

November 17, 2004

Mr. James A. Spina  
Vice President Nine Mile Point  
Nine Mile Point Nuclear Station, LLC  
P.O. Box 63  
Lycoming, NY 13093

SUBJECT: REQUESTS FOR ADDITIONAL INFORMATION FOR THE REVIEW OF NINE  
MILE POINT NUCLEAR STATION, UNITS 1 AND 2, LICENSE RENEWAL  
APPLICATION

Dear Mr. Spina:

By letter dated May 26, 2004, Constellation Energy Group Inc. submitted an application pursuant to Title 10 of the *Code of Federal Regulations* Part 54 (10 CFR Part 54), to renew the operating licenses for the Nine Mile Point Nuclear Station (NMP), Units 1 and 2, for review by the U.S. Nuclear Regulatory Commission (NRC). The NRC staff is reviewing the information contained in the license renewal application (LRA) and has identified, in the enclosure, areas where additional information is needed to complete the review.

Based on discussions with Mr. Peter Mazzaferro of your staff, a mutually agreeable date for your response is within 30 days from the date of this letter. If you have any questions regarding this letter or if circumstances result in your need to revise the response date, please contact me at 301-415-1458 or by e-mail at [nbl@nrc.gov](mailto:nbl@nrc.gov).

Sincerely,

**/RA/**

N. B. (Tommy) Le, Project Manager  
License Renewal Section A  
License Renewal and Environmental Impacts Program  
Division of Regulatory Improvement Programs  
Office of Nuclear Reactor Regulation

Docket Nos.: 50-220 and 50-410

Enclosure: As stated

cc w/encl: See next page

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NINE MILE POINT NUCLEAR STATION UNITS 1 AND 2  
REQUESTS FOR ADDITIONAL INFORMATION (RAI)  
LICENSE RENEWAL APPLICATION (LRA)

<b>Section 2.3.3.A.9</b>	<b>NMP 1 Fire Detection and Protection System</b>
<b>Section 3.3 AMR Table 3.3.2.A-8</b>	<b>NMP 1 Fire Detection and Protection System</b>
<b>Section 2.3.3.B.13</b>	<b>NMP 2 Fire Detection and Protection System</b>
<b>Section 3.3 AMR Table 3.3.2.B-13</b>	<b>NMP 2 Fire Detection and Protection System</b>

The staff identified from review of the Nine Mile Point Nuclear Station Units 1 and 2 (NMP 1 and NMP 2), license renewal application (LRA), UFSAR, and approved fire protection safety evaluation reports dated July 26, 1979 and March 21, 1983 for Unit 1 and approved fire protection safety evaluation report dated February 1985 (supplements 1 through 6) for Unit 2 that the following fire protection (FP) systems and components have been excluded from the scope of license renewal and an aging management review (AMR). These systems and components were not included in the license renewal boundaries and appear to have FP intended functions required for compliance with 10 CFR 50.48 as stated in 10 CFR 54.4.

**(1) Section 2.3.3.A.9 - NMP 1 Fire Detection and Protection System**

RAI 2.3.3.A.9-1

LRA Section 2.3.3.A.9 references LR drawings LR-18030-C, Sheets 2 through 9. The FP water system drawings are numbered LR-18030-0. Verify the drawing numbers LR-18030-0, Sheets 2-9 are the correct LR drawings.

RAI 2.3.3.A.9-2

LR drawing LR-18030-0, Sheet 2 shows foam water systems 11, 12, 13, 14, and 15 within the scope of license renewal and subject to an AMR, including the foam solution supply piping. However, the LR drawing shows the foam tank and pumps not in the scope of license renewal. Additionally, the foam tanks and pumps are shown disconnected from the foam water system supply piping. The UFSAR has no reference to these foam water systems. Provide the basis for excluding the foam tank and pumps from the scope of license renewal and from being subject to an AMR, since they are necessary for the function of the foam water systems which are shown as in scope of license renewal.

RAI 2.3.3.A.9-3

LR drawing LR-18030-0, Sheet 6 (at location A2) shows sprinkler system SP-9069 is in scope of license renewal and subject to an AMR, except for the womens locker room. Areas within scope of license renewal include Admin Building, Lunch room and Wash Area and New Locker Room and Shops. Identify the basis for excluding a portion of SP-9069 from the scope of license renewal, since the rest of the system is in scope and subject to an AMR.

RAI 2.3.3.A.9-4

LR drawing LR-18030-0, Sheet 6 (at locations B4, C4, D, and E4) and LR-18030-0, Sheet 8 (at locations B1 and D4), shows pneumatic heat actuated devices (HADs) that actuate water spray systems. Although the water spray systems with which the HADs are associated are shown within the scope of license renewal and subject to an AMR, the HADs themselves are excluded from an AMR. These devices are thin-walled, bulb-shaped metal chambers connected to the releasing chamber by metal tubing. These devices are essential for the actuation of the in scope water spray systems and are passive, long-lived components. Explain the apparent exclusion of these HADs from the scope of license renewal and from requiring an AMR.

