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OCT 29 1980

Docket No. 50-263

Mr. L. O. Mayer, Manager
Nuclear Support Services
Northern States Power Company
414 Nicollet Mall - 8th Floor
Minneapolis, Minnesota 55401

Dear Mr. Mayer:

The Commission issued the Fire Protection Safety Evaluation Report (SER) for the Monticello Nuclear Generating Plant on August 29, 1979. By letters dated May 28, 1980 and June 4, 1980, you were provided with the results of the staff's evaluation of certain SER open issues.

Enclosure 1 to this letter contains our evaluation of your responses to the SER requirements for a number of SER open issues. As stated in Enclosure 1, we find your proposed resolution of these items acceptable.

A supplement to the Fire Protection SER will be issued upon completion of the staff's evaluation of all open issues.

Please contact the Project Manager if you have any questions concerning this information.

Sincerely,

Original Signed by
T. A. Ippolito

Thomas A. Ippolito, Chief
Operating Reactors Branch #2
Division of Licensing

Enclosure:
1. Fire Protection Review - Staff Evaluation - Acceptable Items

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OFFICE	ORB #2	ORB #5	ORB #2			
SURNAME	KEccleston:kf	TWambach	TIppolito			
DATE	10/29/80	10/29/80	10/29/80			

cc:

Gerald Charnoff, Esquire
Sahw, Pittman, Potts and
Trowbridge
1800 M Street, N. W.
Washington, D. C. 20036

Arthur Renquist, Esquire
Vice President - Law
Northern States Power Company
414 Nicollet Mall
Minneapolis, Minnesota 55401

Plant Manager
Monticello Nuclear Generating Plant
Northern States Power Company
Monticello, Minnesota 55362

Russell J. Hatling, Chairman
Minnesota Environmental Control
Citizens Association (MECCA)
Energy Task Force
144 Melbourne Avenue, S. E.
Minneapolis, Minnesota 55414

Ms. Terry Hoffman
Executive Director
Minnesota Pollution Control Agency
1935 W. County Road B2
Roseville, Minnesota 55113

The Environmental Conservation Library
Minneapolis Public Library
300 Nicollet Mall
Minneapolis, Minnesota 55401

U. S. Nuclear Regulatory Commission
Resident Inspectors Office
Box 1200
Monticello, Minnesota 55362

Mr. Steve Gadler
2120 Carter Avenue
St. Paul, Minnesota 55108

Fire Detection System, Section 3.1.1A(1)

In the Fire Protection SER, it was our concern that a fire in the control room area or in closed cabinets in the control could go undetected.

By letter dated December 27, 1979, the licensee proposed to install battery powered ionization detectors in the control room in areas not visible from front of the console. These detectors will be located within enclosed cabinets and in the area above open cabinets. We informed the licensee that we would accept the system provided that an administrative procedure for weekly testing of the battery powered detectors be establsihed. By letter dated July 18, 1980 the licensee committed to test and inspect the detectors weekly.

Based on the licensee's commitment, we find the licensee's detector system for the control room to be acceptable.

Fire Detection Systems, Section 3.1.1B(1)

In the Fire Protection SER, the concern was that the smoke detectors might not respond to the products of combustion for the combustibles in the areas where smoke detectors are installed. We were also concerned that ventilation air flow patterns in the area might reduce or prevent detector response and we recommended that the licensee perform an in-situ smoke detector test.

By letter dated May 23, 1980, the licensee informed us that they were going to develop procedures for an in-situ test program for the fire detectors. However, the licensee has found that the performance of in-situ testing of fire detectors is more complex than originally thought.

The required methodology for an in-situ fire detector test is beyond the state-of-the-art and, therefore, such a test cannot be performed at this time.

We find that since the fire detectors will be bench tested and considering that the fire detection systems meet appropriate NFPA Codes, we find the existing fire detectors acceptable.

Fire Detection Systems, Section 3.1.1B(2)

In the Fire Protection SER, the concern was that the existing fire detection systems do not comply with the recommendations of NFPA 72D and therefore may be unreliable to provide the required early warning fire detection.

By letter dated April 2, 1980, the licensee stated that the existing smoke detection systems have been upgraded to comply with NFPA 72D by providing supervision and remote alarming at a single location for all systems.

Based on this information, we find that the existing detection systems as upgraded by the licensee will meet Section E.1 of Appendix A to BTP 9.5-1 and are, therefore, acceptable.

Gas Suppression Systems and Cables, Sections 3.1.2 and 3.1.9(1)

In the Fire Protection SER, the concern was that a single fire in the cable spreading room could damage redundant safe shutdown systems.

