

UNITED STATES ATOMIC ENERGY COMMISSION

NORTHERN STATES POWER COMPANY
Monticello Nuclear Generating Plant

Docket 50-263

REQUEST FOR AMENDMENT TO
OPERATING LICENSE NO. DPR- 22

(License Amendment Request Dated November 15, 1974)

Northern States Power Company, a Minnesota corporation, requests authorization for changes to the Technical Specifications as shown on the attachments labeled Exhibit A and Exhibit B. Exhibit A describes the proposed changes along with reasons for the change. Exhibit B is a set of Technical Specification pages incorporating the proposed changes.

This request contains no restricted or other defense information.

NORTHERN STATES POWER COMPANY

By Leo J. Wachter
Leo J. Wachter
Vice President, Power Production &
System Operation

On this 15 day of November, 1974, before me a notary public in and for said County, personally appeared Leo J. Wachter, Vice President, Power Production & System Operation, and first being duly sworn acknowledged that he is authorized to execute this document in behalf of Northern States Power Company, that he knows the contents thereof and that to the best of his knowledge, information and belief, the statements made in it are true and that it is not interposed for delay.

John A. Smith
JOHN A. SMITH

Notary Public, Hennepin County, Minn.
My Commission Expires March 3, 1977

EXHIBIT A

MONTICELLO NUCLEAR GENERATING PLANT
DOCKET NO. 50-263

LICENSE AMENDMENT REQUEST DATED November 15, 1974

PROPOSED CHANGES TO TECHNICAL SPECIFICATIONS
APPENDIX A OF PROVISIONAL OPERATING
LICENSE NO. DPR-22

Pursuant to 10CFR50.59 and 10CFR50.46 the holders of Provisional Operating License DPR-22 hereby propose the following changes to Appendix A, Technical Specifications.

1. TABLE OF CONTENTS, LIST OF FIGURES, AND LIST OF TABLES

PROPOSED CHANGE

Substitute the revised Table of Contents, List of Figures, and List of Tables as contained in Exhibit B, attached, for the current pages 1 through vii.

REASON FOR CHANGE

This change is needed to bring the Table of Contents, List of Figures, and List of Tables up-to-date and correct a number of minor typographical errors.

2. 3.1 BASES

PROPOSED CHANGE

- a. In line eight of the fourth paragraph on page 38, change "switches" to "switches."
- b. Delete the last sentence in the second paragraph on page 39.

2. 3.1 BASES (cont)

- c. On page 40, TS 3.1 Bases, replace the second paragraph and the first sentence of the third paragraph with the following:

The high reactor pressure, high drywell pressure, and reactor low water level scrams are required for all modes of plant operation unless the reactor is subcritical and depressurized. They are, therefore, required to be operational for all modes of reactor operation except in the "Refuel" mode with the reactor subcritical and reactor temperature less than 212°F as allowed by Note

The scram discharge volume high level is required for all modes of plant operation and is required to be operational for all modes. However, it is permissible for this trip to be bypassed in the "Refuel" mode.

REASON FOR CHANGE

Change (a) corrects a typographical error. Change (b) is needed to delete an erroneous statement concerning the air ejector off-gas monitors. Installation of the modified off-gas system changes the mode of operation of the air ejector monitors under certain conditions. Operation of these monitors is described correctly in the 3.2 Bases.

Note 3 of Table 3.1.1 (Technical Specification 3.1.A), states the minimum scram requirements when the reactor is in the "Refuel" mode with the reactor subcritical and reactor water temperature less than 212°F. The Bases fail to recognize this fact and the present wording contradicts the Specification. Change (c) proposes wording which makes the Bases compatible with the Specification without changing the original intent.

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3. TABLE 3.2.3

PROPOSED CHANGE

In the notes for Table 3.2.3 on page 59, make the following changes under "**Allowable Bypass Conditions:"

- a. In item (c), change "...rod blocks may be passed below..." to "...rod blocks may be bypassed below...."
- b. In item (d), change "...IRM switches are above Position 7" to "...IRM switches are above Position 6."

REASON FOR CHANGE

Change (a) corrects a typographical error.

The SRM Upscale rod block is not necessary when the IRM's are above range 1. SRM Upscale rod blocks occur when IRM indication reaches the middle of range 7. Change (b) would allow the block to be bypassed on range 7 and eliminate the need to prematurely switch the IRM's to range 8. Also, additional margin will be provided to allow for possible future changes in IRM and SRM calibration.

4. SPECIFICATION 3.3.B.3.(b)

PROPOSED CHANGE

In the second sentence of this specification on page 78, delete the words, "After May 1, 1974."

