



September 16, 2005

10 CFR 54

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

Palisades Nuclear Plant  
Docket 50-255  
License No. DPR-20

NMC Responses to NRC Requests for Additional Information Relating to License  
Renewal dated August 23, August 26, and August 31, 2005

In letters dated August 23, 2005 (ML052360026) and August 26, 2005 (ML052370327), and August 31, 2005 (ML052430767), the Nuclear Regulatory Commission (NRC) requested additional information regarding the License Renewal Application for the Palisades Nuclear Plant. This letter responds to those requests.

Enclosures 1, 2, and 3 provide the text of, and the NMC response to, each NRC request.

In addition, on August 24, 2005, a follow up question was received regarding NMC's July 1, 2005 response to NRC RAI B2.1.5-1. Enclosure 4 provides the text of, and the NMC response to, that question.

Please contact Mr. Darrel Turner, License Renewal Project Manager, at 269-764-2412, or Mr. Robert Vincent, License Renewal Licensing Lead, at 269-764-2559, if you require additional information.

Summary of Commitments

This letter withdraws one commitment identified in the NMC letter dated July 1, 2005, and replaces it with the following Preliminary Commitment (i.e., subject to acceptance in the NRC SER for the renewed operating license):

Visual inspections of a sample of buried carbon, low-alloy, and stainless steel components will be performed within ten years prior to entering, and within ten years after entering, the period of extended operation. Prior to the tenth year of each period, NMC will perform an evaluation of available data to determine if

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sufficient opportunistic inspections have been performed within that period to assess the condition of the components. If insufficient data exists, focused inspection(s) will be performed as needed.

I declare under penalty of perjury that the foregoing is true and correct. Executed on September 16, 2005.



Paul A. Harden  
Site Vice President, Palisades Nuclear Plant  
Nuclear Management Company, LLC

Enclosures (4)

CC Administrator, Region III, USNRC  
Project Manager, Palisades, USNRC  
Resident Inspector, Palisades, USNRC  
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**ENCLOSURE 1**

**NMC Responses to NRC Requests for Additional Information (ML052360026)  
Dated August 23, 2005**

**(3 Pages)**

Enclosure 1  
NMC Responses to NRC Requests for Additional Information (ML052360026)  
Dated August 23, 2005

**RAI 2.3.1-2**

Scoping boundary drawing LR 201, Sheet 2 indicates pressurizer safety valves are in scope of license renewal. However, LRA Table 2.3.1-1 does not identify pressurizer safety valves separately as being within scope. Please indicate which line item in LRA Table 2.3.1-1 includes the subject component.

**NMC Response to NRC RAI 2.3.1-2**

In LRA Table 2.3.1-1, Pressurizer relief [safety] valves (RV-1039, 1040 & 1041) are included in component type "Non-CASS Valves in PCS and Connected Systems".

Enclosure 1  
NMC Responses to NRC Requests for Additional Information (ML052360026)  
Dated August 23, 2005

**RAI 2.3.2-3**

On page 2-71 of the LRA it states the major components of the seven mechanical subsystems of the Engineered Safeguards System. However, in LRA Table 2.3.2-1 and supplemental letter dated May 5, 2005, the following components are not identified as within scope. Please provide justification why the following components are not in scope or submit an AMR for the stated components.

- (a) LPCI control valves
- (b) LPCI injection header
- (c) Containment Spray headers

**NMC Response to NRC RAI 2.3.2-3**

Palisades does not have "LPCI control valves" or an "LPCI Injection header" but it does have Containment Spray headers.

The most comparable component to LPCI control valves would be the Low and High Pressure Safety Injection valves. These valves have motor operators. The motor operators were screened out as active components. The valve bodies are in scope and were evaluated as part of Engineered Safeguards. In the LRA these valves were included in the line items of Table 2.3.2-1 on page 2-80 and in Table 3.2.2-1 on page 3-76. However, to provide improved clarity for NRC review, Tables 2.3.2-1 and 3.2.2-1 were revised and submitted to the NRC in an NMC letter dated August 27, 2005. These clarified tables have consolidated the various valve components into the new consolidated component type "Valves" which includes the subject valve bodies.

