



December 11, 2008

L-PI-08-105
10 CFR 54

U S Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Prairie Island Nuclear Generating Plant Units 1 and 2
Dockets 50-282 and 50-306
License Nos. DPR-42 and DPR-60

Responses to NRC Requests for Additional Information Dated November 19, 2008
Regarding Application for Renewed Operating Licenses

By letter dated April 11, 2008, Northern States Power Company, a Minnesota Corporation, (NSPM) submitted an Application for Renewed Operating Licenses (LRA) for the Prairie Island Nuclear Generating Plant (PINGP) Units 1 and 2. In a letter dated November 19, 2008, the NRC transmitted Requests for Additional Information (RAIs) regarding that application. This letter provides responses to those RAIs.

Enclosure 1 provides the text of each RAI followed by the NSPM response.

If there are any questions or if additional information is needed, please contact Mr. Eugene Eckholt, License Renewal Project Manager.

Summary of Commitments

This letter contains no new commitments or changes to existing commitments.

I declare under penalty of perjury that the foregoing is true and correct.
Executed on December 11, 2008.

Michael D. Wadley
Site Vice President, Prairie Island Nuclear Generating Plant Units 1 and 2
Northern States Power Company - Minnesota

Enclosure (1)

cc:

Administrator, Region III, USNRC
License Renewal Project Manager, Prairie Island, USNRC
Resident Inspector, Prairie Island, USNRC
Prairie Island Indian Community ATTN: Phil Mahowald
Minnesota Department of Commerce

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RAI 2.3.3.9-1

Section 4.3.1.5 of the Safety Evaluation Report for PINGP Units 1 and 2, dated September 6, 1979, discusses various types of wet pipe, deluge, and pre-action dry pipe sprinkler systems provided in the plant areas for fire suppression activities. The sprinkler systems in various areas are:

Fire Sprinkler System	Area
Wet Pipe Automatic Sprinkler Systems	<ul style="list-style-type: none">• Turbine Building – Turbine Lube Oil and Control Oil Piping Areas• Air Compressor and Auxiliary Feedwater Pump Rooms• Exit Stairwells• Records Storage Area• Decontamination Area• Water Treatment Area• Warehouse• Hot Lab Area
Deluge Systems	<ul style="list-style-type: none">• Main Auxiliary and Startup Transformers• Turbine Generators Bearings• Turbine Seal Oil Unit• Turbine Lube Oil Reservoir• Oil Storage Room• Charcoal Filter – Auxiliary Building Special Exhaust Filter and the Shield Building Exhaust Filters
Pre-action Dry Pipe Sprinkler Systems	<ul style="list-style-type: none">• Containment Cable Penetration Areas• Screen House Pump Area (Both Levels) Including the Diesel Cooling Water Pumps and the Diesel Driven Fire Pump

The staff requests that the applicant verify whether the above sprinkler systems installed in various areas of the plant are in the scope of license renewal in accordance with 10 CFR 54.4(a) and subject to an AMR in accordance with 10 CFR 54.21(a)(1). If they are excluded from the scope of license renewal and not subject to an AMR, the staff requests that the applicant provide justification for the exclusion.

NSPM Response to RAI 2.3.3.9-1

The wet pipe automatic sprinkler, deluge, and pre-action dry pipe sprinkler sub-systems installed in various areas of the plant for fire suppression are in the scope of license

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renewal in accordance with 10 CFR 54.4(a) and are subject to an Aging Management Review (AMR) in accordance with 10 CFR 54.21(a)(1).