REASON FOR CHANGE

This phrase is no longer necessary.

5. 3.3/4.3 BASES

PROPOSED CHANGE

In the third sentence of the paragraph on page 85A, change "...pilot scram solenoid deenergized." to "...pilot scram solenoid is deenergized."

REASON FOR CHANGE

This change corrects a typographical error.

6. 3.4/4.4 A BASESPROPOSED CHANGE

In line 8 of the first paragraph on page 94, add after "...reactor water" the phrase "...and dilution from the water in the cooldown circuit."

REASON FOR CHANGE

This change clarifies a generic question concerning the basis for the minimum boron concentration limit. Dilution from water in the cooldown circuit is considered in arriving at the limit.

7. SPECIFICATION 3.5.B.1.aPROPOSED CHANGE

Change this specification to read:

- a. The HPCI shall be capable of delivering 3000 gpm into the reactor vessel for the reactor pressure range of 1120 psig to 150 psig.

REASON FOR CHANGE

The HPCI design specification of 1135 psia to 165 psia was erroneously converted to 1150 psig and 150 psig instead of the correct values of 1120 psig and 150 psig. 1120 psig is the design value and sufficient overlap with maximum reactor pressure is assured by setting the relief valves at 1080 psig as specified in Specification 4.6.E.1.a.

8. SPECIFICATION 3.5.C.4PROPOSED CHANGE

Change "...at any one time provide that ..." to "...at any one time provided that...."

REASON FOR CHANGE

This change corrects a typographical error.

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9. SPECIFICATION 3.7

PROPOSED CHANGE

- a. On page 147, TS 3.7.A.5.a, replace the words, "coolant pressure is above 110 psig in the power operating condition" with the words, "is in the run mode."
- b. On page 151, TS 3.7.D.1, replace the words, "During reactor power operating conditions" with the words "Whenever the reactor is in the run mode."
- c. On page 152, TS 3.7.D.2, replace the words "reactor power operation" with the words "reactor operation in the run mode."
- d. On page 152, TS 3.7.D.3, replace the phrase "Specification 3.7.D" with the phrase "Specification 3.7.D.1 and 3.7.D.2."
- e. On page 150, TS 3.7.C.1, change "whan" to "when."

REASON FOR CHANGE

Power Operation is defined in Specification 1.0 as "any operation with the mode switch in the "Start-Up" or "Run" position with the reactor critical and above 1% rated thermal power." The 1% power level is downscale on the Average Power Range Monitors; therefore, the very accurate APRM system is not a useful indicator for showing compliance with these specifications. Instead, the Intermediate Power Range Monitors must be used. The IRM system, being designed for startup information (as opposed to power range operation), derives information from fewer in-core detectors. This introduces spatial effects which lead to an overly conservative measurement of bulk core power.

A number of Technical Specifications such as 3.7.A.5.a, 3.7.D.1 and 3.7.D.2 place limitations on operations based on the definition of power operation. One means of improving our ability to verify compliance with such specifications is to re-define power operation as 5% versus 1% of rated thermal power. We believe such a change can be justified and supported. For expediency, proposed changes (a), (b), and (c) take the more direct approach of addressing only those specifications where normal plant operating practices are on the verge of a "technical" violation merely because of difficulty in verifying compliance. Placing the reactor in the run mode is a decisive action which leaves no question of compliance to the Specifications. The reactor is put in the run mode shortly after bringing the APRM's on scale. While this occurs at a power level somewhat greater than 1%, the relative increase in the probability of a loss of coolant accident during the short time involved is insignificant.

9. SPECIFICATION 3.7REASON FOR CHANGE (cont)

Following a startup and prior to a shutdown, Specification 3.7.A.5.b allows 24 hours between "placing the reactor in the run mode" and requiring the containment to be inerted to less than 5% oxygen. This is an exception to Specification 3.7.A.5.a which presently requires less than 5% oxygen when "the reactor coolant pressure is above 110 psig in the power operating condition." In this case, change (a) makes the two requirements consistent in addition to improving our ability to demonstrate compliance.

Change (d) corrects an obvious inconsistency in the wording of Specification 3.7.D.3.

Change (e) corrects a typographical error.

10. SPECIFICATION 3.8.A.9PROPOSED CHANGE

Change "... 8.A.3 and 3.8.A.5..." to read "3.8.A.3 and 3.8.A.5..." in Specification 3.8.A.9 on page 170.

REASON FOR CHANGE

This change corrects a typographical error.