The most comparable component to an LPCI Injection header would be the safety injection piping that supplies low and high pressure safety injection flow to the Primary Coolant System. This piping is included in the Piping & Fittings line item of Table 2.3.2-1.

The containment Spray header piping is included in the Piping & Fittings line item of Table 2.3.2-1.

Enclosure 1  
 NMC Responses to NRC Requests for Additional Information (ML052360026)  
 Dated August 23, 2005

**RAI 2.3.3-1**

Scoping boundary drawing LR 202, Sheets 1 and 1A indicate boric acid pumps and filters are in scope of license renewal. However, LRA Table 2.3.3-1 does not identify boric acid pumps and filters as being within scope. Please indicate which line item in LRA Table 2.3.3-1 includes the subject components.

**NMC Response to NRC RAI 2.3.3-1**

NMC's LRA Supplement Letter, dated May 5, 2005, added the line items "Pumps" to Tables 2.3.3-1 and 3.3.2-1 with the intended function of Fluid Pressure Boundary. This line item includes the Concentrated Boric Acid Pumps. Table 2.3.3-1 does not itemize filters as a separate line item. Therefore, a new line item for filters is hereby added to Table 2.3.3-1 with intended functions of Fluid Pressure Boundary and Filtration. Corresponding entries are also added to Table 3.3.2-1, as follows:

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG -1801 Volume 2 Line Item	Table 1 Item	Notes
Filters	Fluid Pressure Boundary	Stainless Steel	Plant Indoor Air (Ext)	None	None Required			H
			Treated Water (Int)	Loss of Material	Water Chemistry Program			H, 330
	One-Time Inspection						H, 330	
	Filtration							

Note 330, found on LRA page 3-200, reads, "This component does not have temperatures > 140°F. Therefore, cracking due to stress corrosion cracking is not a potential aging mechanism."

**ENCLOSURE 2**

**NMC Responses to NRC Requests for Additional Information (ML052380035)  
Dated August 26, 2005**

**(2 Pages)**

Enclosure 2  
NMC Responses to NRC Requests for Additional Information (ML052380035)  
Dated August 26, 2005

**RAI 2.3.2-1**

For Palisades containment spray subsystem described in LRA Section 2.3.2.1, valves and flow elements that are included in the scope of license renewal on LRA drawings LR-M-203, Sheet 2 and LR-M-204, Sheets 1 and 1A are not listed in LRA Table 2.3.2.1. Clarify whether these components are within 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 these components are excluded from the scope of license renewal and not subject to an AMR, provide justification for the exclusion.

**NMC Response to NRC RAI 2.3.2.1**

Valves and flow elements that are described in LRA Section 2.3.2.1, are included in the scope of license renewal, in accordance with 10CFR54.4(a), and are subject to an AMR in accordance with 10CFR54.21(a)(1).

As discussed in the response to NRC RAI 2.3.2-3 above, revised Tables 2.3.2-1 and 3.2.2-1 were provided to the NRC in an NMC letter dated August 27, 2005. These clarified tables have the various valve components consolidated into the component type "Valves" which includes the subject valve bodies.

Flow elements are included in the "Piping and Fittings" line items within these tables.



Enclosure 2  
NMC Responses to NRC Requests for Additional Information (ML052380035)  
Dated August 26, 2005

**RAI 2.3.3-9**

Palisades Nuclear Plant's VAS as described in LRA Section 2.3.3.9 and in Table 2.3.3.9, "Heating Ventilation and Air Conditioning System," identifies the Component Group requiring aging management review and their intended functions. However, LRA Table 2.3.3.9 does not list all components of the systems as highlighted in drawings LR-M-208, Sheets 1, 1A, and 1B, LR-M-218, Sheets 1, 2, 4, 5, 6A, and 7 and LR-M-658, Sheet 1. For example, Table 2.3.3.9 does not list the associated components such as filter housings, damper housings, fan housings, valve bodies etc. Clarify whether these components and all other applicable components of the system, are within 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 these components are excluded from the scope of license renewal and not subject to an AMR, provide justification for the exclusion.

