

NORTHERN STATES POWER COMPANY

DOCKET NO. 50-263

MONTICELLO NUCLEAR GENERATING PLANT

AMENDMENT TO PROVISIONAL OPERATING LICENSE

Amendment No. 23
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 April 1, 1975, 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 1;
 - 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.

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2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment.
3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Original Signed by:
 Dennis L. Ziemann

Dennis L. Ziemann, Chief
 Operating Reactors Branch #2
 Division of Operating Reactors

Attachment:
 Changes to the Technical
 Specifications

Date of Issuance: 3/1 1976

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ATTACHMENT TO LICENSE AMENDMENT NO. 23
PROVISIONAL OPERATING LICENSE NO. DPR-22
DOCKET NO. 50-263

Replace existing pages listed below of the Technical Specifications with attached revised and additional pages. Changes on these pages are denoted by marginal lines.

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Add Page 149a
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3.0 LIMITING CONDITIONS FOR OPERATION

6. If the specifications of 3.7.A cannot be met, the reactor shall be placed in a cold shutdown condition within 24 hours.

B. Standby Gas Treatment System

1. Two separate and independent standby gas treatment system circuits shall be operable at all times when secondary containment integrity is required, except as specified in sections 3.7.B.1.(a) and (b).
 - a. After one of the standby gas treatment system circuits is made or found to be inoperable for any reason, reactor operation and fuel handling is permissible only during the succeeding seven days, provided that all active components in the other standby gas treatment system shall be demonstrated to be operable within 2 hours and daily thereafter. Within 36 hours following the 7 days, the reactor shall be placed in a condition for which the standby gas treatment system is not required in accordance with Specification 3.7.C.1.(a) through (d).

4.0 SURVEILLANCE REQUIREMENTS

B. Standby Gas Treatment System

1. At least once per month, initiate from the control room 3500 cfm (+10%) flow through both circuits of the standby gas treatment system. In addition:
 - a. Within 2 hours from the time that one standby gas treatment system circuit is made or found to be inoperable for any reason and daily thereafter for the next succeeding seven days, initiate from the control room 3500 cfm (+10%) flow through the operable circuit of the standby gas treatment system.

3.0 LIMITING CONDITIONS FOR OPERATION

- b. If both standby gas treatment system circuits are not operable, within 36 hours the reactor shall be placed in a condition for which the standby gas treatment system is not required in accordance with Specification 3.7.C.1.(a) through (d).

2. Performance Requirement

a. Periodic Requirements

- (1) The results of the in-place DOP tests at 3500 cfm (+10%) on HEPA filters shall show <1% DOP penetration.
- (2) The results of in-place halogenated hydrocarbon tests at 3500 cfm (+10%) on charcoal banks shall show <1% penetration.
- (3) The results of laboratory carbon sample analysis shall show >90% methyl iodine removal efficiency when tested at 130°C, 95% R.H.

4.0 SURVEILLANCE REQUIREMENTS

- b. If both standby gas treatment system circuits are not operable within 7 days, within 36 hours verify that the conditions of Specification 3.7.C.1.(a) through (d) are satisfied.

2. Performance Requirement Tests

- 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 in any ventilation zone communicating with the system while the system is operating that could contaminate the HEPA filters or charcoal adsorbers, perform the following:
 - (1) In-place DOP test the HEPA filter banks.
 - (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.

3.0 LIMITING CONDITIONS FOR OPERATION

- b. The system shall be shown to be operable with:
- (1) Combined filter pressure drop \leq 6 inches water.
 - (2) Inlet heater power output \geq 15kW.
 - (3) Automatic initiation upon receipt of following inputs:
 - (a) High drywell pressure, or
 - (b) Reactor building ventilation plenum high radiation, or
 - (c) Refueling floor high radiation.

3. Post Maintenance Requirements

- 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 3500 cfm (+10%) on HEPA filters shall show \leq 1% DOP penetration.
- b. After any maintenance or testing that could affect the charcoal adsorber leak tight integrity, the results of in-place halogenated hydrocarbon tests at 3500 cfm (+10%) on charcoal adsorber banks shall show \leq 1% penetration.

4.0 SURVEILLANCE REQUIREMENTS

- b. At least once per operating cycle, but not to exceed 18 months, the following conditions shall be demonstrated for each standby gas treatment system:
- (1) Pressure drop across the combined filters of each standby gas treatment system circuit shall be measured at 3500 cfm (+10%) flow rate.
 - (2) Operability of inlet heater at nominal rated power shall be verified.
 - (3) Automatic initiation of each standby gas treatment system circuit.

3. Post Maintenance Testing

- 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 leak tight integrity of the charcoal adsorber banks, perform halogenated hydrocarbon tests on the charcoal adsorbers.

Bases Continued:

3.7 A. Primary Containment

system, leak inspections are scheduled during startup periods, when the primary system is at or near rated operating temperature and pressure. The 24-hour period to provide inerting is judged to be sufficient to perform the leak inspection and establish the required oxygen concentration. The primary containment is normally slightly pressurized during periods of reactor operation. Nitrogen used for inerting could leak out of the containment but air could not leak in to increase oxygen concentration. Once the containment is filled with nitrogen to the required concentration, no monitoring of oxygen concentration is necessary. However, at least once a week the oxygen concentration will be determined as added assurance.

B. Standby Gas Treatment System and C. Secondary Containment

The secondary containment is designed to minimize any ground level release of radioactive materials which might result from a serious accident. The reactor building provides secondary containment during reactor operation, when the drywell is sealed and in service; the reactor building provides primary containment when the reactor is shutdown and the drywell is open, as during refueling. Because the secondary containment is an integral part of the complete containment system, secondary containment is required at all times that primary containment is required except, however, for initial fuel loading prior to initial power testing.

