Nebraska Public Power District

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March 25, 1988

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Gentlemen:

Subject: Proposed Change No. 55 to Technical Specifications
125 VDC Station Batteries
Cooper Nuclear Station
NRC Docket No. 50-298, DPR-46

In accordance with the applicable provisions specified in 10CFR50, Nebraska Public Power District requests that the Technical Specifications for Cooper Nuclear Station be revised to reflect replacement of the 125 VDC Station Batteries and Chargers during the upcoming refueling outage.

A discussion and the applicable revised Technical Specification pages are contained in the Attachment. The modifications to the Technical Specifications within this proposed change have been evaluated with respect to the requirements of 10CFR50.92. The results of the evaluations are also included in the attachment.

This proposed change incorporates all amendments to the CNS Facility Operating License through Amendment 117 issued February 23, 1988. By copy of this letter and attachment the appropriate State of Nebraska official is being notified in accordance with 10CFR50.91(b).

This change has been reviewed by the necessary Safety Review Committees and payment of $150 is submitted in accordance with 10CFR170.12.

In addition to the signed original, 37 copies are also submitted for your use. Copies to the NRC Region IV Office and the CNS

A001
w/check $150
#03-3500

Resident Inspector are also being sent in accordance with 10CFR50.4(b) (2). Should you have any questions or require additional information, please contact me.

Sincerely,

L. G. Kuncl
Nuclear Power Group Manager

LGK/grs:mh22/1
Attachment

cc: H. R. Borchert
Department of Health
State of Nebraska

NRC Regional Office
Region IV
Arlington, TX

NRC Resident Inspector Office
Cooper Nuclear Station

STATE OF NEBRASKA)
)ss
PLATTE COUNTY)

L. G. Kuncl, 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 request on behalf of Nebraska Public Power District: and that the statements contained herein are true to the best of his knowledge and belief.

L. G. Kuncl

Subscribed in my presence and sworn to before me this 25th day of March, 1988.

Colleen M. Kuta
NOTARY PUBLIC

GENERAL NOTARY-State of Nebraska
COLLEEN M. KUTA
My Comm. Exp. Aug. 4, 1989

Revised Technical Specifications
for 125 VDC Batteries

Revised Pages: 195
198

The existing 125 Volt batteries at Cooper Nuclear Station (CNS) are nearing the end of their design life. These batteries will be replaced during the 1988 refueling outage by lead-calcium batteries with a greater ampere-hour capacity. The existing 150 amp battery chargers for the 125 Volt System will also be replaced with 200 amp chargers to accommodate the increased battery capacity. The lead-calcium batteries require a higher float voltage and higher specific gravity than the existing batteries and will therefore only need 58 cells to provide adequate system voltage rather than the current 60 cells. Consequently, the District requests the following CNS Technical Specification revisions:

1. On page 195, in Specification 4.9.A.3.a.3, change the 125 VDC battery pilot cell voltage minimum to 2.15 Volt and the corrected specific gravity minimum to 1.195.

2. On page 195, in Specification 4.9.A.3.b.2, for each connected cell change the minimum cell voltage to 2.15 Volt and the corrected specific gravity minimum to 1.190 and add the requirement that the average specific gravity of all connected cells will be 1.200 minimum.

3. On page 195, in Specification 4.9.A.3.c change the 125 Volt battery charger capacity to 200 amperes.

4. On page 195 revise Specification 4.9.A.3.a to require either a battery service test or performance discharge test once each operating cycle.

5. On page 198, delete the last paragraph of the Bases and replace it with a new paragraph.

Safety Evaluation

The 125 VDC System is an essential control power source for various plant safety systems including emergency core cooling equipment, diesel generators, protective relays, trip devices, and annunciators. The implementation of this proposed change will provide for the replacement of the 125 VDC batteries and chargers with higher capacity lead-calcium batteries and chargers. The function and operation of the new batteries and chargers will be identical to that of the existing equipment. The new batteries and chargers are sized to supply all normal and emergency 125 VDC loads as determined by a recent DC load study. The proposed cell voltages and specific gravities have been verified by the battery vendor as being sufficient, with margin, to supply the design load profile. The new batteries and chargers will be procurred Class 1E Essential (Safety-Related) and all components will meet or exceed the quality standards for the existing components to be replaced.

The new batteries and chargers will meet all the safety design bases described in Section VIII 6.2 of the updated Safety Analysis Report (USAR). Installation of the new components will be in compliance with Class 1E

electrical separation requirement as set forth in IEEE Std. 308. The change will not violate the single failure criteria as described in USAR Section VIII 5.4.2 and IEEE Standard 308. All supports and components, including the battery racks will be designed to withstand the applicable seismic loads listed in the USAR for Class IS structures.