**NMC Response to NRC RAI 2.3.3.9**

LRA Table 2.3.3.9 does include the components of the VAS System highlighted in drawings LR-M-208, sheets 1, 1A, and 1B; LR-M-218, Sheets 1,2,4,5, 6A, 7; and LR-M-658, sheet 1. As examples, filter housings are included in the LRA Table 2.3.3.9 line item "Filters/Strainers" on LRA page 2-131, damper housings are included in line item "Dampers" on LRA page 2-131, fan housings are included in line item "Blowers Fans Compressor Vacuum" on LRA page 2-130, and valve bodies are included in line item "Valves & Dampers" on LRA page 2-131.

These components and other applicable components of the VAS System, highlighted on the drawings listed on LRA page 2-130, are within the scope of license renewal, in accordance with 10CFR54.4(a), and subject to an AMR in accordance with 10CFR54.21(a)(1).

**Enclosure 3**

**NMC Responses to NRC Requests for Additional Information (ML052430767)  
Dated August 31, 2005**

**(8 Pages)**

**Enclosure 3**  
**NMC Responses to NRC Requests for Additional Information (ML052430767)**  
**Dated August 31, 2005**

**RAI 2.3.3.7-1**

LRA Section 2.3.3.7, on Page 2-114, states that the boundaries of the portions of the Fire Protection System within the scope of license renewal include five legs that tap off the fire main loop to supply various sprinkler systems, deluge systems and hose stations within the auxiliary building, turbine building, intake structure, and hydrant stations.

LRA Section 2.1.1.1 identifies the current licensing basis as a plant information source for license renewal. The current licensing basis for fire protection is contained in the PNP fire hazards analysis (FHA), 10 CFR Part 50 Appendix R analysis and fire protection safety evaluation report(s).

License renewal Drawing, LR-216, Sheet 2, shows fire hose stations FHS 1, FHS 6, FHS 2 and FHS 4 (Locations F-3 and F-4) as outside the scope of license renewal. Based on the information available in the PNP current licensing basis, the staff cannot determine if these fire hose stations should be excluded from the scope of license renewal.

In order for the staff to complete its review, provide the fire area and the room number in which these fire hose stations are located. Justify the exclusion of these fire hose stations from the scope of license renewal in accordance with the requirements of 10 CFR Part 54.4(a)(3).

**NMC Response to NRC RAI 2.3.3.7-1**

FHS 1 is located in the Auxiliary Building, elevation 649', in room 405 and is not located in a Palisades Fire Zone Area. It is located in an administrative area over the Instrument & Control Shop, which is not located near equipment in scope of License Renewal.

FHS 2 is located in the Auxiliary Building, elevation 611', in room 210 and is not located in a Palisades Fire Zone Area. It is located in the Auxiliary Building Access Control Area, which is not located near equipment in scope of License Renewal.

FHS 4 is located in the Auxiliary Building, elevation 611', in room 216 and is not located in a Palisades Fire Zone Area. It is located in an Auxiliary Building hallway, which is not located near equipment in scope of License Renewal.

FHS 6 is located in the Auxiliary Building, elevation 625', in room 731 and is located in Palisades Fire Zone Area #27. It is located in the Volume Reduction Area (equipment retired in place), and is not located near equipment in scope of License Renewal.

**Enclosure 3**  
**NMC Responses to NRC Requests for Additional Information (ML052430767)**  
**Dated August 31, 2005**

**RAI 2.3.3.7-3**

The PNP Plant Fire Hazards Analysis (FHA) Report, Section II, "Definitions," states that a fire area, as used in Appendix R, is defined as an area sufficiently bounded to withstand hazards associated with the area and, as necessary, to protect important equipment within the area from fire outside the area. The FHA report describes Fire Areas 1 through 19 and 21 through 36. Each fire area evaluation contains a section, "Fire Barriers Defining the Areas." These fire barriers are included in the current licensing basis and are within the scope of license renewal. Fire Area 9, "Screen House (Intake Structure)," describes "A radiant energy shield wall and a horizontal distance of at least 20' separates one diesel fire pump from the others..."

LRA Section 2.3.3.7 of the fire protection system states, "The Fire Protection System (FPS) includes the diverse design and operational features intended to prevent and mitigate the effects of fires. Building structures have been designed and arranged to prevent the spread of fire and to ensure integrity of redundant safe shutdown systems and areas."

