Nebraska Public Power District
Nebraska's Energy Leader

NLS2002073
June 9, 2002

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

Subject: Supplemental Information Related to License Condition 2.C.(6) Seismic Evaluation
Cooper Nuclear Station
NRC Docket No. 50-298, DPR-46

Reference: 1. Letter to U. S. Nuclear Regulatory Commission from D. Wilson (Nebraska Public Power District), dated February 26, 2002, "License Condition 2.C.(6) Seismic Evaluation."

The purpose of this letter is to provide supplemental information to the Nuclear Regulatory Commission (NRC) staff to facilitate their review of the Seismic Evaluation provided in Reference 1. In that letter, the Nebraska Public Power District (NPPD) indicated that outliers would be resolved either through modification or more detailed analyses. A teleconference was held with the NRC reviewers on May 8, 2002, to discuss several of the more detailed analytical approaches being considered. Factoring in the feedback of the NRC during that teleconference, NPPD intends to pursue the following courses of action:

1. NPPD is creating a new Turbine Building seismic response spectra to replace the more conservative use of 2 times the Safe Shutdown Earthquake (SSE) ground response spectrum specified in Engineering Evaluation (EE) 01-147 [Reference 1, Attachment 2, Section 4.4.3].

   The new spectra will be generated using the Soil-Structure Interaction analysis method and Regulatory Guide 1.60 ground response spectrum anchored to the CNS SSE peak ground acceleration for the site (0.2g). NPPD will develop the response spectra following the guidance in NUREG-0800 (Standard Review Plan), Sections 3.7.1, "Seismic Design Parameters" and 3.7.2, "Seismic System Analysis."

2. NPPD may use higher allowable load capacities, as needed on a case by case basis, for pipe support components (e.g., by using 0.9 S_y as permitted by the Updated Safety Analysis Report for the faulted condition) [Reference 1, Attachment 2, Section 4.5.4.2.2].

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NPPD provides the following justification for the use of higher allowable load capacities:

> The MSS-SP-58 component standard support capacities are based on the lesser of 5/8 S_y or $S_u/4$. For typical carbon steels used in these supports S_u is on the order of 1.6 S_y. Accordingly, $S_u/4$ will govern in most cases, and in terms of the material yield stress, the capacities are on the order of 1.6 S_y /4, or 0.4 S_y. For the seismic ruggedness screening at CNS, ASME Code Case N500, Level D limits were applied which permit an increase of 2 in the MSS-SP-58 capacities. The capacities generally used in the screening were consequently limited to values on the order of 0.8 S_y (1.6 S_y /4 x 2). However, 0.8 S_y is overly conservative compared with the NPPD design basis capacities for Level D loads (based on 0.9 S_y) and the AISC Code Part 2 allowables (approximately S_y). Therefore, the use of these allowable stress limits is acceptable for use in the design of standard support subcomponents.

The purpose of this course of action is to establish higher capacities for component standard supports such that the capacities to be used for component standard supports would be consistent with the capacities being used for structural steel supports (AISC Code Part 2) and the piping (approximately S_y also). The steps involved would be as follows:

a) Establish a capacity (and the technical basis) to be used for component standard supports. NPPD proposes to use 0.9 S_y to 1.0 S_y.

b) Review MSS-SP-58 (considering possible materials, etc.) and establish revised component by component capacities using the capacity criteria of a) above.

c) For complex geometries, such as clamps, limited application of Finite Element Analysis may be used to establish capacities.

d) Prepare a calculation that provides the revised capacities and the technical basis for the capacities.

It is anticipated that this effort would result in a 10% to 15% increase in the SSE Seismic capacities for component standard support assemblies, compared to the criteria previously used.

It should be noted that the NRC previously approved similar criteria (i.e., pipe support member stresses up to yield stress for the SSE loading case) for Monticello Nuclear Generating Plant under the "Safety Evaluation by the Office of Nuclear Reactor Regulation Related to Amendment No. 102 to Facility Operating License No. DPR-22 Northern States Power Company Monticello Nuclear Generating Plant Docket No. 50-263" (reference Page 69 of the Safety Evaluation). The Safety Evaluation states:

> For piping supports, the acceptance criteria used in the worst case support

evaluation are based on allowables of the AISC Steel Construction Manual, which will assure that the maximum stresses in the support members are at or slightly less than the material yield stress. This was found to be acceptable.

3. NPPD will use a concrete compressive strength value that is higher than the original specified design value for the Turbine Building. This increase in allowable strength will be used for determining concrete anchor capacities in the Turbine Building and for determining Turbine Building stiffness properties for generating Item 1 response spectra. This is based on a review and evaluation of the actual concrete compression test results for the Turbine Building. [Reference 1, Attachment 2, Section 4.5.4.2.2]

4. Based on Item 3 above, NPPD will use concrete anchor bolt capacities used in addressing IE Bulletin 79-02 for 5000 psi concrete with a factor of safety of 4 or as originally specified in EE 01-147 (e.g., SQUG Generic Implementation Procedure, Appendix C values). [Reference 1, Attachment 2, Section 4.5.4.2.2]

The specified courses of action will be incorporated into EE 01-147 and the corresponding calculations or engineering evaluations, as necessary.

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

Sincerely,

Michael T. Coyle
Site Vice President

/wrv

cc: Regional Administrator
USNRC Region IV

Senior Project Manager
USNRC - NRR Project Directorate IV-1

Senior Resident Inspector
USNRC

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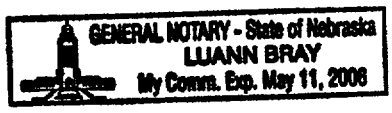
STATE OF NEBRASKA)
)
NEMAHA COUNTY)

Michael T. Coyle, being first duly sworn, deposes and says that he is an authorized representative of the Nebraska Public Power District, a public corporation and political subdivision of the State of Nebraska; that he is duly authorized to submit this correspondence on behalf of the Nebraska Public Power District; and that the statements contained herein are true to the best of his knowledge and belief.

Michael T. Coyle

Subscribed in my presence and sworn to before me this 9th day of June, 2002.

LuAnn Bray
NOTARY PUBLIC



Correspondence Number: NLS2002073

The following table identifies those actions committed to by Nebraska Public Power District (NPPD) in this document. Any other actions discussed in the submittal represent intended or planned actions by NPPD. They are described for information only and are not regulatory commitments. Please notify the NL&S Manager at Cooper Nuclear Station of any questions regarding this document or any associated regulatory commitments.

COMMITMENT	COMMITTED DATE OR OUTAGE
The specified courses of action will be incorporated into EE 01-147 and the corresponding calculations or engineering evaluations, as necessary.	None