

5/23/86

Docket No.: 50-263

Mr. D. M. Musolf
Nuclear Support Services Department
Northern States Power Company
410 Nicollet Mall - 8th Floor
Minneapolis, Minnesota 55401

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Dear Mr. Musolf:

SUBJECT: EXEMPTION FROM REQUIREMENTS OF APPENDIX R TO 10 CFR
PART 50, SECTION III.G

Re: Monticello Nuclear Generating Plant

The Commission has issued the enclosed exemption to certain requirements of Section III.G of Appendix R to 10 CFR Part 50 in response to your letter dated April 5, 1983 and supplemented on February 21, 1986. This exemption removes the requirement to install a fixed fire suppression system in the Monticello Nuclear Generating Plant control room. The Commission has granted this request as described in the enclosed exemption.

An Environmental Assessment and Finding of No Significant Impact was published in the Federal Register on June 3, 1986 (51 FR 19911).

This exemption is being forwarded to the Office of the Federal Register for publication.

Sincerely,

Original signed by:

Rajender Auluck, Project Manager
BWR Project Directorate #1
Division of BWR Licensing

Enclosures:

- 1. Exemption
- 2. Safety Evaluation

cc w/enclosures:
See next page

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Mr. D. M. Musolf
Northern States Power Company

Monticello Nuclear Generating Plant

cc:

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

In the Matter of

NORTHERN STATES POWER COMPANY
 (Monticello Nuclear Generating
 Plant)

}
 } Docket No. 50-263
 }

EXEMPTION

I.

The Northern States Power Company (the licensee) is the holder of Facility Operating License No. DPR-22 which authorizes operation of the Monticello Nuclear Generating Plant. This license provides, among other things, that it is subject to all rules, regulations and Orders of the Commission now or hereafter in effect.

The facility is a boiling water reactor at the licensee's site located in Wright County, Minnesota.

II.

On November 19, 1980, the Commission published a revised Section 10 CFR 50.48 and a new Appendix R to 10 CFR 50 regarding fire protection features of nuclear power plants (45 FR 76602). The revised Section 50.48 and Appendix R became effective on February 17, 1981. Section III.G of Appendix R contains fifteen subsections, lettered A through O, each of which specifies requirements for fire protection of the equipment used for safe shutdown by means of separation and barriers (III.G.2). If the requirements for

separation and barriers could not be met in an area, alternative safe shutdown capability, independent of that area and equipment in that area, was required (III.G.3).

III.

By letter dated April 5, 1983 and supplemented on February 21, 1986, the licensee requested an exemption from the requirements of Section III.G.3 to the extent that it requires the installation of a fixed fire suppression system in the control room. In support of this request the licensee notes the existing fire protection features, the fact that the control room is continuously manned and the potentially adverse impact on equipment and personnel occupancy of an inadvertent initiation of a fixed suppression system.

By letter dated February 21, 1986, the licensee provided information relevant to the "special circumstances" finding required by revised 10 CFR 50.12(a) (see 50 FR 50764). According to the licensee, granting of this exemption as defined in Section 50.12(a)(2)(iv) would result in benefit to the public health and safety that compensates for any decrease in safety that may result from granting this exemption. The control room contains sensitive electrical components necessary for the control of the plant under normal and design basis accident conditions and introduction of water, Halon or CO₂ by inadvertent initiation will adversely impact the operation of these electrical components. This can lead to spurious actuations of or loss of plant equipment to respond when called upon. The introduction of water, Halon or CO₂ due to inadvertent activation would also reduce the effectiveness of the operators in responding to an accident or during normal operation.

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The licensee states that the decrease to the public health and safety which would result from the granting of the exemption is insignificant for the following reasons:

- The control room is continuously manned in accordance with the plant technical specifications.
- There is only a light combustible loading in the room.
- Transient combustible loadings are controlled by administrative procedures.
- Portable carbon dioxide and Halon fire extinguishers are located in the control room and a manual hose station is immediately available outside the entrance.
- Isolation dampers are provided in the ventilation ducts to maintain habitability.
- The design of the control panels is such that metal barriers are installed between the required safe shutdown system functions in the control room.
- Ten ionization detectors exist to provide early detection of possible fires.
- An alternate shutdown system is being installed during the 1986 refueling outage to permit the shutdown of the plant independent of any control room equipment.

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Therefore, the licensee concludes the net effect of this exemption is a benefit to the public health and safety that compensates for any decrease in safety that may result from the granting of this exemption request. The staff concludes that "special circumstances" exist for the licensee's requested exemption in that application of the regulation in these particular circumstances is not necessary to achieve the underlying purpose of Appendix R to 10 CFR Part 50. (See 10 CFR 50.12(a)(2)(iv).)

The intent of Section III.G is to require an acceptable level of fire safety to assure the maintenance of safe shutdown capability. Because the control room is continuously manned and has alternate shutdown capability that is physically and electrically independent of the control room, there is reasonable assurance that a fire would be promptly extinguished. Therefore, the installation of a fixed fire suppression system will not significantly increase the level of fire protection in the control room and the exemption requested by the licensee should be granted.

IV.

Accordingly, the Commission has determined pursuant to 10 CFR 50.12(a), that (1) the exemption as described in Section III is authorized by law, will not present an undue risk to the public health and safety, and is consistent with the common defense and security, and (2) special circumstances are present for this exemption in that application of the regulation in these

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particular circumstances is not necessary to achieve the underlying purposes of Appendix R to 10 CFR 50. Therefore, the Commission hereby grants the exemption request identified in Section III above.