LRA Section 2.4.7, "Intake Structure," lists building framing-concrete, below grade (wall, foundation, slab, grout, reinforcement, trenches, cable pits, tunnels, etc.) as a component group subject to an AMR. Although fire barrier is identified as one of intended functions for this component group, based on review of the above LRA sections it is not clear that all fire barriers and the radiant energy shield wall in the screen house (intake structure) described in the Fire Hazards Analysis (Fire Area 9) are included within the scope of license renewal.

Confirm that all fire barriers and components such as, doors, dampers and penetration seals described in the plant FHA report are included within the scope of license renewal or provide information to describe why any of the fire barriers or the radiant energy shield are excluded from the scope of license renewal.

**NMC Response to NRC RAI 2.3.3.7-3**

Fire barrier commodities are in scope of license renewal and are included in the Miscellaneous and Bulk Commodities section of the LRA. See LRA Table 2.4.8-1, Miscellaneous Structural and Bulk Commodities on page 2-244 and 2-245, and Table 3.5.2-8 on page 3-362 to 3-370. The radiant energy shield in the intake structure is specifically included in component type "Fire Barrier - Intake Structure Bldg, Carbon Steel, Protected" and is shown on pages 2-245 and 3-365.

**Enclosure 3**  
**NMC Responses to NRC Requests for Additional Information (ML052430767)**  
**Dated August 31, 2005**

**RAI 2.3.3.7-4**

The current licensing basis for fire protection is contained in the Plant Fire Hazards Analysis (FHA) Report, 10 CFR Part 50 Appendix R analysis, and fire protection safety evaluation report (SER). The plant FHA describes Fire Areas 25A, South Heating Boiler Room, and 25B, North Heating Boiler Room, located in the turbine building elevation 590'. The fire hazards analysis describes each of these rooms as being protected by automatic wet pipe suppression systems.

License renewal drawing LR-216, Sheet 2, depicts sprinkler systems in the following areas as outside the scope of license renewal: boiler rooms, office (elevation 607'), cold chemical and IC labs (elevation 590'), and office (elevation 590') at Location F-7 and maintenance storage (elevation 590'), and tech and maintenance office (elevation 590').

Provide the basis for excluding the sprinkler systems for the above-mentioned rooms from the scope of license renewal or revise the license renewal drawings accordingly.

**NMC Response to RAI 2.3.3.7-4**

The subject rooms do not contain safety related equipment, and they are not required to achieve Safe Shutdown for a regulated event. These rooms have sprinklers for loss prevention/property protection purposes only. Therefore, the sprinkler systems in these rooms are not in the scope of license renewal.

**Enclosure 3**  
**NMC Responses to NRC Requests for Additional Information (ML052430767)**  
**Dated August 31, 2005**

**RAI 2.3.3.7-5**

LRA Section 2.4.3, on page 2-225, System Function Listing, S0100-FP, has a comment that containment exterior wall is an Appendix R fire barrier. However, LRA Table 2.4.3-1 does not include fire barrier/protection as an intended function.

Provide information to clarify that Table 2.4.3-1 does not need to describe fire protection as an intended function, or revise the table to define fire protection as an intended function.

**NMC Response to RAI 2.3.3.7-5**

Table 2.4.3-1 addresses GALL Section IIA Containment concrete and steel commodities. GALL Section VIIG Fire Protection commodities, including concrete fire barriers/walls, are included in LRA Section 2.4.8, Miscellaneous and Bulk Commodities. The "Fire Barrier" intended function for the Containment exterior wall is shown as part of component type "Fire Barrier - Containment Bldg - Concrete, Exposed" in Table 2.4.8-1 (page 2-245 of the LRA).

Therefore, it is not necessary for Table 2.4.3-1 to include Fire Barrier as an Intended Function, since this function of the Containment exterior wall is included in Table 2.4.8-1.

**Enclosure 3**  
**NMC Responses to NRC Requests for Additional Information (ML052430767)**  
**Dated August 31, 2005**

**RAI 2.3.3.7-6**

LRA Section 2.4.6 for the feedwater purity building, on Page 2-234, states that the water purity building is within the scope of license renewal based on fire protection requirements to achieve safe shutdown. It also states that, on page 2-235, the feedwater purity boiler room in the south end of the building houses a diesel fuel oil transfer pump and piping, and this is the only area in this structure that is within the scope of license renewal. Further, the system function S0800-FP, on Page 2-235, states that the building provides structural and/or functional support to fire protection-related components. However, LRA Table 2.4.6-1 does not identify fire protection/barrier as an intended function.