The batteries, chargers and associated equipment will be housed in a Class IS structure. Existing temperature studies for the 125 V battery and charger rooms encompass the new configuration. The replacement batteries will be Class 1E, qualified per IEEE Standard 535. The replacement chargers will be Class 1E, qualified per IEEE Standard 650.

Evaluation of this Revision with Respect to 10CFR50.92

The proposed amendment involves three changes:

1. Raising the cell minimum voltage from 2.0 Volt to 2.15 Volt and changing the minimum corrected specific gravity from 1.190 to 1.195 for the pilot cells and to specify a minimum of 1.200 specific gravity for the average of all connected cells. This is associated with replacing the present lead acid plate cell with lead-calcium cells.

2. Changing the 125 Volt battery charger capacity from 150 amperes to 200 amperes.

3. Requiring a battery service or performance discharge test once each operating cycle depending on battery status or time interval since the previous performance discharge test.

A. The enclosed Technical Specification change is judged to involve no significant hazards based on the following:

1. Does the proposed license amendment involve a significant increase in the probability or consequences of any accident previously evaluated?

Evaluation:

1. The proposed amendment will replace the existing 125 Volt DC batteries with higher capacity lead-calcium cells that require a higher floating voltage and different specific gravity values. The capability to carry out the intended function and operation of the 125 Volt DC System will be unaffected and the system will continue to satisfy its safety design bases as stated in the Updated Safety Analysis Report. With the proposed minimum cell voltage and corrected specific gravities, the battery will have adequate capacity to supply the required emergency loads following a design basis accident. The system performance will be improved as the existing batteries are nearing the end of their design life. The proposed amendment will not involve a significant increase in the probability or consequences of any accident previously evaluated.

2. The proposed amendment will replace the existing 125 Volt battery charger with one qualified to the same criteria. It will have increased capacity to restore the new 125 Volt battery to full charge from a totally discharged condition while carrying the normal station steady state DC

load as stated in the USAR safety design basis. The proposed amendment does not involve a significant increase in the probability or consequences of any accident previously evaluated.

3. The proposed amendment will change the surveillance testing on the 125 Volt battery to require a battery service or a performance discharge test once every operating cycle depending on battery status or time interval since the previous performance discharge test. The present requirement is to perform a performance discharge test once every operating cycle. The new requirements more closely follow the guidance given in NUREG 0123, Rev. 3, Standard Technical Specifications for General Electric Boiling Water Reactors, and will assure the battery capacity is adequate to supply the required 125 Volt DC loads in the time period following the design basis accident. The proposed amendment will not involve a significant increase in the probability or consequences of any accident previously evaluated.

2. Does the proposed license amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

Evaluation:

1. The proposed amendment will change the minimum cell voltages and specific gravities to reflect the replacement of the existing 125 Volt batteries with new lead-calcium cells. The operation and function of the 125 Volt DC System will be unaffected and remain as described in the CNS USAR. The proposed amendment will not create the possibility of a new or different kind of accident from any previously evaluated.

2. The proposed change will replace the current 125 Volt battery charger with one of a greater capacity to service the new 125 Volt batteries. The operation and function of the charger will remain as described in the USAR and will not create the possibility of a new or different kind of accident from any previously evaluated.

3. The proposed amendment would revise the surveillance testing for the 125 Volt station batteries but will not change the operation or function of the 125 Volt DC System as described in the USAR. The proposed amendment will not allow any new mode of plant operation or create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed amendment involve a significant reduction in the margin of safety?

Evaluation:

1. The new 125 Volt batteries will have greater ampere-hour capacity to safeguard the station in the event of a design basis accident until off site AC power sources are restored. The proposed amendment does not involve a significant reduction in the margin of safety.

2. The new charger will have a greater charging capacity to restore the battery to full charge from a fully discharged condition while carrying normal steady state DC loads. It will not involve a significant reduction in the margin of safety.

3. The proposed amendment will revise the surveillance testing on the 125 Volt station batteries and will not affect the ability of the 125 Volt DC System to perform its intended function during normal or accident conditions. The proposed amendment does not involve a significant reduction in the margin of safety.

B. Additional basis for proposed no significant hazards consideration determination:

The Commission has provided guidance concerning the application of the standards for determining whether a significant hazards consideration exists by providing certain examples (48FR14870). This change is considered to fit the example: "(ix) A repair or replacement of a major component or system important to safety, if the following conditions are met: (1) The repair or replacement process involves practices which have been successfully implemented..., and (2) The repaired or replacement component or system does not result in a significant change in its safety function..." It is the District's belief that this change request falls within the guidance provided.