RAI 2.3.3.A.9-5

LR drawing LR-18036-C shows pressure maintenance pumps 11 and 12, excluded from the scope of license renewal and from being subject to an AMR. Pressure maintenance devices are an integral part of the FP water system and are a requirement of the National Fire Protection Association Standard NFPA 20, Standard for the Installation of Stationary Pumps for Fire Protection. Explain the apparent exclusion of the pressure maintenance pumps from the scope of license renewal and from requiring an AMR.

RAI 2.3.3.A.9-6

NMP 1 UFSAR Section 2.5.2.3.2 requires at least 1000 gallons of fuel in the fire pump diesel fuel oil storage tank. LR drawing LR-18040-0, Sheet 2 shows level instrumentation consisting of air tubing and other components supplying the level indicating instrumentation for fuel oil storage tank 82-20, excluded from the scope of license renewal and from requiring an AMR. Explain the apparent exclusion of these components from the scope of license renewal and from requiring an AMR.

RAI 2.3.3.A.9-7

LRA Table 2.3.3.A.9-1 includes the following component types as being subject to an AMR: filters/strainers, flow elements, and orifices. However, the intended function assigned to these components is "NSR Functional Support". LRA Table 2.0-1 identifies intended functions that are applicable to these components that are not identified in LRA Table 2.3.3.A.9-1. Aging management to ensure that the component level intended functions can be performed is necessary to ensure that the system level intended functions can be maintained. The intended functions include "filtration" and "flow restriction". Describe how the intended functions for these components are assigned and evaluated.

**(2) Section 3.3 AMR Table 3.3.2.A-8- NMP 1 Fire Detection and Protection System**

RAI 2.3.3.A.9-8

NUREG-1801, GALL Report, describes requirements for aging management of the Fire Protection Water System based on the combination of component type, material, and environment.

Table 3.3.2-A.8, Auxiliary Systems, for the NMP 1 fire detection and protection system, summarizes the AMP for each of the combinations mentioned above. When the combinations do not exactly match the requirements of the GALL, the LRA Table includes a note indicating that the prescribed AMP has been modified for use or that another aging management program is being used.

For the combination of fire hydrants, gray cast iron, raw water, low flow, Note "H" indicates that the selective leaching program is being used in addition to the Fire Water System Program to manage loss of material.

For the staff to complete its review, further information is required regarding the use of the selective leaching program to manage loss of material. Supply the portions of the selective leaching program that are applicable to the combination of fire hydrants, gray cast iron, raw water, and low flow. Include program documents and procedures credited for managing the loss of material for this combination.

#### RAI 2.3.3.A.9-9

NUREG-1801, GALL Report, describes requirements for aging management of the fire protection water system based on the combination of component type, material, and environment.

LRA Table 3.3.2-A.8, Auxiliary Systems, for the NMP 1 fire detection and protection system, summarizes the AMP for each of the combinations mentioned above. When the combinations do not exactly match the requirements of the GALL, the LRA Table includes a note indicating that the prescribed AMP has been modified for use or that another aging management program is being used.

For the combination of flow elements, wrought austenitic stainless steel, raw water, and low flow, Note "H" indicates that the fire water system program has been modified to manage cracking in addition to loss of material.

Additionally, Note "11" indicates that flow elements are not specifically identified in GALL Chapter VII for the fire protection system.

For the staff to complete its review, further information is required regarding the use of the fire water system program to manage cracking and loss of material. Supply the fire water system program documents and procedures that are applicable to the combination of flow elements, wrought austenitic stainless steel, raw water, and low flow that are credited with managing cracking and loss of material.

#### RAI 2.3.3.A.9-10

NUREG-1801, GALL Report, describes requirements for aging management of the fire protection water system based on the combination of component type, material, and environment.

LRA Table 3.3.2-A.8, Auxiliary Systems, for the NMP 1 fire detection and protection system, summarizes the AMP for each of the combinations mentioned above. When the combinations

do not exactly match the requirements of the GALL, the LRA Table includes a Note indicating that the prescribed AMP has been modified for use or that another AMP is being used.

For the combination of heat exchangers, carbon or low alloy steel (yield strength <100 ksi) and ductile/malleable cast iron, raw water, low flow, Note "6" indicates that the fire water system program has been modified to manage loss of material in heat exchangers which are not specifically identified in GALL Chapter VII for the fire protection system.

For the staff to complete its review, further information is required regarding the use of the fire water system program to manage loss of material for heat exchangers. Supply the Fire Water System Program documents and procedures that are applicable to the combination of heat exchangers, carbon or low alloy steel (yield strength <100 ksi) and ductile/malleable cast iron, raw water, low flow that are credited with managing loss of material in heat exchangers.