Provide information to clarify that fire barrier is not an intended function for the feedwater purity building, or revise Table 2.4.6-1 to define fire barrier as an intended function.

**NMC Response to RAI 2.3.3.7-6**

The safety related fuel oil transfer pump that is credited with providing makeup fuel oil to the emergency diesel generators (EDG) is located in the Intake Structure. A non-safety related backup pump is also located adjacent to the safety-related pump in the same room. In the event of a fire in this room, coincident with a loss of offsite power, there is non-safety related fuel oil transfer piping located in the boiler room of the Feedwater Purity Building that serves as an alternate source of fuel oil for the EDGs. The feedwater purity building only provides structural and functional support for these fuel oil components since simultaneous fires in both areas in conjunction with a loss of offsite power event do not need to be postulated. If there were a fire that would affect the fuel oil components in the feedwater purity building, the primary and backup pumps in the Intake Structure, which is a separate structure remote from the Feedwater Purity Building, would still be available. Based on this description, the water purity building does not have a "Fire Barrier" intended function. The appropriate intended function is shown in LRA Table 2.4.6-1 as "Structural Support for Regulated Events" (i.e., provides structural and/or functional support to fire protection-related components).

**Enclosure 3**  
**NMC Responses to NRC Requests for Additional Information (ML052430767)**  
**Dated August 31, 2005**

**RAI 2.3.3.7-7**

LRA Section 2.4.10 of the turbine building, on Page 2-251, states that the turbine building also contains fire barrier concrete commodities credited in fire protection requirements for achieving safe shutdown. Further, the system function listing, on Page 2-252 states that this section includes fire protection as one of the functions. However, LRA Table 2.4.10-1 does not include fire protection as an intended function.

Provide information to clarify that fire barrier is not an intended function for the turbine building, or revise Table 2.4.10-1 to define fire barrier as an intended function.

**NMC Response to RAI 2.3.3.7-7**

LRA Table 2.4.10-1 addresses GALL Section IIIA Turbine Building concrete and steel commodities. GALL Section VIIG Fire Protection commodities, including concrete fire barriers/walls, are included in LRA Section 2.4.8, Miscellaneous and Bulk Commodities. The "Fire Barrier" intended function for the turbine building walls is shown as part of component type "Fire Barrier - Turbine Bldg - Concrete, Exposed" in Table 2.4.8-1 (page 2-245 of the LRA) with the aging management evaluation summary provided in Table 3.5.2-8 (page 3-367 of the LRA).

Therefore, "Fire Barrier" is not listed as an intended function in Table 2.4.10-1, since this function of the Containment exterior wall is included in Table 2.4.8-1.



**Enclosure 3**  
**NMC Responses to NRC Requests for Additional Information (ML052430767)**  
**Dated August 31, 2005**

**RAI 2.3.3.7-9**

The following components are shown on the fire protection license renewal drawings as within the scope of license renewal. However, LRA Table 2.3.3-7 of the fire protection system does not list these components as being subject to an AMR. These components serve a pressure boundary intended function, and are passive and long-lived. Clarify if these components are included in Table 2.3.3-7 as part of any other component group. If not, justify the exclusion of these components from being subject to an AMR in accordance with the requirements of 10 CFR Part 54.21(a)(1).

- a. Flexible connections on LR-216, Sheet 1, at Locations B-4, C-4, and E-5.
- b. Lube oil coolers on LR-216, Sheet 1, at Locations B-4 and F-5.

**NMC Response to RAI 2.3.3.7-9**

(a) The flexible connections for fire pump diesel drivers K-5 and K-10 are not subject to AMR because they are short-lived. They are periodically replaced under the preventive maintenance program every 3 years.

(b) As discussed in LRA Section 2.3.3.6 on page 2-105, the fire pump diesel drivers are addressed as part of the Emergency Power System. The diesel fire pump lube oil coolers are shown as subject to AMR in Table 2.3.3-6 on page 2-112, and AMR results are included in Table 3.3.2-6 on page 3-142.