Wet Pipe Automatic Sprinkler Systems

- The Turbine Building – Turbine Lube Oil and Control Oil Piping Areas Sprinkler sub-systems are shown on Drawings LR-39228-2 and 3. See Drawing LR-39228-2, location D-7, Turbine Oil Sprinkler System WPS-18. See Drawing LR-39228-3, location G-4, Turbine Oil Pipe Wet Pipe System WPS-21.
- The Air Compressor and Auxiliary Feedwater Pump Rooms Sprinkler sub-system is shown on Drawing LR-39228-2, location D-3, Air Compressor and Auxiliary Feedwater Pump Area Sprinkler System WPS-10.
- Exit stairwells used for egress or to allow access to manual fire suppression are provided with sprinkler systems throughout the plant. Exit stairwell sprinkler systems are shown on Drawings LR-100282 and LR-39228-2, 3, 4 and 5. See Drawing LR-100282, location D-4, Stairs Wet Pipe Sprinkler System. See Drawing LR-39228-2, location E-5, Stairway Sprinkler System SWP-3 (incorrectly labeled WPS-18), location B-9, Stairway Sprinkler System SWP-5, and location G-9, Stairway Wet Pipe System SWP-6. See Drawing LR-39228-3, location E-2, Stairway Sprinkler System SWP-14 and location H-6, Stairway Sprinkler System SWP-13. See Drawing LR-39228-4, location B-4, Stairway Sprinkler System SWP-12, location B-10, Stairway Sprinkler System SWP-4, location F-5, Stairway Sprinkler System SWP-1 and location C-6, Stairway Sprinkler System SWP-2. See Drawing LR-39228-5, location A-5, Stairwell sprinklers.
- The Records Storage Area Sprinkler sub-system is shown on Drawing LR-39228-4, location G-8, Record Room System WPS-23.
- The Decontamination Area at Access Control is protected by a wet pipe sprinkler sub-system shown on Drawing LR-39228-4, location A-8, Laundry Room, Toilet Room, Clothes Storage Room and Corridor Sprinkler Systems WPS-20.
- The Water Treatment Area Sprinkler sub-system is shown on Drawing LR-39228-2, location E-9, Turbine Room (East Side) Sprinkler System WPS-9.
- The Warehouse Sprinkler sub-systems are shown on Drawing LR-39228-3. See location B-3, Warehouse Sprinkler & Hose Stations, and location F-9, Warehouse #2 Sprinkler System DE-3.
- The Hot Lab Area Sprinkler sub-system is shown on Drawing LR-39228-4, location C-6, WPS-19 Hot Chemical Laboratory.

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Deluge systems

- The Main, Auxiliary and Startup Transformers Deluge sub-systems are shown on Drawings LR-39228-2 and LR-39228-3. See Drawing LR-39228-2, location B-6, B-7 and B-8, Transformer Sprinkler Systems DM-3, DM-2 and DM-1, respectively. See Drawing LR-39228-3, location D-2, D-4 and D-5, Transformer Sprinkler System DM-5, DM-4 and DM-6, respectively.
- The Turbine Generator Bearing Pre-Action sub-systems are shown on Drawings LR-39228-2 and LR-39228-3. See Drawing LR-39228-2, location B-10, Turbine Bearing Fire Protection Pre-action System PA-14. See Drawing LR-39228-3, location B-11, Turbine Bearing Fire Protection Pre-action System PA-15.
- The Turbine Seal Oil Unit Deluge sub-systems are shown on Drawings LR-39228-2 and LR-39228-3. See Drawing LR-39228-2, location D-9, Hydrogen Seal Oil Unit Sprinkler System DA-1. See Drawing LR-39228-3, location G-2, Hydrogen Seal Oil Sprinkler System DA-5.
- The Turbine Lube Oil Reservoir Deluge sub-systems are shown on Drawings LR-39228-2 and LR-39228-3. See Drawing LR-39228-2, location D-4, Turbine Oil Reservoir Area Sprinkler System DA-3. See Drawing LR-39228-3, location G-6, Turbine Oil Reservoir Sprinkler System DA-4.
- The Oil Storage Room Deluge sub-system is shown on Drawing LR-39228-2, location B-3, Turbine Oil Storage Room Sprinkler System DA-2.
- The Charcoal Filter – Auxiliary Building Special Exhaust Filter and the Shield Building Exhaust Filters Deluge sub-systems are shown on Drawing LR-39603-4, location C-4 through E-4 and location E-11 through G-11.

Pre-action Dry Pipe Sprinkler Systems

- The Containment Cable Penetration Area Pre-Action Dry Pipe Sprinkler sub-systems are shown on Drawing LR-39228-4, location C-3, D-5, D-8 and C-10, Electrical Penetration Pre-Action System PAD-7, PAD-6, PAD-3 and PAD-4 respectively.
- The Screen House Pump Area (Both Levels) Including the Diesel Cooling Water Pumps and the Diesel Driven Fire Pump Pre-action Dry Pipe Sprinkler sub-system is shown on Drawing LR-39228-3, location B-8, Screenhouse Sprinkler System PAD-9.