#### RAI 2.3.3.A.9-11

NUREG-1801, GALL Report, describes requirements for aging management of the fire protection water system based on the combination of component type, material, and environment.

LRA Table 3.3.2.A-8, Auxiliary Systems, for the NMP 1 fire detection and protection system, summarizes the AMP for each of the combinations mentioned above. When the combinations do not exactly match the requirements of the GALL. The LRA Table includes a note indicating that the prescribed AMP has been modified for use or that another AMP is being used.

For the combination of orifices, carbon or low alloy steel (yield strength <100 ksi) and ductile/malleable cast iron, raw water, low flow, Note "7" indicates that the fire water system program has been modified to manage loss of material in orifices which are not specifically identified in GALL Chapter VII for the fire protection system.

For the staff to complete its review, further information is required regarding the use of the fire water system program to manage loss of material for orifices. Supply the Fire Water System Program documents and procedures that are applicable to the combination of orifices, carbon or low alloy steel (yield strength <100 ksi) and ductile/malleable cast iron, raw water, low flow that are credited with managing loss of material in orifices.

#### RAI 2.3.3.A.9-12

NUREG-1801, GALL Report, describes requirements for aging management of the Fire Protection Water System based on the combination of component type, material, and the environment.

LRA Table 3.3.2.A-8, Auxiliary Systems, for the NMP1 fire detection and protection system, summarizes the AMP for each of the combinations mentioned above. When the combinations do not exactly match the requirements of the GALL, the LRA Table includes a note indicating that the prescribed AMP has been modified for use or that another AMP is being used.

For the combination of orifices, wrought austenitic stainless steel, raw water, low flow, Note "H" indicates that the Fire Water System Program has been modified to manage cracking in addition to loss of material.

Additionally, Note "7" indicates that orifices are not specifically identified in GALL Chapter VII for the fire protection system.

For the staff to complete its review, further information is required regarding the use of the fire water system program to manage cracking and loss of material. Supply the fire water system program documents and procedures that are applicable to the combination of orifices, wrought austenitic stainless steel, raw water, low flow that are credited with managing cracking and loss of material.

#### RAI 2.3.3.A.9-13

NUREG-1801, GALL Report, describes requirements for aging management of the fire protection water system based on the combination of component type, material, and environment.

LRA Table 3.3.2.A-8, Auxiliary Systems, for the NMP 1 fire detection and protection system, summarizes the AMP for each of the combinations mentioned above. When the combinations do not exactly match the requirements of the GALL, the LRA Table includes a note indicating that the prescribed AMP has been modified for use or that another AMP is being used.

For the combination of sluice gate for motor driven fire pump, carbon or low alloy steel (yield strength <100 ksi) and ductile/malleable cast iron, raw water, low flow, Note "22" indicates that the fire water system program has been modified to manage loss of material in the sluice gate for motor driven fire pump which is not specifically identified in GALL Chapter VII for the fire protection system.

For the staff to complete its review, further information is required regarding the use of the fire water system program to manage loss of material for the sluice gate for motor driven fire pump. Supply the Fire Water System Program documents and procedures that are applicable to the combination of sluice gate for motor driven fire pump, carbon or low alloy steel (yield strength <100 ksi) and ductile/malleable cast iron, raw water, and low flow that are credited with managing loss of material in the sluice gate for motor driven fire pump.

#### RAI 2.3.3.A.9-14

NUREG-1801, GALL Report, describes requirements for aging management of the Fire Protection Water System based on the combination of component type, material, and environment.

LRA Table 3.3.2.A-8, Auxiliary Systems, for the NMP 1 fire detection and protection system, summarizes the AMP for each of the combinations mentioned above. When the combinations do not exactly match the requirements of the GALL, the LRA Table includes a note indicating that the prescribed AMP has been modified for use or that another AMP is being used.

For the combination of spray nozzles, copper alloys (Zinc  $\leq 15\%$ ), raw water, low flow, Note "21" indicates that the Fire Water System Program has been modified to manage loss of material in the spray nozzles which are not specifically identified in GALL Chapter VII for the fire protection system.

For the staff to complete its review, further information is required regarding the use of the Fire Water System Program to manage loss of material for spray nozzles. Supply the Fire Water System Program documents and procedures that are applicable to the combination of spray nozzles, copper alloys (Zinc  $\leq 15\%$ ), raw water, low flow, that are credited with managing loss of material in spray nozzles.

### **(3) Section 2.3.3.B.13 - NMP 2 Fire Detection and Protection System**

Section 2.3.3.B.12 NMP2 Engine-Driven Fire Pump Fuel Oil System  
(This LRA Section is being addressed in LRA Section 2.3.3.B.13-NMP 2 Fire Detection and Protection System)

#### RAI 2.3.3.B.13-1

NUREG-1801, GALL Report, Section XI.27 Fire Water System describes requirement for aging management of the FP water system. It requires that an AMP be established to evaluate the aging effects of corrosion, MIC, biofouling of carbon steel and cast iron components in FP systems exposed to water.