11. SPECIFICATION 3.9.B

PROPOSED CHANGE

- a. Change the first paragraph of Specification 3.9.B on page 181 to read:

When the mode switch is in Run, the availability of electric power shall be as specified in 3.9.A, except as specified in 3.9.B.1, 3.9.B.2, 3.9.B.3, and 3.9.B.4 or the reactor shall be placed in the cold shutdown condition within 24 hours.

- b. Change Specification 3.9.B.4 on page 183 to read:

4. Station Battery System

If one of the two 125 V battery systems or the 250 V battery system is made or found to be inoperable for any reason, an orderly shutdown of the reactor will be initiated and the reactor water temperature shall be reduced to less than 212°F within 24 hours unless such battery systems are sooner made operable.

REASON FOR CHANGE

Change (a) restores the phrase "...or the reactor shall be placed in the cold shutdown condition within 24 hours." These words were dropped from earlier versions and are required to specify the action that must be taken in the event of unavailability of sources of electrical power.

Change (b) is more restrictive than the current specification and would require a shutdown if one 125 V or the 250 V battery system is unavailable. Loss of one 125 V or the 250 V battery system would not prevent safe shutdown of the plant, however the 125 V systems supply safeguards control power and the 250 V system is needed for operation of HPCI and the emergency turbine lube oil pumps. Plant operation without one of the battery systems is not prudent because of the interface with safety related systems and the loss of redundancy in plant control systems.

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12. 4.1 BASES

PROPOSED CHANGE

Delete the "(2)" at the end of the second sentence in the third paragraph on page 43. Delete reference (2) at the bottom of page 45.

REASON FOR CHANGE

The letter currently listed as reference (2) is undocketed correspondence and cannot be used as a reference.

13. TABLE 4.2.1

PROPOSED CHANGE

- a. Change the calibration frequency for RCIC Steam Line High Temperature from "Once 3/months" to "Once/3 months."
- b. Change Note 2 on page 63 to read:

Calibrate prior to normal shutdown and start-up and thereafter check once per shift and test once per week until no longer required. Calibration of this instrument prior to normal shutdown means adjustment of channel trips so that they correspond, within acceptable range and accuracy, to a simulated signal injected into the instrument (not primary sensor). In addition, IRM gain adjustment will be performed, as necessary, in the APRM/IRM overlap region.

REASON FOR CHANGE

Change (a) corrects a typographical error.

The SRM and IRM rod blocks are bypassed in the run mode. Calibration can only be carried as far as the instrument channel trip. Change (b) corrects the Table to take note of this fact.

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14. SPECIFICATION 4.3.B.3 (b)

PROPOSED CHANGE

Change Specification 4.3.B.3 (b) on page 78 to read:

- (b) If the rod worth minimizer is inoperable while the reactor is in the startup or run mode below 10% rated thermal power and the second independent operator or engineer is being used, he shall verify that all rod positions are correct prior to commencing withdrawal or insertion of each rod group.

REASON FOR CHANGE

This surveillance requirement was also intended to be applicable during reactor shutdown. Addition of the words, "...or insertion..." extends the surveillance requirement to include all rod motion during the stated conditions.

15. SPECIFICATION 4.4.A.2.b

PROPOSED CHANGE

Change Specification 4.4.A.2.b on page 89 to read:

- b. Explode one of two primer assemblies manufactured in the same batch to verify proper function. Then install, as a replacement, the second primer assembly in the explosion valve of the system tested for operation.

REASON FOR CHANGE

At the time this specification was originally discussed with the AEC-DL staff, it was thought that the two explosive charges associated with each valve were independent devices which could be exploded individually. Actually, the replacement charges come in the form of a single primer assembly. The primer assembly contains two charges, either of which firing alone will result in valve operation. Explosion of one primer assembly is therefore the explosion of two charges. The proposed change is consistent with Specification 4.4.A.2.a, which requires testing of only one valve each operating cycle, and the present bases which state, "A test of explosive charges from one manufacturing batch is made to assure that the replacement charges for the tested system are satisfactory."

10. SPECIFICATION 4.6.B.3PROPOSED CHANGE

Change Specification 4.6.B.3 on page 116 to read:

"A neutron flux dosimeter and material samples shall be installed in the reactor vessel adjacent to the vessel wall at the core midplane level. The material sample program shall conform to ASTM E185-66. The neutron flux dosimeter shall be removed during the first refueling outage and tested to verify or adjust the calculated values of neutron fluence used to determine the vessel NDTT (Nil Ductility Transition Temperature) from Fig. 4.6.1."

REASON FOR CHANGE

Three baskets of NDTT surveillance samples and one neutron flux dosimeter were installed in the Monticello reactor pressure vessel.