By letters dated May 8 and August 5, 1980, the licensee committed to install Halon 1301 automatic suppression systems in the cable spreading room. The licensee also proposed to reroute either the HPCI or RCIC system cables and one division of the emergency diesel generator and emergency service water system cables to provide separation between redundant safe shutdown systems. The licensee is also providing alternate shutdown capability for this area.

We conclude that with the proposed modifications, the cable spreading room has adequate fire protection and, therefore is acceptable.

Ventilation Equipment, Section 3.1.7(2)

In the Fire Protection SER, the concern was that the hydrogen control measures for the battery rooms is not sufficient to preclude hydrogen buildup if the ventilation systems fail.

By letter dated June 24, 1980, the licensee committed to install in each battery room a ventilation air flow monitor that alarms and annunciates in a continuously manned area upon loss of air flow.

Based on our review, we conclude that the licensee's commitment meets Section F.7 of Appendix A to BTP APCSB 9.5-1, and is, therefore acceptable.

Ventilation Equipment, Section 3.1.7(3)

In the Fire Protection SER, the concern was that a fire in the Motor Generator Set Room (Fire Zone 3A) would propagate through the undampered ventilation openings to the Contaminated Records Storage Area (Fire Zone 3E) and to the ventilation equipment above Fire Zone 3A.

By letter dated June 23, 1980, the license proposed to cover the ventilation ducts in fire zone 3A which lead to the adjacent zones, with an expanded metal lath and a two-inch thick coating of Pyrocrete 241 (a fireproofing material). Additional vent duct supports will be provided to support the added load on the duct. The duct supports will also be protected with metal lath and 2 inches of Pyrocrete 241. We have reviewed the licensee's commitment and conclude that the proposed modification will provide the ventilation duct with a fire resistance which is equivalent to the fire barrier separating the fire zones.

We find that the licensee's modification meets Section D.1(j) of Appendix A to BTP PACSB 9.5-1 and, therefore, is acceptable.

Fire Barrier/Penetration Seals, Sections 3.1.8(5 and 6) and 3.2.2(1)

In the Fire Protection SER, the concern was that the penetration seals used to close openings in fire rated walls and floors are not sufficient to prevent a fire from propagating between fire areas.

By letter dated February 20, 1980, the licensee described their approach in developing qualified seal designs. Included in the submittal were sketches illustrating the various constructions and combinations of materials which will be tested in order to determine the adequacy of the designs. The testing will be performed at southwest Research Laboratory and will conform to the provisions of ASTM E-119-76 and IEEE 634-1978 (with NRC comments RS-809-5). These comments include the requirement for testing with a differential pressure across the fire barrier with low pressure on the unexposed side corresponding to plant in-situ conditions.

In many areas, the existing polyurethane foam penetration seals will be upgraded by add-on materials over the existing seals. The configurations that will be tested for this purpose will include various combinations of Flamastic, pyrocrete, fiberglass wool, urethane foam, Kaowool Marinite board, Fiberfrax Hotboard, Intumastic 185 and a new material developed by Southwest Research called Silicate Gel.

All penetration seals will be subjected to a 3-hour fire test in accordance with ASTM E-119. Any test configuration that is good at 1-1/2 hours but fails at 3 hours, or fails the hose stream test, will be candidate for retest in a 1-1/2 hour test. Configurations passing a 1-1/2 hour test plus the hose stream test may be used to upgrade seals in areas of the plant where a rating of less than 1-1/2 hours is sufficient and 3-hour rated seals were not explicitly required.

We have reviewed the licensee's proposed test methods, including the possible use of 1-1/2 hour seals, and find that they will adequately determine the fire rating of the penetration seals.

The licensee should conduct the proposed fire tests and replace any penetration seals which do not pass the 1-1/2 hour tests with 3-hour fire-rated penetration seals. Those seals that pass the 1-1/2 hour test but fail the 3-hour test should be replaced with 3-hour fire-rated seals.

Based on the licensee's proposed test plan and commitment to upgrade the penetration seals to those that passed the test, we find the penetration seals acceptable.

Cable, Section 3.1.9(2)

In the Fire Protection SER, the concern was that the redundant HPCI and RCIC systems routed through the pipe and cable tray penetration and the ESF motor control center areas could be damaged by a single fire. We required that the HPCI system cables be rerouted to circumvent this area.

By letter dated August 5, 1980, the licensee committed to reroute either the HPCI or the RCIC system cables outside the area depending on which system has the fewest cables in the area.

Based on this commitment, we find that the licensee has provided an adequate level of fire protection, meets our requirement and therefore, is acceptable.