Pursuant to 10 CFR 50.32 the Commission has determined that the granting of this exemption will not result in any significant environmental impact (51 FR 19911, June 3, 1986).

The Safety Evaluation dated June 19, 1986, related to this action and the above referenced submittals by the licensee are available for public inspection at the Commission's Public Document Room, 1717 H Street, NW, Washington, D.C. 20555, and at the Environmental Conservatory Library, Minneapolis Public Library, 300 Nicollet Mall, Minneapolis, Minnesota 55401.

A copy of the Safety Evaluation may be obtained upon written request to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of BWR Licensing.

This exemption is effective upon issuance.

Dated at Bethesda, Maryland this 19th day of June 1986.

FOR THE NUCLEAR REGULATORY COMMISSION


R. Wayne Houston, Acting Director
Division of BWR Licensing
Office of Nuclear Reactor Regulation



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING EXEMPTION REQUEST FROM APPENDIX R TO 10 CFR PART 50
NORTHERN STATES POWER COMPANY
MONTICELLO NUCLEAR GENERATING PLANT
DOCKET NO. 50-263

1.0 Introduction

By letter dated April 5, 1983, the licensee requested approval of an exemption from the technical requirements of Section III.G of Appendix R to 10 CFR Part 50 in the control room. Section III.G.2 of Appendix R requires that one train of cables and equipment necessary to achieve and maintain safe shutdown be maintained free of fire damage by one of the following means:

- a. Separation of cables and equipment and associated non-safety circuits of redundant trains by a fire barrier having a 3-hour rating. Structural steel forming a part of or supporting such fire barriers should be protected to provide fire resistance equivalent to that required of the barrier;
- b. Separation of cables and equipment and associated non-safety circuits of redundant trains by a horizontal distance of more than 20 feet with no intervening combustibles or fire hazards. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area, and;
- c. Enclosure of cables and equipment and associated non-safety circuits of one redundant train in a fire barrier having a 1-hour rating. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area.

If these conditions are not met, Section III.G.3 requires an alternative shutdown capability independent of the fire area of concern. It also requires that a fixed suppression system be installed in the fire area of concern if it contains a large concentration of cables or other combustibles. These alternative requirements are not deemed to be equivalent; however, they provide equivalent protection for those configurations in which they are accepted.

Because it is not possible to predict the specific conditions under which fires may occur and propagate, the design basis protective features are specified in the rule rather than the design basis fire. Plant specific features may require protection different from the measures specified in Section III.G. In such a case, the licensee must demonstrate by means of a detailed fire hazards analysis that existing protection or existing protection in conjunction with proposed modifications will provide a level of safety equivalent to the technical requirements of Section III.G of Appendix R.

In summary, Section III.G is related to fire protection features for ensuring that systems and associated circuits used to achieve and maintain safe shutdown are free of fire damage. Fire protection configurations must either meet the specific requirements of Section III.G, or an alternative fire protection configuration must be justified by a fire hazard analysis.

The staff's general criteria for accepting an alternative fire protection configuration are the following:

- ° The alternative assures that one train of equipment necessary to achieve hot shutdown from either the control room or emergency control stations will be free of fire damage
- ° The alternative assures that fire damage to at least one train of equipment necessary to achieve cold shutdown will be limited such that it can be repaired within a reasonable time (minor repairs with components stored on-site).
- ° Modifications required to meet Section III.G would not enhance fire protection safety above that provided by either existing or proposed alternatives.
- ° Modifications required to meet Section III.G would be detrimental to overall facility safety.

The licensee requested approval for an exemption from the technical requirements of Section III.G.3 in the control room to the extent that it requires that a fixed fire suppression system be installed in an area for which an alternate shutdown capability has been provided.

The control room contains control and instrumentation cable and components essential for station operation and for shutdown of the plant under all operating conditions. Redundant systems necessary for shutdown are located within close proximity within the control console.

The principal fire hazard consists of combustible cable insulation and varying quantities of "Class A" combustibles such as paper.

Existing fire protection includes ionization-type smoke detectors and manual fire fighting equipment. In the above-referenced letter the licensee committed to install an alternate shutdown capability that is electrically and physically independent of the control room.

The licensee justified the exemption on the basis of the limited fire hazard, the constant manning by control room operators, the existing fire protection and the proposed alternate shutdown capability.

2.0 Evaluation

The technical requirements of Section III.G.3 are not met in the control room because this area lacks a fixed fire suppression system.

The staff was concerned that in the event of a fire, safe shutdown could not be achieved and maintained and that fire propagation would occur beyond the control room itself. However, the licensee will provide an alternate shutdown capability that is physically and electrically independent of the control room and that conforms with the provisions of Section III.L of Appendix R. On this basis we have reasonable assurance that a fire in the control room would not prevent safe plant shutdown.

If a fire were to occur, it would be discovered by the control room operators or detected by the existing fire detectors. The staff expects the fire to be extinguished in its initial stages using portable extinguishers before significant fire spread and damage occurred. If the fire was not immediately put out by the control room operators, the fire brigade would complete extinguishment using manual fire fighting equipment. Pending arrival of the brigade, the fire-rated walls and ceiling provide reasonable assurance that fire spread beyond the control room would not occur. Therefore, a fixed fire suppression system is not necessary to assure safe shutdown or to prevent fire propagation beyond the area of origin.

3.0 Conclusion

Based on our evaluation, we conclude that the licensee's alternate fire protection configuration achieves an equivalent level of fire safety to that attained by compliance with Section III.G.3. Therefore, the licensee's request for exemption from the requirement for a fixed fire suppression system in the control room should be granted.

Principal Contributor: Dennis Kubicki

Date: June 19, 1986