

NSP

NORTHERN STATES POWER COMPANY

MINNEAPOLIS, MINNESOTA 55401

July 8, 1980

Director of Nuclear Reactor Regulation
U S Nuclear Regulatory Commission
Washington, DC 20555

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Docket Nos. 50-282 License Nos. DPR-42
50-306 DPR-60

Fire Protection Safe Shutdown Analysis
Supplemental Information

On October 22, 1979 and October 23, 1979 we submitted for NRC Staff review a revised fire protection safe shutdown analysis report. This report summarized the results of a thorough reanalysis of fire areas containing equipment and cable required to safely shut down the Prairie Island reactors.

On June 18, 1980 we received by telecopy five questions which resulted from NRC Staff review of the fire protection safe shutdown analysis for Prairie Island. The purpose of this letter is to address these questions.

The NRC Staff questions and Northern States Power Company's responses are provided in the attached document, "Response to NRC Staff Questions - Safe Shutdown in Event of Fire - Prairie Island." Please contact us if you have any additional questions related to the Prairie Island safe shutdown analysis or wish to discuss any of these concerns in detail.

L.O. Mayer

L O Mayer, PE
Manager of Nuclear Support Services

LOM/DMM/ak

cc: J G Keppler
G Charnoff

Attachment

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Attachment
Director NRR, USNRC
July 8, 1980

Response to NRC Staff Questions - Safe Shutdown in Event of Fire
Prairie Island

1. A transient exposure fire has not been considered in locations critical to the cables required for safe shutdown, e.g., control room. The reason for this is evidently based on their administrative controls. We do not preclude the possibility of small fire occurrences because of administrative controls and, hence, the licensee will have to consider this in their fire hazards analysis associated with the alternate shutdown analysis.

Response

A transient fire in the control room has been considered in that it was assumed that a relay room fire could render the control room inoperable since all cables entering and leaving the control room pass through the relay room. The analysis has demonstrated that safe shutdown can be achieved successfully from either hot shutdown panel.

A transient fire equivalent to two gallons of flammable liquid in either auxiliary feedwater pump room will not affect control of safeguards equipment from the control room or from the alternate auxiliary feedwater pump room.

The NSP Safety Manual sets forth specific requirements for handling and storage of flammable liquids. In addition, Prairie Island Administrative Control Directives covering handling, use and storage of flammable liquids are employed to insure utmost safety to plant personnel and equipment. This directive is presently being revised to limit the size of flammable liquid safety containers to a maximum of 2 gallons.

2. It is not clear in the licensee's analysis as to whether or not the plant can withstand a fire at the auxiliary shutdown panels without impairing the ability for an operator to assume control in the control room or vice versa.

Response

The auxiliary feedwater pump rooms, where the shutdown panels are located, will be totally independent of the control room following planned modifications providing independent indications of steam generator and reactor parameters. A simultaneous fire at both auxiliary shutdown panels and the control room or cable spreading room is not within the scope of the criteria set forth by the NRC. The operator's ability to assume control from either the control room or either shutdown panel will not be impaired as a result of a fire in either location.

3. A statement is made in the description of the auxiliary feedwater pump room that control cables for the diesels are separated by distance. What is this distance separation?

Response

Cables for the diesels passing through the auxiliary feedwater pump room are encased in interlocking armor or conduit and are located approximately 15 feet above floor level. The horizontal run for the two cables extends for less than 15 feet before the cables change direction. The center-to-center separation of the ladders in which the armored cable is located is eight (8) feet. The sprinkler manifold is located below the ceiling and is situated such that the entire horizontal run would be covered with water spray. It is our conclusion that the cable protection, its physical location and separation, and the proximity of the sprinkler manifold to the cables provides adequate protection from fire hazards.

4. Define what is meant by a "large distance" as it is referred to in your description of the areas 58 and 32.

Response

Large distance as it is referred to in our Description of fire area 58 (Unit 1 Auxiliary Building, 695 level) is greater than 30 feet. The smallest separation for redundant (diesel) cables is in area 32 (auxiliary feed pump room) where it is eight feet.

5. You have identified five critical crossover points affecting redundant divisions of cables and proposed that fire retardant blanket be placed between the redundant cable trays. These blankets are not equivalent to fire rated barriers, which is what is required to protect redundant trays in close proximity. This application of a fire rated barrier would also be true for cable 25406-1 (page 14).

Response

In our analysis we did not identify a blanket by type or model number. It is our intent to provide total enclosure blankets at the fire crossover points and at other locations where it is deemed necessary, which have a minimum one (1) hour fire rating.