The standby gas treatment system is designed to filter and exhaust the reactor building atmosphere to the chimney during secondary containment isolation conditions, with a minimum release of radioactive materials from the reactor building to the environs. One standby gas treatment system circuit is designed to automatically start upon containment isolation and to maintain the reactor building pressure at the design negative pressure so that all leakage should be in-leakage. Should one circuit fail to start, the redundant alternate standby gas treatment circuit is designed to start automatically. Each of the two circuits has 100% capacity. Only one of the two standby gas treatment system circuits is needed to cleanup the reactor building atmosphere upon containment isolation. If one system is found to be inoperable, there is no immediate threat to the containment system performance. Therefore, reactor operation or refueling operation may continue while repairs are being made. If neither circuit is operable, the plant is placed in a condition that does not require a standby gas treatment system.

Bases Continued:

3.7 B. Standby Gas Treatment System, and C. Secondary Containment

While only a small amount of particulates are released from the primary containment as a result of the loss of coolant accident, high-efficiency particulate filters before and after the charcoal filters are specified to minimize potential particulate release to the environment and to prevent clogging of the charcoal adsorbers. The charcoal adsorbers are installed to reduce the potential release of radioiodine to the environment. The in-place test results should indicate a system leak tightness of less than 1% bypass leakage for the charcoal adsorbers using halogenated hydrocarbon and a HEPA filter efficiency of at least 99% removal of DOP particulates. Laboratory carbon sample test results indicate a radioactive methyl iodide removal efficiency for expected accident conditions. Operation of the standby gas treatment circuits significantly different from the design flow will change the removal efficiency of the HEPA filters and charcoal adsorbers. If the performance requirements are met as specified, the calculated doses would be less than the guidelines stated in 10 CFR 100 for the accidents analyzed.

D. Primary Containment Isolation Valves

Double isolation valves are provided on lines penetrating the primary containment. Closure of one of the valves in each line would be sufficient to maintain the integrity of the pressure suppression system. Automatic initiation is required to minimize the potential leakage paths from the containment in the event of a loss-of-coolant accident. Details of the isolation valves are discussed in Sections 5.2 and 7.2 of the FSAR.

(3) "Nuclear Safety Program Annual Progress Report for Period Ending December 31, 1966, ORNL-4071."

Bases Continued:

4.7 B. Standby Gas Treatment System, and C. Secondary Containment

Initiating reactor building isolation and operation of the standby gas treatment system to maintain the design negative pressure within the secondary containment provides an adequate test of the reactor building isolation valves and the standby gas treatment system. Periodic testing gives sufficient confidence of reactor building integrity and standby gas treatment system operational capability.

The frequency of tests and sample analysis are necessary to show that the HEPA filters and charcoal adsorbers can perform as evaluated. Standby gas treatment system in-place testing procedures will be established utilizing applicable sections of ANSI N510-1975 standard as a procedural guideline only. Redundant heaters in the standby gas treatment system room prevent moisture buildup on the adsorbent. If painting, fire, or chemical release occurs such that the HEPA filter or charcoal adsorber could become contaminated from the fumes, chemicals, or foreign materials, the same tests and sample analysis should be performed as required for operational use. Replacement adsorbent should be qualified according to the guidelines of Regulatory Guide 1.52 Revision 1 (June 1976). The charcoal adsorber efficiency test procedures will allow for the removal of one representative sample cartridge. The sample will be at least two inches in diameter and a length equal to the thickness of the bed. If the iodine removal efficiency test results are unacceptable, all adsorbent in the system will be replaced. High efficiency particulate filters are installed before and after the charcoal filters to prevent clogging of the carbon adsorbers and to minimize potential release of particulates to the environment. An efficiency of 99% is adequate to retain particulates that may be released to the reactor building following an accident. This will be demonstrated by in-place testing with DOP as the testing medium. Any HEPA filters found defective will be replaced with filters qualified pursuant to regulatory guide position C.3.d of Regulatory Guide 1.52 Revision 1 (June 1976). Once per operating cycle demonstration of HEPA filter pressure drop, operability of inlet heaters at rated power, automatic initiation of each standby gas treatment system circuit, and leakage tests after maintenance or testing which could affect leakage, is necessary to assure system performance capability.

Bases Continued:

D. Primary Containment Isolation Valves

Those large pipes comprising a portion of the reactor coolant system whose failure could result in uncovering the reactor core are supplied with automatic isolation valves (except those lines needed for emergency core cooling system operation or containment cooling). The closure times specified herein are adequate to prevent loss of more coolant from the circumferential rupture of any of these lines outside the containment than from a steam line rupture. Therefore, this isolation valve closure time is sufficient to prevent uncovering the core.

In order to assure that the doses that may result from a steam line break do not exceed the 10 CFR 100 guidelines, it is necessary that no fuel rod perforation resulting from the accident occur prior to closure of the main steam line isolation valves. Analyses suggest that fuel rod cladding perforations would be avoided for main steam valve closure times, including instrument delay, as long as 10.5 seconds. However, for added margin the Technical Specifications require a valve closure time of not greater than 5 seconds.

The primary containment isolation valves are highly reliable, have low service requirement, and most are normally closed. The initiating sensors and associated trip channels are also checked to demonstrate the capability for automatic isolation. Reference Section 5.2.2.4.3 and Table 5-2-3 FSAR. The test interval of once per operating cycle for automatic initiation results in a failure probability of 1.1×10^{-7} that a line will not isolate. More frequent testing for valve operability results in a more reliable system.