UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

NORTHERN STATES POWER COMPANY

DOCKET NO. 50-263

MONTICELLO NUCLEAR GENERATING PLANT

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 101
License No. DPR-22

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Northern States Power Company (the licensee) dated June 19, 1998, as supplemented July 1, 1998, and including information in the licensee's May 5, 1997, letter, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraphs 2.C.2 and 2.C.8 of Facility Operating License No. DPR-22 are hereby amended to read as follows:

C.2 Technical Specifications

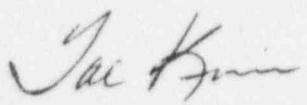
The Technical Specifications contained in Appendix A, as revised through Amendment No. 101 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

C.8 Additional Conditions

The Additional Conditions contained in Appendix C, as revised through Amendment No. 101 , are hereby incorporated into this license. The licensee shall operate the facility in accordance with the Additional Conditions.

3. This license amendment is effective as of the date of issuance. Implementation of the license conditions shall be as specified in Appendix C.

FOR THE NUCLEAR REGULATORY COMMISSION



Tae Kim, Senior Project Manager
Project Directorate III-1
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Office of Nuclear Reactor Regulation

Attachments: 1 Changes to the Technical Specifications
2. Page C-2 of Appendix C

Date of Issuance: August 28, 1998

Amendment Number	Additional Condition	Implementation Date
98	Update Section 5.2 of the Updated Safety Analysis Report by incorporating Figure E.2 of the NSP submittal dated July 16, 1997.	Within 90 days from the date of plant startup from the current maintenance outage, or November 1, 1997, whichever is later.
98	Process a 10 CFR 50.59 evaluation to change the EOP definition of adequate core cooling to 2/3 core height. The corresponding EOP changes and the required operator training shall also be completed. Final implementations shall be completed when all the 10 CFR 50.59 evaluation requirements are satisfied.	Within 180 days from the date of plant startup from the current maintenance outage, or February 1, 1998, whichever is later.
101	Conduct an independent evaluation of the testing methodology and the testing configuration of the EFT [emergency filtration testing] system by HEPA and charcoal filter testing experts. This evaluation shall include review of the exceptions to the ASME N510-1989 testing standard listed in Exhibit F of NSP's June 19, 1998, letter. The evaluation results shall be reported to the NRC.	Within 9 months of the date of issuance of Amendment No. 101.
101	Initiate appropriate modifications to the EFT system to comply with the ASME N510-1989 testing standard or obtain NRC approval for continued use of the exceptions.	Within 24 months of the date of issuance of Amendment No. 101.

ATTACHMENT TO LICENSE AMENDMENT NO. 101

FACILITY OPERATING LICENSE NO. DPR-22

DOCKET NO. 50-263

Revise Appendix A Technical Specifications by removing the pages identified below and inserting the attached pages. The revised pages are identified by amendment number and contain vertical lines indicating the areas of change.

REMOVE	INSERT
123	123
148	148
229w	229w
229x	229x
229y	229y
229z	229z

3.0 LIMITING CONDITIONS FOR OPERATION	4.0 SURVEILLANCE REQUIREMENTS
4. The reactor vessel head bolting studs shall not be under tension unless the temperature of the vessel head flange and the head are $\geq$70°F.	4. When the reactor vessel head studs are under tension and the reactor is in the Cold Shutdown Condition, the reactor vessel shell flange temperature shall be permanently recorded.
C. Coolant Chemistry	C. Coolant Chemistry
1. The steady state radioiodine concentration in the reactor coolant shall not exceed 0.25 microcuries of I-131 dose equivalent per gram of water.	1. (a) A sample of reactor coolant shall be taken at least every 96 hours and

Bases 3.6/4.6 (Continued):

C. Coolant Chemistry

In the event of a steam line rupture outside the drywell, calculations show the resultant radiological dose at the exclusion area boundary to be less than 10% of the dose guidelines of 10 CFR 100. This dose was calculated on the basis of the radioiodine concentration limit of 2 μCi of I-131 dose equivalent per gram of water. In the event of a postulated high energy line break in the RWCU system outside the drywell, calculations show the resultant radiological dose at the exclusion area boundary to be less than 10% of the dose guidelines of 10 CFR 100. This dose was calculated on the basis of the radioiodine concentration limit of 0.25 μCi of I-131 dose equivalent per gram of water.

