



Nebraska Public Power District

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July 2, 1981

Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555



Subject: Request for Exemption from 10CFR50.49 and
Appendix R - "Fire Protection"
Cooper Nuclear Station
NRC Docket No. 50-298, DPR-46

Reference: 1) Letter from J. M. Pilant to H. R. Denton
Dated March 18, 1981, same subject

Dear Mr. Denton:

The Nuclear Regulatory Commission issued on November 19, 1980 (45FR76602) the final rule regarding fire protection programs for operating nuclear power plants. The revisions to 10CFR50.48 and Appendix R to 10CFR50 required Nebraska Public Power District to backfit requirements as set forth in Sections III.G (Fire Protection of Safe Shutdown Capability) and III.J (Emergency Lighting), or request an exemption from the Appendix R requirements. Reference 1 was written to request per 10CFR50.48(c)(6) an exemption from the requirements of Appendix R Section III.G.2 for the safe shutdown capabilities in existence at CNS.

This letter is written to provide the additional information committed to in Reference 1.

Section III.G - Reexamination of Fire Protection of Safe Shutdown Capability

The original Fire Hazards Analysis for Cooper Nuclear Station evaluated postulated fires in the various fire zones within the plant and with conservative assumptions made for fire loading, it was shown that in such an event the plant could be placed in a safe shutdown mode. The Staff's Safety Evaluation Report, issued as Amendment 56 to the facility license, also determined that redundant safe shutdown systems and components are "either separated from each other or protected by suppression systems such that a fire will not affect redundant equipment, and therefore a sufficient number of systems and components will be available to perform the shutdown function following a fire."

The issue of Safe Shutdown Capability was recently finalized by Amendment 66 (November 21, 1980) to the facility license and was considered adequate by the NRC staff. The November 24, 1980 letter

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from D. G. Eisenhower to All Licensees stated that CNS did not have any "open" items concerning fire protection features.

A reexamination of the original Fire Hazards Analysis for CNS was recently completed which compared the protection provided for redundant trains within the various areas to the original protection requirements and the requirements of Appendix R, Section III.G. Only one area did not meet the intent of the protection requirements of Appendix R, Section III.G. The one area where protection needed upgrading was the Cable Expansion Room on the 918' elevation of the Controlled Corridor. This area contains redundant safety-related cables running between the Cable Spreading Room on the 918' elevation of the Control Building and the northeast corner of the 903' elevation of the Reactor Building. Currently, the Cable Expansion Room is protected by an automatic sprinkler system; however, fire detection is not provided. To upgrade this area to the requirements of Appendix R, Section III.G, smoke detection will be provided within this room by November 17, 1981.

This reexamination has assured that the alternative features at CNS provide equivalent protection to the requirements of Section III.G.2.

Section III.G - Fire Protection of Safe Shutdown Circuits and Associated Non-Safety Circuits

As committed to in Reference 1, each cable in the fire zones of areas containing safety systems was reviewed in accordance with the criteria established in our original Fire Hazard Analysis to cover the associated non-safety circuits, and this review was extended for compliance with requirements of Appendix R. Our review indicates that the associated non-safety circuits at Cooper Nuclear Station are in compliance with all of the applicable requirements set forth for safety circuits in the original Fire Hazard Analysis. Also, we find that, subject to certain justifications, the associated non-safety circuits are in compliance with the requirements of NRC 10CFR50.48 Appendix R, Section III.G.2 and that the associated non-safety circuits will not prevent necessary operation of safety circuits, due to hot shorts, open circuits, or shorts to ground.

The engineering review of the associated non-safety circuits involved individual examination of approximately one million cable sections. A cable run in a fire area was considered a separate cable section for purposes of this review. Cable sections were identified as associated non-safety circuits because of association with safety system circuits due to a common power source, connection to equipment common to a safety circuit or being within proximity of a safety circuit.

We have found that all circuits, both power and control instrumentation, are subdivided and separated into redundant trains with no crossover from one train or division to the other train or division. Any possible hazard arising from internal faults in an associated non-safety circuit could affect only its counterpart division in the safety system. The other safety division will be unaffected and available for safe shutdown. Also, fire retardant cable meeting or exceeding requirements of IEEE 383 is used throughout the plant.

In addition, the following specific design features apply to the associated non-safety circuits:

1. Power circuits to non-safety equipment originating in a safety power source are provided with undervoltage trips as well as series overcurrent trips. The power supply to non-safety equipment will be disconnected from a safety system power source upon loss of normal plant power. The non-safety connection will remain disconnected from the safety power source during all safe shut-down emergencies.
2. All power cables, both non-safety and safety, which are routed through common areas are in separate rigid steel conduits. The rigid steel conduit will contain a fire due to internal faults in the non-safety power cable inside that conduit. Hence, physical proximity of associated non-safety power circuits does not cause a safety concern.
3. All non-safety control and instrumentation cables are divided into two redundant trains and are separated from each other by separate raceways or individually routed in rigid steel conduit; and where routed in raceways, these cables are routed with their counterpart safety division.

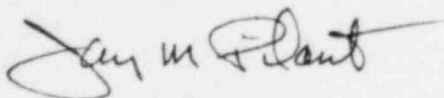
Section III.J - Emergency Lighting

Emergency lighting units with at least an 8-hour battery power supply will be provided by November 17, 1981 in all areas needed for operation of safe shutdown equipment and in access and egress routes thereto, subject to availability of equipment and material and plant operating conditions permitting.

Nebraska Public Power District maintains the request that the NRC grant an exemption per 10CFR50.48(c)(6) for the safe shutdown capabilities (III.G) already in existence, and toll the implementation schedule for item III.G.

If additional clarification is required regarding this request, please do not hesitate to contact me.

Sincerely,



Jay M. Pilant
Director of Licensing
and Quality Assurance

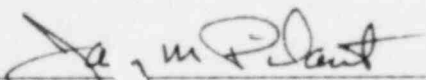
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Enclosure

cc: Mr. Thomas A. Ippolito
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Harold R. Denton
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STATE OF NEBRASKA)
) ss
PLATTE COUNTY)

Jay M. Pilant, 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 information on behalf of Nebraska Public Power District; and that the statements in said application are true to the best of his knowledge and belief.



Jay M. Pilant

Subscribed in my presence and sworn to before me this 2nd day of July, 1981.



NOTARY PUBLIC

My Commission expires Oct. 14, 1984.