**Enclosure 3**  
**NMC Responses to NRC Requests for Additional Information (ML052430767)**  
**Dated August 31, 2005**

**RAI 3.3.2.7-1**

The PNP fire hazards analysis (FHA), in fire area 9 screen house (intake structure), describes, "A radiant energy shield wall ... separates one diesel fire pump from the others..." Table 3.5.2-8 of the LRA does not specifically identify radiant energy shields, but references carbon steel fire barriers in the auxiliary building, intake building and containment. It is unclear what these metal barriers are and what their function is. Table 3.5.2-8 references the Fire Protection Program, Section B2.1.10, as the Aging Management Program addressing these barriers. However, Section B2.1.10 does not specifically address radiant energy shields, and refers to the Structural Monitoring Program, Section B2.1.19 for fire barriers, such as walls, floors, and ceilings. Identify where the radiant energy shields referenced in the FHA are included in the AMR and which program manages their aging effects. Also verify that the Table 3.5.2-8 should include a reference to the Structural Monitoring Program, Section B2.1.19 for these barriers or identify where in the Fire Protection Program, Section B2.1.10 they are addressed.

**NMC Response to RAI 3.3.2.7-1**

The radiant energy shields in question are included in component types "Fire Barrier - Auxiliary Building - Carbon Steel, Protected", "Fire Barrier - Intake Structure - Carbon Steel, Protected", and "Fire Barrier - Containment Bldg - Carbon Steel, Protected" as indicated in LRA Table 3.5.2-8, pages 3-362 and 3-365. They include the radiant energy shield between the diesel fire pumps in the intake structure, and radiant energy shields in cable trays in the auxiliary building and in containment. They are age managed by the Fire Protection Program as indicated in Table 3.5.2-8.

In LRA Section B2.1.10, on page B-71 among others, fire barrier inspections are described as being part of the Fire Protection Program. The radiant energy shields are included in the group of fire barriers subject to inspection by this program.

**Enclosure 4**

**NMC Response to NRC Follow up Question Regarding NRC RAI B2.1.5-1**

**(1 Page)**

Enclosure 4

NMC Response to NRC Follow up Question Regarding NRC RAI B2.1.5-1

**NRC Follow up Question Regarding NRC RAI B2.1.5-1:**

NMC responded to RAI-B2.1.5-1 (Buried Services Corrosion Monitoring Program) in a letter dated July 1, 2005. In this response NMC stated that it would perform inspections within ten years after entering the period of extended operation. This commitment is not consistent with the level of inspection that the NRC staff has determined is appropriate for managing this aging effect. The NRC staff has determined that inspections performed to confirm that coating and wrapping are intact for steel components are an effective method to ensure that corrosion of external surfaces has not occurred and the intended function is maintained. For stainless steel components, visual inspection of the external surfaces is sufficient to assure that the intended function is maintained. Prior to entering the period of extended operation, the applicant is to verify that there is at least one opportunistic or focused inspection is performed within the past ten years. Upon entering the period of extended operation, the applicant is to perform a focused inspection within ten years, unless an opportunistic inspection occurred within this ten-year period. Any credited inspection should be performed in areas with the highest likelihood of corrosion problems, and in areas with a history of corrosion problems.

Please confirm if at Palisades NMC will perform the recommended inspections discussed above or provide a basis for the inspections that will be performed for the buried components.

**NMC Response to NRC Follow up Question Regarding RAI B2.1.5-1:**

In response to this revised NRC position, incorporated in the September 2005 draft of NUREG 1801 Revision 1 (released in August 2005), NMC hereby withdraws the subject commitment provided in the letter of July 1, 2005. A new Preliminary Commitment (i.e., subject to acceptance in the NRC SER for the renewed operating license), is provided, to read as follows:

Visual inspections of a sample of buried carbon, low-alloy, and stainless steel components will be performed within ten years prior to entering, and within ten years after entering, the period of extended operation. Prior to the tenth year of each period, NMC will perform an evaluation of available data to determine if sufficient opportunistic inspections have been performed within that period to assess the condition of the components. If insufficient data exists, focused inspection(s) will be performed as needed.