The reactor coolant sample will be used to assure that the limit of Specification 3.6.C.1 is not exceeded. The radioiodine concentration would not be expected to change rapidly during steady state operation over a period of 96 hours. In addition, the trend of the radioactive gaseous effluents, which is continuously monitored, is a good indicator of the trend of the radioiodine concentration in the reactor coolant. When a significant increase in radioactive gaseous effluents is indicated, as specified, an additional reactor coolant sample shall be taken and analyzed for radioactive iodine.

Whenever an isotopic analysis is performed, a reasonable effort will be made to determine a significant percentage of those contributors representing the total radioactivity in the reactor coolant sample. Usually at least 80 percent of the total gamma radioactivity can be identified by the isotopic analysis.

It has been observed that radioiodine concentration can change rapidly in the reactor coolant during transient reactor operations such as reactor shutdown, reactor power changes, and reactor startup if failed fuel is present. As specified, additional reactor coolant samples shall be taken and analyzed for reactor operations in which steady state radioiodine concentrations in the reactor coolant indicate various levels of iodine releases from the fuel. Since the radioiodine concentration in the reactor coolant is not continuously measured, reactor coolant sampling would be ineffective as a means to rapidly detect gross fuel element failures. However, some capability to detect gross fuel element failures is inherent in the radiation monitors in the off-gas system and on the main steam line.

Materials in the primary system are primarily 304 stainless steel and zircaloy. The reactor water chemistry limits are established to prevent damage to these materials. The limit placed on chloride concentration is to prevent stress corrosion cracking of the stainless steel.

3.0 LIMITING CONDITIONS FOR OPERATION	4.0 SURVEILLANCE REQUIREMENTS
b. When both filter trains of the control room emergency filtration system are inoperable, restore at least one train to operable status within 24 hours or be in hot shutdown within the next 12 hours following the 24 hours and reduce the reactor coolant water temperature to below 212°F within the following 24 hours.	
2. Performance Requirements	2. Performance Requirement Test
a. Periodic Requirements	The in-place performance testing of HEPA filter banks and charcoal adsorber banks shall be conducted in accordance with Sections 10 and 11 of ASME N510-1989 with exceptions described in Section 6.7 of the USAR. The carbon sample test for methyl iodide shall be conducted in accordance with ASTM D 3803-1989.
(1) The results of the in-place DOP tests at 1000 cfm (±10%) shall show ≤1% DOP penetration on each individual HEPA filter and shall show ≤0.05% DOP penetration on the combined HEPA filters.	a. At least once per 720 hours of system operation; or once per operating cycle, but not to exceed 18 months, whichever occurs first; or following painting, fire, or chemical release while the system is operating that could contaminate the HEPA filters or charcoal adsorbers, perform the following:
(2) The results of in-place halogenated hydrocarbon tests at 1000 cfm (±10%) shall show ≤0.05% penetration on the combined charcoal banks.	(1) In-place DOP test the HEPA filter banks.
(3) The results of laboratory carbon sample analysis shall show ≤0.4% methyl iodide penetration when tested at 30°C and 95% relative humidity.	(2) In-place test the charcoal adsorber banks with halogenated hydrocarbon tracer.
	(3) Remove one carbon test canister from the charcoal adsorber. Subject this sample to a laboratory analysis to verify methyl iodide removal efficiency.
	(4) Initiate from the control room 1000 cfm (±10%) flow through both trains of the emergency filtration treatment system.

3.0 LIMITING CONDITIONS FOR OPERATION	4.0 SURVEILLANCE REQUIREMENTS
b. The system shall be shown to be operable with:	b. At least once per operating cycle, but not to exceed 18 months, the following conditions shall be demonstrated for each emergency filtration system train:
(1) Combined filter pressure drop ≤8 inches water.	(1) Pressure drop across the combined filters of each train shall be measured at 1000 cfm (±10%) flow rate.
(2) Inlet heater power output 5kw ± 10%.	(2) Operability of inlet heater at nominal rated power shall be verified.
(3) Automatic initiation upon receipt of a high radiation signal.	(3) Verify that on a simulated high radiation signal, the train switches to the pressurization mode of operation and the control room is maintained at a positive pressure with respect to adjacent areas at the design flow rate of 1000 cfm (±10%).
3. Post Maintenance Requirements	3. Post Maintenance Testing
a. After any maintenance or testing that could affect the HEPA filter or HEPA filter mounting frame leak tight integrity, the results of the in-place DOP tests at 1000 cfm (±10%) shall show ≤1% DOP penetration on each individual HEPA filter and shall show <0.05% DOP penetration on the combined HEPA filters.	a. After any maintenance or testing that could affect the leak tight integrity of the HEPA filters, perform in-place DOP tests on the HEPA filters.
b. After any maintenance or testing that could affect the charcoal adsorber leak tight integrity, the results of in-place halogenated hydrocarbon tests at 1000 cfm (±10%) shall show ≤0.05% penetration on the combined charcoal adsorber banks.	b. After any maintenance or testing that could affect the leak tight integrity of the charcoal adsorber banks, perform halogenated hydrocarbon tests on the charcoal adsorbers.

