services  
Department of Regulation and Licensure

NPG Distribution w/o attachments

Records



## **NPPD's Evaluation**

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**Proposed License Amendment Related to Reactor Equipment Cooling  
Surge Tank Level Surveillance Requirement 3.7.3.1**

COOPER NUCLEAR STATION  
NRC DOCKET NO. 50-298, LICENSE DPR-46

Affected Technical Specification Pages

3.7-7

**1.0 Introduction**

This letter is a request to amend Operating License (OL) DPR-46 for Cooper Nuclear Station (CNS).

Prior to CNS Technical Specification (TS) Amendment No. 178 (Conversion to Improved Technical Specification Format) the Reactor Equipment Cooling (REC) System surveillance stated: "System head tank level shall be monitored - Daily." In revising this surveillance in Amendment No. 178 to the current requirement, Surveillance Requirement (SR) 3.7.3.1 now states: "Verify the water level in the REC surge tank is visible above the bottom of the gauge glass." The amendment proposed with this submittal will revise SR 3.7.3.1 to state: "Verify the REC surge tank water level is within limits."

**2.0 Description of Proposed Amendment**

CNS TS SR 3.7.3.1 currently requires verification that water level in the REC System surge tank is "visible above the bottom of the gauge glass." The requested change would revise the surveillance to improve consistency with CNS License Amendment No. 185, approved on March 13, 2001, and eliminate unnecessary restrictions regarding how the Reactor Equipment Cooling (REC) System surge tank level is monitored (i.e., monitoring level in the "gauge glass"). The proposed surveillance will revise SR 3.7.3.1 to state: "Verify the REC surge tank water level is within limits." This change continues to require monitoring of REC surge tank water level to support REC System operability.

As discussed below, the required acceptance limits referred to by this proposed SR were approved by the Nuclear Regulatory Commission (NRC) in License Amendment No. 185, dated March 13, 2001. The specific limit approved in Amendment No. 185 is that the REC surge tank shall have sufficient capacity to accommodate expected leakage from the system for 7 days. This acceptance limit is currently detailed in the Updated Safety Analysis Report (USAR), Section X-6.5.1 and implemented in procedures applicable to compliance with SR 3.7.3.1.

### **3.0 Background**

The REC System consists of two subsystems that provide cooling for those components which must function during postulated accidents and transients. Each REC subsystem has two centrifugal pumps discharging to one REC heat exchanger and capable of delivering demineralized water to the supported equipment.

A 550 gallon capacity surge tank, located at the highest point of the system, accommodates system volume changes, maintains static pressure in the REC subsystem, allows detection of gross leaks in the REC System and provides a means for adding makeup water. Makeup water to the REC System from the nonessential demineralized water storage tank is supplied by a connection from the demineralized water transfer pump to the surge tank. Surge tank level is maintained automatically by means of level switches and a control valve. Should failure of automatic system occur, a nonessential manual isolation and bypass is available for the level control valve. The surge tank is readily accessible during reactor operation for level adjustment if desired. Venting of the tank is directed to the reactor building.

During normal plant power operation, water leakage from the REC System is monitored by station procedures to ensure that this leakage does not exceed the maximum allowable leakage. The maximum allowable leakage is based on the criterion that the REC surge tank shall be capable of providing sufficient net positive suction head (NPSH) for the REC pumps in a post-loss of coolant accident (LOCA) condition for at least 7 days, without requiring any makeup during this 7-day period. Reference CNS License Amendment No. 185, dated March 13, 2001, which established this criterion. Station procedures implementing SR 3.7.3.1 provide assurance that REC surge tank level continues to support REC System operability.

In addition to simply correcting an inappropriate level of procedural detail (and unnecessary restriction) in the Technical Specifications, this change will allow maintenance activities on the gauge glass without resulting in a failure to meet SR 3.7.3.1. As currently presented, draining the gauge glass (e.g., for maintenance on the glass or drain valve) would result in not meeting the SR 3.7.3.1 acceptance criteria of "water level in the REC surge tank is visible above the bottom of the gauge glass." From a literal compliance perspective, the failure to meet SR 3.7.3.1 would result in declaring both subsystems of REC inoperable and entering the immediate shutdown requirements of Specification 3.7.1, Action B. From a reliability and practicality perspective, alternate means for appropriate monitoring of the REC surge tank level can be established without reliance on the gauge glass.