The scoping boundaries extend up to and include the installed end devices such as sprinkler heads and spray nozzles. The interconnected piping/fittings, valves, sprinkler heads, spray nozzles and in-line components are within the scope of License Renewal and subject to AMR. Piping/fittings, valves, sprinkler heads, spray nozzles and other in-

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line components are included in LRA Table 2.3.3-9, and AMR aging management evaluations are included in Table 3.3.2-9.

RAI 2.3.3.9-2

LRA Tables 2.3.3-9 and 3.3.2-9 exclude several types of fire protection components that appear on the LRA drawings as within the scope of license renewal or discussed in PINGP CLB documents. These components are listed below:

- hose connections
- interior fire hose stations
- pipe supports
- couplings
- dikes for oil spill confinement
- floor drains and curbs for fire-fighting water
- backflow prevention devices
- trash grids and traveling screens
- flame retardant coating for cables
- fire retardant intumescent coating for polyurethane foam insulation
- turbine building smoke removal system components
- air compressors for safe-shutdown operations

For each, determine whether the component should be included in Tables 2.3.3-9 and 3.3.2-9 as component types subject to an AMR, and if not, justify the exclusion.

NSPM Response to RAI 2.3.3.9-2

Fire protection hose connections are within the scope of License Renewal. Hose connections from the plant fire header, hydrants and valves are evaluated as Piping/Fittings and are included in LRA Table 2.3.3-9 and Table 3.3.2-9. Fire hoses, including integral hose connections, are evaluated in LRA Section 2.1.3.2.2. Fire hoses are inspected and tested periodically and must be replaced if they do not pass the test or inspection; these components are short lived and are not subject to Aging Management Review.

Interior fire hose stations are within the scope of License Renewal. Interior fire hose stations components are evaluated as Piping/Fittings and Valves and are included in LRA Table 2.3.3-9 and Table 3.3.2-9.

Pipe supports for fire protection piping are within the scope of License Renewal. See LRA Section 2.4.2 and Table 2.4.2-1 for supports, and Section 2.3.3.9 and Table 2.3.3-9 for fire protection piping. For additional detail and for aging management of fire protection pipe supports, see Table 3.5.2-2 for the component type, "Support (... non-ASME piping ...)."

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Fire header couplings are within the scope of License Renewal. Fire header couplings are evaluated as Piping/Fittings and are included in LRA Table 2.3.3-9 and Table 3.3.2-9.

Dikes for oil spill confinement are addressed by the component types, "Concrete (... curbs, walls, slabs ...)" and "Steel components (... angles used to contain fuel oil leaks ...)." These component types, as used in the PINGP LRA, include structures that provide intended functions to direct flow and/or provide a fire barrier to prevent the spread of flammable liquids. These components are in scope of License Renewal and protect safety related structures and safe shutdown systems from fire damage. Concrete floor depressions, part of the concrete slab design, are also used to direct the flow of flammable liquids. These components are located throughout safety related structures and can be found in LRA Tables 2.4.1-1, 2.4.4-1, 2.4.5-1, and 2.4.9-1. For aging management of these concrete and steel components, see LRA Tables 3.5.2-1, 3.5.2-4, 3.5.2-5, and 3.5.2-9.

There is a reinforced concrete wall surrounding the fuel oil receiving tank located outside, adjacent to the south wall of the D5/D6 Diesel Generator Building. However the wall is not in scope of License Renewal. Since the tank performs a support function and not a confinement function, it is not in scope of License Renewal.

Floor drains for fire fighting water are within the scope of License Renewal and are evaluated in the Waste Disposal (WD) System. In general floor drains are highlighted as within the scope of License Renewal per 10 CFR 54.4(a)(2) due to flooding and/or spatial interaction intended functions. Where they may also have an 10 CFR 54.4(a)(3) function, this was not differentiated (for example, see Drawing LR-39248). The Turbine Oil Reservoir and Oil Storage Room drains are specifically discussed in Section 4.5 of the Safety Evaluation Report dated September 9, 1979. These drains are depicted on Drawings LR-39231-1, locations G-3 and H-8, and LR-39231-2, location H-4; and should be highlighted as within the scope of License Renewal per 10 CFR 54.4(a)(3). Floor drains are evaluated as Piping/Fittings and are included in LRA Table 2.3.3-20 and Table 3.3.2-20. The following changes are required to the LRA:

In LRA Section 2.3.3.20 under System Function Listing, the following function is added:

Code WD-FP Contains SCs relied upon in safety analysis or plant evaluations to perform a function that demonstrates compliance with 10 CFR 50.48, Fire Protection.	Cri 1	Cri 2	Cri 3				
			FP	EQ	PTS	AT	SB
			X				

Comment: This system contains floor drains for fire fighting water and oil confinement, such as the Turbine Oil Reservoir and Oil Storage Room drains, that support a Fire Protection function.