The fire detection and protection system is within the scope of license renewal because, as stated in the LRA,

...contains NSR SCs whose failure could prevent satisfactory accomplishment of any of the functions identified in 10 CFR 54.4(a)(1). And it contains SCs relied on in safety analyses or plant evaluations to perform a function that demonstrates compliance with the Commission's regulations for fire protection (10 CFR 50.48).

LRA Section 2.3.3.B.13 discusses requirements for the fire detection and protection program but does not mention trash racks and traveling screens for the fire pump suction water supply. Trash racks and traveling screens are mentioned in LRA Section 2.3.3.B.27 service water system, but are not listed in Table 2.3.3.B.27-1 that contains the list of components that require aging management. They are not mentioned in LRA Section 2.4.B.12 Screenwell Building structure.

The UFSAR 9.5.1.2.1 states in part,

Trash racks and traveling screens are located upstream of the fire pump suction to remove any major debris from the water.

Trash racks and traveling screens are necessary to remove debris and prevent clogging for the FP water supply system. Trash racks and traveling screens are typically considered, passive, long-lived components. Trash racks are located in a freshwater environment. Traveling

screens are located in a freshwater/air environment. Although not specifically discussed in the UFSAR or LRA, trash racks and traveling screens are typically constructed of carbon steel material. Carbon steel in a fresh water environment or a freshwater/air environment is subject to corrosion.

Explain the apparent exclusion of the trash racks and traveling screens that are located upstream of the fire pump suctions from the scope of license renewal and from requiring an AMR.

RAI 2.3.3.B.13-2

NUREG-1801, GALL Report Section XI.27 Fire Water System states that,  
The aging management program applies to water based fire protection systems that consist of sprinklers,...

It further states that,  
in addition a sample of sprinkler heads is to be inspected using guidance of NFPA 25, Section 2.3.3.1.

This section states that where sprinkler heads have been in service for 50 years, they shall be replaced or representative samples from one or more sample areas shall be submitted to a recognized testing laboratory for field service testing. It also contains guidance to perform this sampling every 10 years after the initial field service testing.

LRA Section 2.3.3.B.13 states that the FP water system is composed of hose stations, hydrants, deluge, and water spray systems, fire pumps, sprinkler systems and pressure maintenance pumps. It also states that, the fire detection and protection system is in scope for license renewal for the following reasons:

- It contains NSR SCs whose failure could prevent satisfactory accomplishment of any of the functions identified in 10 CFR 54.4(a)(1).
- It contains SCs relied on in safety analyses or plant evaluations to perform a function that demonstrates compliance with the Commission's regulations for fire protection (10 CFR 50.48)."

This LRA Section also states that, the FP water subsystem components subject to an AMR consist of the motor-driven and diesel engine-driven fire pumps, the cooling water system for the engine-driven pump including its heat exchangers, the engine-driven pump exhaust system including the piping and muffler, and the associated FP water distribution system piping and fittings, valves, flow orifices, strainers and sprinklers.

LRA Section 2.1.6.4 provides response to Interim Staff Guidance concerning testing of sprinkler heads. This section refers to LRA Section B.2.1.17. Testing or replacement of sprinkler heads is not specifically discussed in this section.

The component types requiring an AMR for the fire detection and protection system and their intended functions are shown in LRA Table 2.3.3.B.13-1. LRA Table 2.3.3.B.13-1 does not include sprinkler heads.

LRA Appendix A – Safety Analysis Report Supplement, Section A2.1.18 Fire Water System Program states,

The Fire Water System Program manages aging of water-based fire protection systems due to loss of material and biofouling. Program activities include periodic maintenance, testing, and inspection of system piping and components containing water (e.g., sprinklers, nozzles, fittings, valves, hydrants, hose stations, standpipes). Inspection and testing is performed in accordance with the guidance of applicable National Fire Protection Association (NFPA) Codes and Standards and the Nuclear Electric Insurance Limited (NEIL) Members' Manual.

Based on information as stated above, it is not clear that sprinkler heads are included within the scope of license renewal. Explain the apparent exclusion of sprinkler heads from the scope of license renewal and from requiring an AMR.

#### RAI 2.3.3.B.13-3

LRA Section 2.1.4 describes the criteria for selecting structures, systems and components that are within the scope of license renewal. It states in part,

10 CFR 54.4(a)(3) states that SSCs WSLR include all SSCs relied on in safety analyses or plant evaluations to demonstrate compliance with the Commission's regulations for fire protection (10 CFR 50.48), environmental qualification (10 CFR 50.49), pressurized thermal shock (10 CFR 50.61), anticipated transients without scram (10 CFR 50.62), and station blackout (10 CFR 50.63).