### **4.0 Regulatory Requirements and Guidance**

Surveillance Requirements, per 10 CFR 50.36(c)(3), are "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."

This assurance is presented with the proposed TS SR to “verify REC surge tank water level within limits.” As supported by the TS Bases for SR 3.7.3.1, the purpose of this Surveillance “verifies the water level in the REC surge tank to be sufficient for the proper operation of the REC System (system volume changes, static pressure in the loops, and potential leakage in the system are considered in determining this limit).” The necessary water volume to meet this requirement was established by License Amendment No. 185 and is detailed in the USAR, Section X-6.5.1. It requires that the REC surge tank shall have sufficient capacity to accommodate expected leakage from the system for 7 days.

The procedural details applicable for compliance with SR 3.7.3.1 impose two acceptance criteria for satisfactory performance: (1) an absolute minimum level requirement ( $\geq 5.25$ ” as referenced from the bottom of the sight glass) in the surge tank is required to be maintained; and (2) a requirement to monitor rate-of-level-change is imposed, which provides added conservatism to the minimum level requirements when monitored rates of change in surge tank level are greater than 5-5/8” in a 24 hour period.

Based on the above, it is appropriate to eliminate the specific detailed method of determining REC surge tank level (i.e., monitoring level in the “gauge glass”), and remove the reference to a non-applicable acceptance criterion (i.e., “above the bottom of the gauge glass”). Summarizing the above discussions:

- (1) Procedural methods are not deemed to be appropriate for TS SRs;
- (2) The criteria of 10 CFR 50.36(c)(3) for TS Surveillance Requirements are met with the proposed “verify the REC surge tank water level is within limits”; and
- (3) Any revision to this licensing basis requirement will be controlled by the change criteria in 10 CFR 50.59, “Changes, tests, and experiments”.

## 5.0 Technical Analysis

### Design Basis

The 550 gallon capacity surge tank, located at the highest point of the system, accommodates system volume changes, maintains static pressure in the REC subsystem, allows detection of gross leaks in the REC System and provides a means for adding makeup water. During normal plant power operation, REC surge tank water level is monitored by station procedures. The procedure utilized for compliance with SR 3.7.3.1 verifies that the water level in the surge tank is sufficient for the proper operation of the REC System and considers system volume changes, static pressure in the loops, and potential leakage in the system. The maximum allowable leakage is based on the criterion that the REC surge tank shall be capable of providing sufficient NPSH for the REC pumps in a post-LOCA condition for at least 7 days, without requiring any makeup during this 7-day period. This limitation was established by License Amendment No. 185, and is detailed in the USAR, Section X-6.5.1. Implementing these limitations for satisfactory performance of SR 3.7.3.1 is equivalent to the proposed wording of "Verify the REC surge tank water level is within limits."

### Risk Information

This change to the TSs does not revise any acceptance criteria assumed in the USAR, nor does it result in changes to normal plant operation or response to any off-normal event. As such, there is no adverse impact on core damage frequency or large early release frequency.

## 6.0 Regulatory Analysis

The existing SR 3.7.3.1 required use of the "gauge glass" to visually establish surge tank level inappropriately restricts the surveillance performance. While this method is an acceptable means of determining surge tank level, alternate methods could be established to determine surge tank level. Since the available makeup volume in the surge tank is the value of interest for evaluating REC System operability, and the method of determining this volume has no direct bearing on any safety function, this change will have no adverse impact on safety.

The Bases for SR 3.7.3.1 continue to describe verification of the surge tank level as "sufficient for the proper operation of the REC System (system volume changes, static pressure in the loops, and potential leakage in the system are considered in determining this limit)." The specific limit approved in License Amendment No. 185 is based on the REC surge tank having sufficient capacity to accommodate expected leakage from the system for 7 days. This acceptance limit is detailed in the USAR, Section X-6.5.1. The procedural details for implementing this USAR limit and for compliance with SR 3.7.3.1 continue to evaluate two acceptance criteria for satisfactory performance: (1) an absolute minimum level requirement ( $\geq 5.25$ "); and (2) a requirement to monitor rate-of-level-change, which dictates added conservatism to the minimum level requirements when monitored rates of change in surge tank level are greater than 5-5/8" in a