



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 108 TO FACILITY OPERATING LICENSE NO. DPR-22

NORTHERN STATES POWER COMPANY
MONTICELLO NUCLEAR GENERATING PLANT

DOCKET NO. 50-263

1.0 INTRODUCTION

By letter dated September 30, 1999, the Northern States Power Company (NSP or the licensee) requested an amendment to the Technical Specifications (TSs) for the Monticello Nuclear Generating Plant. The proposed amendment would change the TS surveillance periodicity requirements for the control room emergency filtration system.

2.0 EVALUATION

2.1 Background

The function of the control room ventilation-emergency filtration train (CRV-EFT) system is to maintain the environment of the main control room, thereby ensuring its habitability during normal and accident conditions. The CRV-EFT system is composed of two subsystems, the control room ventilation (CRV) subsystem and the emergency filtration train (EFT) subsystem. The function of the CRV subsystem is to provide the control room and the first and second floors of the EFT building with conditioned air to maintain acceptable temperature conditions under normal and emergency conditions. The EFT subsystem provides for manual isolation of the control room and the first and second floors of the EFT building from outside air during a toxic chemical release. During a hypothetical radiological accident, the EFT provides for manual or immediate automatic pressurization of the control room with filtered air to minimize the activity, and therefore the radiological dose, inside the control room. The redundant air filtration units consist of the following components in series: a low efficiency filter, an electric heating element, a high efficiency particulate air (HEPA) filter, two 2-inch charcoal adsorber beds, a HEPA filter, and a centrifugal fan. The charcoal adsorber removes gaseous iodine, and the HEPA filters remove particulate matter. The EFT subsystem is designed to provide adequate radiation protection to permit access and occupancy of the control room under accident conditions without personnel receiving radiation exposures in excess of 5 rem whole-body, or its equivalent, to any part of the body for the duration of the accident.

The current TSs require in-place testing of EFT system HEPA and activated charcoal filters once per 720 hours of system operation; once per operating cycle, not to exceed 18 months; or following painting, fire, or chemical release while the system is operating that could contaminate the HEPA filters or charcoal adsorbers.

2.2 Evaluation of Proposed Change

The licensee proposes to change TS Section 3/4.17.B, "Control Room Emergency Filtration System," to eliminate unnecessary in-place testing of the HEPA filters and charcoal adsorbers based on system operating time. The proposed change would require only laboratory testing of the charcoal adsorber after 720 hours of system operation. In-place testing of the HEPA and charcoal filters, verification of system flow, and laboratory testing of charcoal adsorbers would still be required once per operating cycle, not to exceed 18 months, or following painting, fire, or chemical release that could contaminate the HEPA filters or charcoal adsorbers.

Industry and regulatory standards for testing of EFT filters do not require in-place testing of HEPA filters or charcoal adsorbers based on system operating time. Table 1, "Tests and Inspections with Recommended Frequencies," of American Society of Mechanical Engineers (ASME) N510-1989, "Testing of Nuclear Air Treatment Systems," requires only laboratory testing of charcoal adsorbers to be performed based on a system operating time of 720 hours. This is consistent with NRC Generic Letter 83-13, "Clarification of Surveillance Requirements for HEPA Filters and Charcoal Adsorber Units in Standard Technical Specifications of ESF [Engineered Safety Feature] Cleanup Systems." Regulatory Guide 1.52, Rev. 2, March 1978, "Design, Testing and Maintenance Criteria for Post Accident Engineered-Safety-Feature Atmosphere Cleanup System Air Filtration and Adsorption Units of Light-Water-Cooled Nuclear Power Plants," does not specify system operating time as a criteria for in-place testing of HEPA filters or charcoal adsorbers. In previous correspondence to the licensee (letter from J. Stefano (NRC) to D. Musolf (NSP), "Proposed Technical Specifications for the Monticello Nuclear Generating Plant Control Room Ventilation System per TMI Action Plan Item III.D.3.4," dated April 4, 1988), the staff noted that it does not require an in-place DOP [dioctyl phthalate] or halogenated hydrocarbon test after 720 hours of system operation unless system integrity is violated in order to obtain a charcoal sample.

Laboratory tests of adsorbent are required by ASME N510-1989 for acceptance (including after completion of initial construction and after any major system modification or repair), before each adsorber replacement (including before routine in-place testing), and at least each operating cycle (including intervals not exceeding 720 hours of system operation or for any system immediately following inadvertent exposure to solvent, paints, or other organic fumes or vapors that could degrade the performance of the adsorbent). In-place testing of HEPA filters and adsorbers is required for acceptance (including after completion of initial construction and after any major system modification or repair), after replacement, and at least once per operating cycle.

Regulatory Guide 1.52 requires adsorber and HEPA filter in-place testing (1) initially, (2) at least once per 18 months thereafter, and (3) following painting, fire, or chemical release in any ventilation zone communicating with the system. In addition, in-place testing for adsorbers is required following removal of an adsorber sample for laboratory testing if the integrity of the adsorber section is affected.

Industry and regulatory guidance does not require in-place testing of HEPA filters or charcoal adsorbers based on system operating time. The proposed change to require only laboratory testing of the charcoal adsorber after 720 hours of system operation is consistent with established industry and regulatory guidance for HEPA filter and charcoal adsorber testing requirements for control room emergency ventilation systems and is acceptable to the staff.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Minnesota State official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes a surveillance requirement. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration and there has been no public comment on such finding (64 FR 59805). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

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Date: December 8, 1999