The fire detection and protection system is in scope for license renewal for the following reasons:

- It contains NSR SCs whose failure could prevent satisfactory accomplishment of any of the functions identified in 10 CFR 54.4(a)(1).
- It contains SCs relied on in safety analyses or plant evaluations to perform a function that demonstrates compliance with the Commission's Regulations for fire protection (10 CFR 50.48).

LRA Section 2.3.3.B.13, states that the FP foam subsystem components subject to an AMR consist of one water header valve. LRA Table 3.3.2.B-13 list valve environments as in air, dried air or gas, raw water low flow. In addition to the water supply portion of the FP foam subsystem, additional system components include two foam concentrate storage tanks, four foam concentrate pumps, a foam water ratio flow proportioner, numerous valves exposed to foam concentrate and valves exposed to foam water mixture, and a piping distribution system exposed to both foam concentrate and foam water mixture.

Fire fighting foam is an alkaline material and may contribute to internal corrosion of tanks, pumps and piping. This potential corrosion mechanism is a long-lived aging mechanism.

Explain the apparent exclusion of the FP foam subsystem including foam concentrate tanks, foam concentrate pumps, valves, ratio flow proportioner and piping from the scope of license renewal and from requiring an AMR.

#### RAI 2.3.3.B.13-4

LRA Section 2.1.4 describes the criteria for selecting structures, systems and components that are within the scope of license renewal. It states in part,

10 CFR 54.4(a)(3) states that SSCs WSLR include all SSCs relied on in safety analyses or plant evaluations to demonstrate compliance with the Commission's regulations for fire protection (10 CFR 50.48), environmental qualification (10 CFR 50.49), pressurized thermal shock (10 CFR 50.61), anticipated transients without scram (10 CFR 50.62), and station blackout (10 CFR 50.63).

The fire detection and protection system is in scope for license renewal for the following reasons:

- It contains NSR SCs whose failure could prevent satisfactory accomplishment of any of the functions identified in 10 CFR 54.4(a)(1).
- It contains SCs relied on in safety analyses or plant evaluations to perform a function that demonstrates compliance with the Commission's Regulations for fire protection (10 CFR 50.48).

UFSAR Section 9A.3.1.2.5.4 states that fusible link-actuated heat vents are provided in the turbine building roof. Fusible links are set high enough to preclude release due to a steam leak. These vents are provided to reduce the possibility of roof collapse in the event of a fire on the operating level.

Fusible links are not described in LRA Section 2.3.3.B.13. The LRA does not have a section pertaining to Turbine Building HVAC similar to the Section 2.3.3.A.26 Unit 1 turbine building HVAC so that the turbine building heat removal system is not described in the LRA.

LRA Section 2.3.3.B.9 control building HVAC states that fire dampers are included within the scope of license renewal and are included in the aging management program. LRA Table 3.3.2.B.9 states that aging management of fire dampers will be included in the one time inspection program. Heat sensitive fusible links are composed of heat sensitive solder and are long lived passive components. Explain the apparent exclusion of the heat sensitive fusible links in the turbine building heat removal system and fire dampers from the scope of license renewal and from requiring an AMR. Additionally, explain how the one time inspection program will provide adequate aging management of fire damper (and the Turbine Building heat exhaust system fusible links if included).

#### RAI 2.3.3.B.13-5

The diesel engine-driven fire pump, diesel engine is depicted on drawing LR-43A-0 at coordinates G7. There is an AMR boundary flag located immediately upstream of the diesel engine on the fuel oil supply piping that identifies upstream piping as part of the fuel oil supply

pipng system scope and the diesel engine as part of the FP program scope. There is another AMR boundary flag at coordinated G-7, immediately downstream of the diesel engine, between the diesel engine and the pump that indicates that the diesel engine is excluded from requiring an AMR. Explain the apparent discrepancy between the LR drawing and the AMR boundary flags.

RAI 2.3.3.B.13-6

LR drawing LR-43B-0, at location H3 depicts that piping upstream of valve V737 is subject to an AMR. The piping downstream of V737 continues to the Radwaste building via the yard on LR-43H-0 at location B10 where the piping is depicted as requiring an AMR, however, piping between V737 and the Radwaste building in the yard appears to be excluded from requiring an AMR. This portion of the FP system contains passive long-lived components and is required to perform the system level intended functions. Explain the apparent exclusion of this portion of the FP system from requiring an AMR.

RAI 2.3.3.B.13-7

LR drawing LR-43E-0 at location H11, depicts an AMR boundary symbol downstream of valve V775 indicating that no AMR is required. The piping on each side of valve is "red" indicating that each section of piping upstream and downstream of V775 is subject to an AMR. This portion of the FP system contains passive long-lived components and is required to perform the system level intended functions. Explain the apparent exclusion of this portion of the FP system from requiring an AMR.