Removal and analysis of the neutron flux dosimeter, not a sample basket as stated in the current Specifications, is used to verify or adjust calculated values of neutron flux. The activation materials used in the dosimeter give the most accurate flux measurements if removed after about one year of operation. The dosimeter was removed and analyzed during the 1973 Spring refueling outage.

The current specification now requires removal of the first sample basket during the third refueling outage. No conclusive data can be obtained by testing these samples before the fast neutron fluence approaches 10^{18} n/cm² which corresponds to a "worst case" shift of 50°F in NDTT. This will not occur before approximately 18 years of plant operation based on analysis of the neutron flux dosimeter.

ASTM E185-66 does not specify sample withdrawal intervals. Withdrawal of sampler, however, is recommended at three separate times with one sample being removed near the end of the vessel's design life. Withdrawal intervals of 15 years and 30 years, with the third sample basket held in standby, now appears to be preferable to the tentative withdrawal schedule presented on page 4-2.6A of the Monticello FSAR. This schedule also satisfies the intent of later revisions of ASTM E185 and 10CFR50, Appendix H.

17. SPECIFICATION 4.6.C.1.a

PROPOSED CHANGE

Change Specification 4.6.C.1.(a) on page 116 to read:

- 1.(a) sample of the reactor coolant shall be taken at least every 96 hours when reactor coolant temperature is above 212°F and analyzed for radioactive iodine of I-131 through I-135.

REASON FOR CHANGE

Specification 4.6.C.1(a) now requires a gross beta analysis every 96 hours while the Limiting Condition for Operation corresponding to Surveillance Requirement 4.6.C.1.(a) establishes a maximum limit on radioiodine. There is currently no limit on gross beta activity and no basis for such a limit.

This change substitutes a radioiodine analysis for the beta analysis and is consistent with the Technical Specifications for similar boiling water reactor installations. The iodine limit is based on a steam line break accident outside containment and is therefore only applicable for coolant temperature above 212°F.

18. SPECIFICATION 4.7.B.1.b

PROPOSED CHANGE

Change the first sentence of Specification 4.7.B.1.b on page 148 to read, "Within 30 days of the beginning of each refueling outage, whenever a filter is changed"

REASON FOR CHANGE

This change is needed to provide a reasonable degree of flexibility in scheduling tests of Standby Gas Treatment System filters.

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19. SPECIFICATION 4.8.A.4

PROPOSED CHANGE

Change Specification 4.8.A.4 on page 170 to read:

4. Radioiodine and radioactive particulates with half lives greater than 5 days released from the off-gas stack and reactor building vent shall be continuously sampled. Station records of release of all radioiodine 131 and particulates with half-lives greater than 8 days shall be maintained on the basis of all stack and vent cartridges counted. The charcoal cartridges shall be counted weekly when the measured release rate of radioiodine 131 activity is less than the limit of Specification 3.8.A.4; otherwise stack cartridges shall be counted daily if the stack I-131 contribution exceeds 50% of the limit of Specification 3.8.A.4 and vent cartridges shall be counted daily if the vent I-131 contribution exceeds 50% of the limit of Specification 3.8.A.4. The particulate filters shall be counted weekly when the measured release rate of particulate radioactivity with half-lives greater than 8 days is less than the limit of Specification 3.8.A.6; otherwise stack filters shall be counted daily if the stack particulate contribution exceeds 50% of the limit of Specification 3.8.A.6 and vent filters counted daily if the vent particulate contribution exceeds 50% of the limit of Specification 3.8.A.6.

REASON FOR CHANGE

Specification 4.8.A.4 currently requires accelerated counting of all vent and stack charcoal cartridges or particulate filters whenever the limits of Specifications 3.8.A.4 or 3.8.A.6, respectively, are reached. We believe the intent of this Specification was originally to require accelerated surveillance at only the point of increased iodine or particulate releases.

The Technical Specification for other boiling water reactor installations in which the release limits for stack and vent releases are separated require daily charcoal cartridge or particulate filter counting only for those cartridges or filters associated with the point of increased release. Iodine and particulate activity from the plant stack and vent arise from different sources and utilize vastly different values of X/Q. It is not reasonable to assume that reaching a release limit due to increased activity from one source necessitates accelerated surveillance of both sources.

Determination of both stack and vent iodine and particulate release rates involves counting 21 charcoal cartridges and 21 particulate filters. The present wording of Specification 4.8.A.4 can require up to 30 additional hours of counting time each week without contributing significantly to the iodine or particulate release data.

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20. SPECIFICATION 4.8.C

PROPOSED CHANGE

Delete Specification 4.8.C.2.e on page 172.

REASON FOR CHANGE

This monitor calibration requirement is repeated from Specification 4.8.C.1 on page 171.