Bases 3.17:

A. Control Room Ventilation System

The Control Room Ventilation System provides air conditioning and heating as required to maintain a suitable environment in the main control room and portions of the first and second floors of the Emergency Filtration Train (EFT) building. The system is designed to maintain a nominal temperature of 78°F dry bulb in the main control room in the summer and a nominal temperature of 72°F in the winter. During normal operation, the CRV system recirculates the air in the control room envelope as needed. During a high radiation event, the Control Room Ventilation System continues to operate, and the Control Room Emergency Filtration Train system will start automatically to pressurize the control room protective envelope. The Emergency Filtration Train system can also be started manually.

All toxic substances which are stored onsite or stored/shipped within a 5 mile radius of the plant have been analyzed for their affect on the control room operators. It has been concluded that the operators will have at least two minutes to don protective breathing apparatus before incapacitation limits are exceeded. For toxic substance which are transported on highways within 5 miles of the plant, it has been determined that the probability of a release from the plant due to incapacitation of the operators caused by a spill is sufficiently low that this scenario may be excluded. Protection for toxic chemicals is provided through operator training.

B. Control Room Emergency Filtration System

The Control Room Emergency Filtration System assures that the control room operators will be adequately protected against the effects of radioactive leakage which may by-pass secondary containment following a loss of coolant accident or radioactive releases from a steam line break accident. The system is designed to slightly pressurize the control room on a radiation signal in the ventilation air. Two completely redundant trains are provided.

Each train has a filter unit consisting of a prefilter, HEPA filters, and charcoal adsorbers. The HEPA filters remove particulates from the Control Room pressurizing air and prevent clogging of the iodine adsorbers. The charcoal adsorbers are installed to remove any radioiodines from the pressurizing air. The verification of performance parameters combined with the qualification testing conducted on new filters and adsorbers provide a high level of assurance that the Emergency Filtration System will perform as predicted in reducing doses to plant personnel below those level stated in Criterion 19 of Appendix A to 10 CFR 50.

Dose calculations have been performed for the Control Room Emergency Filtration System which show that, assuming 85% standby gas treatment system adsorption and filtration efficiency and 98% control room emergency filtration system adsorption and filtration efficiency and radioiodine plateout, whole body and organ doses remain within NRC guidelines.

Bases 4.17:

A. Control Room Ventilation System

Control room air temperature is checked each shift to ensure that the continuous duty rating for the instrumentation and equipment cooled by this system is not exceeded.

Demonstrating automatic isolation of the control room using simulated accident signals assures control room isolation under accident conditions.

B. Control Room Emergency Filtration System

Air flow through the filters and charcoal adsorbers each month assures operability of the system.

The frequency of tests and sample analysis is necessary to show that the HEPA filters and charcoal adsorbers can perform as evaluated. The charcoal adsorber tray is installed which can accommodate a sufficient number of representative adsorber sample modules for estimating the amount of penetration the system adsorbs though its life. Sample modules will be installed with the same batch characteristics as the system adsorbent and will be withdrawn for the methyl iodide removal efficiency tests. Each module withdrawn will be replaced or blocked off. In-place testing procedures will be established utilizing applicable sections of ASME N510-1989 as described in Section 6.7 of the USAR. If test results are unacceptable, all adsorbent in the train is replaced. Any HEPA filters found defective are replaced.

Pressure drop across the combined HEPA filters and charcoal adsorbers of less than or equal to 8 inches of water at the system design flow rate will indicate that the filters and adsorbers are not clogged by excessive amounts of foreign matter.

Demonstrating automatic control room pressurization using simulated accident signals assures control room pressurization with respect to adjacent areas under accident conditions.