RAI 2.3.3.B.13-8

LR drawing LR-43E-0 depicts the FP water spray system for 1C RFP spray as requiring an AMR. The FP water spray system for RFP's 1A & 1B are depicted as not requiring an AMR. This portion of the FP system contains passive long-lived components and is required to perform the system level intended functions. Explain the apparent exclusion of this portion of the FP system from requiring an AMR.

RAI 2.3.3.B.13-9

LR drawing LR-43F-0 at location K-4 depicts piping from the FP from the underground to piping located within the condensate storage tank building. A pipe that "T's off" to valve V811 zone 902 NW (W-72) is depicted as not being subject to an AMR for the components in this portion of the system. The line number for this piping is 2-FPW-6-490-4. The change in the AMR requirements is shown by the branch line not being highlighted in "red". There is no AMR boundary flag depicting the change in AMR requirements. The non-highlighted piping appears to support the system level intended functions of the FP system and contains passive, long-lived components. Explain the apparent exclusion of this portion of the FP system from requiring an AMR.

RAI 2.3.3.B.13-10

LR drawing LR-43F-0 depicts the FP system for zone 902 and 905 at locations K-4 and J-2, respectively. Portions of each of these systems are shown as not requiring an AMR. It appears that the portions of the FP system support the system level intended functions of the FP system and contain passive, long-lived components. Explain the apparent exclusion of the portions of the FP system from requiring an AMR.

RAI 2.3.3.B.13-11

LR drawing LR-43G-0 at location E-4 shows piping to valve V1027 as requiring an AMR. The piping to V1027, however, is not highlighted in "red" nor is there an AMR boundary flag shown on the LR drawing. It appears that this portion of the FP system supports the system level intended functions of the FP system and contain passive, long-lived components. Explain the apparent exclusion of this portion of the FP system from requiring an AMR.

RAI 2.3.3.B.13-12

LR drawing LR-43H-0 depicts piping to pressure switches 821, 823, 824, and 825 as requiring an AMR and are highlighted in "red". However, piping to similar pressure switches 820, 828, and 822 are not highlighted in "red" nor are there AMR boundary flags shown on the LR drawing. It appears that these portions of the FP system supports the system level intended functions of the FP system and contain passive, long-lived components. Explain the apparent exclusion of this portion of the FP system from requiring an AMR.

RAI 2.3.3.B.13-13

LR drawing LR-43H-0 depicts piping to valve tamper switches 696, 695, 691, 693, 697, 695, and 717 as requiring an AMR and are highlighted in "red". However, piping to similar tamper switches 716, 719, 762, and 721 are not highlighted in "red" nor are there AMR boundary flags shown on the LR drawing. It appears that these portions of the FP system supports the system level intended functions of the FP system and contain passive, long-lived components. Explain the apparent exclusion of these portions of the FP system from requiring an AMR.

RAI 2.3.3.B.13-14

LR drawing LR-44A-0 at location H10 depicts a section of 1 inch pipe downstream of FCV-164 not highlighted in "red", nor identified by an AMR boundary flags. This 1 inch pipe connects two sections of pipe that are highlighted in "red." It appears that the 1 inch portion of the FP system supports the system level intended functions of the FP system and is passive and long-lived. Explain the apparent exclusion of this portion of the FP system from requiring an AMR.

RAI 2.3.3.B.13-15

LR drawing LR-44A-0 at location H10 depicts pipe to drains P2A and P2B and pipe downstream of V41 at location A10 as requiring an AMR and are highlighted in "red". However, similar piping at locations D10, to drains P1A and P1B and pipe downstream of V90 at location L10 are not highlighted in "red" nor are there AMR boundary flags shown on the LR drawing. It appears that these portions of the FP system support the system level intended functions of the FP

system and contain passive, long-lived components. Explain the apparent exclusion of these portions of the FP system from requiring an AMR.

RAI 2.3.3.B.13-16

LR drawing LR-44A-0 at location C6 depicts piping to valves V145 and V52 not requiring an AMR. This pipe is connected to a pipe that is highlighted in "red". There is no AMR boundary flag at this location. It appears that these portions of the FP system support the system level intended functions of the FP system and contain passive, long-lived components. Explain the apparent exclusion of these portions of the FP system from requiring an AMR.

RAI 2.3.3.B.13-17

LR drawing LR-45C-0 at location H2 depicts valve SV145 as not requiring an AMR. Similar valves such as SV151, SV152 and SV155 are depicted as requiring ARM. Valve SV145 supports the system level intended functions of the FP system and is considered a long lived passive component. Explain the apparent exclusion of valve SV145 from an AMR.