Cables and Emergency Service Water System, Sections 3.1.9(3) and 3.1.16

In the Fire Protection SER, the concern was that a single fire in the T.I.P. System Drive and RCIC Room Entry Area (Fire Zone 2A) of the reactor building could damage redundant systems required for safe shutdown.

By letters dated June 27 and August 5, 1980, the licensee provided additional information. The licensee proposed to reroute either the RCIC or HPCI system cables so they no longer are in fire zone 2A. In addition, the licensee provided design information on proposed modification to the ESW system to enable that system to provide cooling capability for the RHR pump seals if redundant reactor building closed cooling system pumps are damaged by a fire in Zone 2A.

We find that the licensee has committed to provide adequate safe shutdown capability from outside fire zone 2A such that loss of all systems which will remain in zone 2A will not prevent safe plant shutdown, and is, therefore, acceptable.

Control of Combustibles, Section 3.1.10A(3)

In the Fire Protection SER, the concern was that the curb provided between the turbine lube oil reservoir and the ESF motor control center area was not adequate to contain a major lube oil spill and sufficient quantity of fire suppression water. Also curbs were not provided to prevent a fuel oil spill in one diesel generator room from spreading to the adjacent diesel generator room through the doorway between the two rooms.

By letters dated May 1 and August 26, 1980, the licensee provided design information on their proposed modifications.

A 9-inch high curb will be provided to isolate an uncontrolled spread of combustible liquids from communicating from one diesel generator to the other. The existing curb between the turbine lube oil storage tank/reactor feedwater pump area and the ESF motor control center area will be replaced with an 8-inch high curb and a second 8-inch high curb will be installed

Based on our review, we find that the licensee's proposed modifications are sufficient to assure that the oil spills in these areas would be contained and are, therefore, acceptable.

Hose Stations, Interior, Section 3.1.11A(1)

In the Fire Protection SER, the concern was that the manual hose and hose stations provided were not adequate to provide effective hose streams for manual fire suppression activities in all areas of the plant.

By letters dated January 24 and July 18, 1980, the licensee provided information describing their actions to provide the additional hose coverage. The licensee performed an evaluation to determine if all safety-related areas of the plant and all areas that could present a hazard to safety-related areas were adequately covered by hose stations. These areas included the reactor core isolation cooling pump room, the MG set room and the torus area. The evaluation showed that several areas could not be reached by the present hose stations. The licensee committed to install two additional hose stations in the reactor building torus area. Six existing hose stations will be provided with additional hose. The maximum quantity of hose at any hose station does not exceed 100 feet.

We find that, with the licensee's modifications the hose stations meet the guidelines of Section E.3(d) of Appendix A to BTP 9.5-1 and are, therefore, acceptable.

Hose Stations, Exterios, Section 3.1.11B(5)

In the Fire Protection SER, the concern was that the unlined linen hose provided in the hydrant hose houses should not be left connected to the hydrant outlets.

By letter dated June 18, 1980, the licensee stated that the linen hoses have been replaced with synthetic lined hoses which are not subject to rot or mildew, and that NFPA 24 recommends that these hoses be left connected to the hydrant. The licensee stated that they intended to leave the new synthetic hose attached to the hydrant outlets.

We conclude that, since the licensee has replaced the linen hose with lined synthetic hose, the hose connected to the hydrants is in compliance with NFPA 24 and is, therefore, acceptable.

Yard Loop, Section 3.1.12(2)

In the Fire Protection SER, the concern was that a single failure of the fire protection water supply system could impair the ability to provide adequate water to an entire building complex.

By letter dated February 11, 1980, the licensee proposed to provide an 8-inch cross tie between the interior 8-inch supply lines for the reactor and turbine buildings. Appropriate valves will be installed in this line and in existing lines to provide for isolation of sections of the system to prevent a single failure in the bulk supply system from impairing the water supply to an entire building.

We conclude that the licensee's commitment meets the guidelines of Section E.3(a) of Appendix A to BTP 9.5-1 and is, therefore, acceptable.

Interior Hose Stations, Section 3.2.4(2)

In the Fire Protection SER, the concern was that the fire water supply system was inadequate to supply each standpipe hose station with 100 gpm at 65 psi residual pressure.

By letter dated December 13, 1979, the licensee provided additional information showing that all the hose stations are capable of exceeding the 100 gpm at 65 psi residual pressure requirement with a single pump operating and the shortest leg of the loop out of service.

Based on the licensee's verification, we conclude that the standpipe and hose system satisfies the requirements of NFPA 14 regarding water supply and the guidelines of Section E.3(d) of Appendix A to BTP APCSB 9.5-1 and is, therefore, acceptable.