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In LRA Section 2.3.3.20 on Page 2.3-109, second paragraph, second sentence, "plant floor drains," is added to the list of drains which comprise the Waste Liquid sub-system.

In LRA Section 2.3.3.20, Page 2.3-110, the third sentence of the fifth paragraph is revised to read as follows: "Portions of the WD System support Fire Protection or Station Blackout event requirements based on the criteria of 10 CFR 54.4(a)(3)."

Curbs for fire fighting water are addressed by the component types, "Concrete (... walls, slabs and curbs ...)," "Stainless steel components (... curbs and flow deflectors ...)," and "Steel components (... curbs ...)." These component types as used in the PINGP LRA include structures that provide an intended function to direct flow away from safety related equipment in order to prevent water damage. These components are in scope of License Renewal, and are located throughout safety related structures. They are included in LRA Tables 2.4.1-1, 2.4.4-1, 2.4.7-1, and 2.4.9-1. For aging management of these concrete, stainless steel, and steel components, see LRA Tables 3.5.2-1, 3.5.2-4, 3.5.2-7, and 3.5.2-9.

The PINGP Fire Protection (FP) System is supplied from the Mississippi River and does not include connections from potable water sources. Therefore, the PINGP FP system does not contain backflow prevention devices; as a result they are not included in LRA Table 2.3.3-9 and Table 3.3.2-9. The FP system does include check valves; these are included in LRA Table 2.3.3-9 and Table 3.3.2-9.

Trash grids and traveling screens are addressed in LRA Section 2.3.4.3, Circulating Water (CW) System. The FP pumps draw water from behind the Plant Screenhouse trash grids and screens. During emergency operation, when the circulating water pumps are not in-service, the flows through the trash grids and screens would be insignificant and plugging or failure of the grids and screens is not credible. Therefore, trash grids and traveling screens are not relied upon to perform or support a License Renewal Fire Protection-related Intended Function.

Flame retardant coatings for cables used in penetration seals and used for cable encapsulation are in scope of License Renewal. They are included in LRA Table 2.4.5-1. For additional detail and for aging management of flame retardant coating for cables, see LRA Table 3.5.2-5 for the component types, "Fire barrier penetration seals" and "Fireproofing" for cable and cable tray.

Fire retardant intumescent coatings were originally used on all polyurethane foam piping insulation in areas containing safety related equipment. However, the intumescent coating performed unsatisfactorily and was replaced with materials identified as Armaflex (primer) and Flammastic (mastic sealant) which have better flame spread and smoke density test results when compared to the intumescent coating. This was conveyed in a letter to the NRC dated May 4, 1992. The NRC approved the replacement materials in a letter dated January 14, 1993. These components are in scope of License Renewal, and are identified in Table 2.4.5-1 of the LRA as, "Fire

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barrier penetration seals” and “Fireproofing” components. LRA Table 3.5.2-5 provides additional information on these component types and materials.

Turbine building roof exhaust fans, as well as smoke hatches that are fitted with automatic releases, are within the scope of License Renewal. The Turbine building roof exhaust fans are evaluated in LRA Section 2.3.3.19, Turbine and Administration Building (ZB) System (see Function ZB-FP) and are shown on Drawing LR-39601, location F-2, Turbine Building Roof Vent Fans. The fan and damper are integral to the fan housing and are evaluated as Fan Housings. They are included in LRA Table 2.3.3-19 and Table 3.3.2-19. The Turbine Building smoke hatches are evaluated in LRA Table 3.5.2-5.

Air compressors required for Fire Protection safe-shutdown operation are within the scope of License Renewal. The station and instrument air compressors are evaluated in LRA Section 2.3.3.17, Station and Instrument Air (SA) System (see Function SA-FP) and are shown on Drawings LR-39244 and LR-39253-3. The air compressors are active components and not subject to aging management review; as a result they are not included in LRA Table 2.3.3-17.