RAI 2.3.3.B.13-18

LR drawing LR-45C-0 at location G4 depicts piping downstream of valve SV153 as requiring an AMR. Similar piping configurations such as downstream of valves SV156, SV171 and SV172 are depicted as not AMR. It appears that these portions of the FP system support the system level intended functions of the FP system and contain passive, long-lived components. Explain the apparent exclusion of these portions of the FP system from an AMR.

RAI 2.3.3.B.13-19

LR drawing LR-45C-0 depicts piping downstream of valves SV268, SV267 and SV 265 as not requiring an AMR. Similar piping downstream of valves SV255, SV269, SV260, SV261, SV262, SV263, SV264, and SV270 is depicted as requiring an AMR. It appears that the piping downstream of valves SV268, SV267 and SV 265 support the system level intended functions of the FP system and contain passive, long-lived components. Explain the apparent exclusion of these portions of the fire protection FP system from an AMR.

RAI-2.3.3.B.13-20

LR Drawing 46A-0 at location B9 depicts piping to valve SOV139, at Halon storage bottle TK4B as requiring an AMR. Similar piping to other solenoid valves are depicted as not requiring an AMR. It appears that the piping these other solenoid valves support the system level intended functions of the FP system and contain passive, long-lived components. Explain the apparent exclusion of these portions of the FP subsystem from an AMR.

RAI-2.3.3.B.13-21

Various LR drawings depict tamper switches for water supply valves as requiring an AMR. Other LR drawings also depict valve tamper switches for the foam and CO<sub>2</sub> subsystems as not requiring an AMR. Valve tamper switches support the system level intended functions of the

FP system and are considered long lived passive components. Explain the apparent exclusion of foam and CO<sub>2</sub> valve tamper switches from an AMR.

RAI-2.3.3.B.13-22

NMP 2 UFSAR Section 9A.3.1.2.5, "Detailed Fire Hazard Analysis by Building," includes descriptions of drains and smoke removal for various buildings. NMP 2 UFSAR Section 9A.3.5.12 describes the floor drains that are provided to collect and remove FP system water discharge. This section states that drains are designed for capacity of 70 gpm. It is not clear from review of the LRA that drain capacity is included within the scope of license renewal and require an AMR. Confirm that drains are within scope of license renewal and subject to an AMR or explain their exclusion. Describe the drain capacity an AMR program.

RAI 2.3.3.B.13-23

NMP 2 UFSAR Section 9A.3.1.2.5.10 describes the reactor building FP program. LR drawing LR-43C-0 at location C5 depicts the dry pipe sprinkler system for RR passage as not highlighted in "red". It appears that this portion of the FP system performs system level intended functions and contains passive, long-lived components. Explain the apparent exclusion of this portion of the FP system from requiring an AMR.

RAI 2.3.3.B.13-24

NMP 2 UFSAR Section 9.5.1.2.14 describes structural steel FP coating. It is not clear from review of the LRA, that the FP coatings for structural steel and steel embedded in fire barriers are included within the scope of license renewal and require an AMR. Confirm that structural steel FP coatings are within scope of license renewal and subject to an AMR or explain their exclusion.

RAI 2.3.3.B.13-25

NMP 2 UFSAR Section 9.5.1.2.16 describes criteria for fire resistance of interior finishes. It is not clear from review of the LRA, that interior finishes are included within the scope of license renewal. Confirm that interior finishes are within the scope of license renewal and subject to an AMR or explain their exclusion.

RAI 2.3.3.B.13-26

LRA Section 2.4.B identifies structures that are included within the scope of license renewal. UFSAR Appendix 9A identifies structures that are included in the FP licensing basis and thus should be considered within the scope of license renewal. The LRA does not include the CST structure and the Normal Switchgear Building that are included in UFSAR Appendix 9A. These structures support FP functions. They are considered long lived passive components. Explain their apparent exclusion from an AMR.

RAI 2.3.3.B.13-27

NMP 2 UFSAR Section 9A.3.6.2.6 requires at least 350 gallons of fuel in the fire pump diesel fuel oil storage tank. LR drawing LR-43A-0 shows level instrumentation consisting of air tubing

and other components supplying the level indicating instrumentation for fuel oil storage tank 2-FOF-TK1, excluded from the scope of license renewal and from requiring an AMR. Explain the apparent exclusion of these components from the scope of license renewal and from requiring an AMR.

#### **(4) Section 3.3 AMR Table 3.3.2.B-13 - NMP 2 Fire Detection and Protection System**

##### RAI 2.3.3.B.13-28

NUREG-1801, GALL Report, describes requirements for aging management of the fire protection water system based on the combination of component type, material, and environment.

LRA Table 3.3.2.B-13, Auxiliary Systems, for the NMP 2 fire detection and protection system, summarizes the AMP for each of the combinations mentioned above. When the combinations do not exactly match the requirements of the GALL, the LRA Table includes a note indicating that the prescribed aging management program has been modified for use or that another aging management program is being used.

For the combination of flow elements, gray cast iron, raw water, and low flow, Note "Q" indicates that the selective leaching program is being used in addition to the fire water system program to manage loss of material.

Additionally, Note "11" indicates that flow elements are not specifically identified in GALL Chapter VII for the fire protection system.

For the staff to complete its review, further information is required regarding the use of the selective leaching program to manage loss of material. Supply the portions of the selective leaching program that are applicable to the combination of flow elements, gray cast iron, raw water, and low flow. Include program documents and procedures credited for managing the loss of material for this combination.

##### RAI 2.3.3.B.13-29

NUREG-1801, GALL Report, describes requirements for aging management of the fire protection water system based on the combination of component type, material, and environment.

LRA Table 3.3.2.B-13, Auxiliary Systems, for the NMP 2 fire detection and protection system, summarizes the AMP for each of the combinations mentioned above. When the combinations do not exactly match the requirements of the GALL, the LRA Table includes a note indicating that the prescribed AMP has been modified for use or that another AMP is being used.

For the combination of heat exchangers, carbon or low alloy steel (yield strength <100 ksi) and ductile/malleable cast iron, raw water, low flow, Note "6" indicates that the fire water system program has been modified to manage loss of material in heat exchangers which are not specifically identified in GALL Chapter VII for the fire protection system.

For the staff to complete its review, further information is required regarding the use of the fire water system program to manage loss of material for heat exchangers. Supply the fire water system program documents and procedures that are applicable to the combination of heat exchangers, carbon or low alloy steel (yield strength <100 ksi) and ductile/malleable cast iron, raw water, low flow that are credited with managing loss of material in heat exchangers.

RAI 2.3.3.B.13-30

NUREG-1801, GALL Report, describes requirements for aging management of the fire protection water system based on the combination of component type, material, and environment.

LRA Table 3.3.2.B-13, Auxiliary Systems, for the NMP 2 fire detection and protection system, summarizes the AMP for each of the combinations mentioned above. When the combinations do not exactly match the requirements of the GALL, the LRA Table includes a note indicating that the prescribed AMP has been modified for use or that another AMP is being used.

For the combination of manifold, carbon or low alloy steel (yield strength <100 ksi) and ductile/malleable cast iron, raw water, low flow, Note "26" indicates that the Fire Water System Program has been modified to manage loss of material in manifolds which are not specifically identified in GALL Chapter VII for the fire protection system.

For the staff to complete its review, further information is required regarding the use of the Fire Water System Program to manage loss of material for manifolds. Supply the Fire Water System Program documents and procedures that are applicable to the combination of manifolds, carbon or low alloy steel (yield strength <100 ksi) and ductile/malleable cast iron, raw water, and low flow that are credited with managing loss of material in manifolds.

RAI 2.3.3.B.13-31

NUREG-1801, GALL Report, describes requirements for aging management of the fire protection water system based on the combination of component type, material, and environment.

LRA Table 3.3.2.B-13, Auxiliary Systems, for the NMP 2 fire detection and protection system, summarizes the AMP for each of the combinations mentioned above. When the combinations do not exactly match the requirements of the GALL, the LRA Table includes a note indicating that the prescribed AMP has been modified for use or that another AMP is being used.

For the combination of orifices, copper alloys (Zinc  $\leq$ 15%), raw water, and low flow, Note "7" indicates that the Fire Water System Program has been modified to manage loss of material in manifolds which are not specifically identified in GALL Chapter VII for the fire protection system.

For the staff to complete its review, further information is required regarding the use of the fire water system program to manage loss of material for manifolds. Supply the Fire Water System Program documents and procedures that are applicable to the combination of orifices, copper alloys (Zinc  $\leq$ 15%), raw water, and low flow, that are credited with managing loss of material in manifolds.

RAI 2.3.3.B.13-32

NUREG-1801, GALL Report, describes requirements for aging management of the fire protection water system based on the combination of component type, material, and environment.

LRA Table 3.3.2.B-13, Auxiliary Systems, for the NMP 2 fire detection and protection system, summarizes the AMP for each of the combinations mentioned above. When the combinations do not exactly match the requirements of the GALL, the LRA Table includes a note indicating that the prescribed AMP has been modified for use or that another AMP is being used.

For the combination of orifices, wrought austenitic stainless steel, raw water, low flow, Note "H" indicates that the fire water system program has been modified to manage cracking in addition to loss of material.

Additionally, Note "7" indicates that orifices are not specifically identified in GALL Chapter VII for the fire protection system.

For the staff to complete its review, further information is required regarding the use of the fire water system program to manage cracking and loss of material. Supply the Fire Water System Program documents and procedures that are applicable to the combination of orifices, wrought austenitic stainless steel, raw water, and low flow that are credited with managing cracking and loss of material.

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