

# NRC INSPECTION MANUAL

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## INSPECTION PROCEDURE 71111 ATTACHMENT 21N.04

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### AGE-RELATED DEGRADATION

Effective Date: 01/01/2024

PROGRAM APPLICABILITY: IMC 2515 A

CORNERSTONE:           Initiating Events  
                              Mitigating Systems  
                              Barrier Integrity

INSPECTION BASES:       IMC 0308 Attachment 2

#### SAMPLE REQUIREMENTS:

Sample Requirements		Minimum Baseline Sample Completion Requirements		Budgeted Range	
Sample Type	Section	Frequency	Sample Size (per site)	Samples (per site)	Hours per Site
Age-Related Degradation	03.01	Quadrennial	8	8-16	210 +/- 32

#### 71111.21N.04-01   INSPECTION OBJECTIVE

- 01.01 To verify that engineering performance and maintenance activities to address age-related degradation for structures and components (SCs) are being conducted in a manner that provides reasonable assurance of the safe operation of the plant.
- 01.02 To verify that age-related degradation for plant SCs is appropriately identified, addressed, and corrected.

#### 71111.21N.04-02   GENERAL GUIDANCE

##### 02.01 Sample Selection

A given sample should be at the component/structure level focusing on the sub-components that have a higher potential to be susceptible to the effects of aging. Both active and passive components within the component/structure may be reviewed in each sample. Passive components that are reviewed need not be restricted to long-lived if available information indicates that the passive component has a potential to be susceptible to the effects of aging. Alternatively, a given sample may consist of a component that has a higher potential to be susceptible to the effects of aging and is installed in multiple systems. Should a search result identify only one component

installed in a single system/structure, then that may be an appropriate sample as well. An inspection plan should be developed that identifies the samples to be reviewed. The inspection team leaders should ensure that a mix of active and passive SCs are reviewed and that the plan is not overly focused on either active or passive SCs.

The sample selection process should use a risk-informed, performance- or results-based approach to identify risk informed SCs susceptible to age-related degradation. Team leaders should focus on engineering and maintenance activities credited to maintain SC functionality. Site specific and industry performance data should be used to focus inspection activities to identify structure or component samples. SCs that have a potential to be susceptible to the effects of aging, that have indicators that they have age-related issues, or are susceptible to age-accelerating phenomenon should be selected.

The following should be considered to determine which SCs will be selected for review:

- a. NRC Generic Communications (Bulletins, Generic Letters, Information Notices, etc.) for equipment failures associated with degradation mechanisms.
- b. Industry operating experience associated with age-related degradation (Team leads should consult with the Generic Communications and Operating Experience Branch (IOEB) to identify potential samples).
- c. Industry operating experience associated with abnormal/accelerated wear or other degradation.
- d. Title 10 CFR 21 Reports applicable to the site.
- e. Site specific functional failures.
- f. Site specific performance indicators.
- g. Site specific corrective actions associated with component failures.
- h. Site specific corrective actions associated with aging-related degradation.
- i. Site specific corrective actions associated with abnormal/accelerated wear or other degradation.
- j. Walkdowns performed as part of the site visit.
- k. Resident inspector input.
- l. Samples should comprise a balanced selection of single components and subsystem samples that involves both active and passive functions.

The sample selection preference, from most preferred to least preferred, is as follows:

1. Risk-significant SCs with prior history of failures or inoperability potentially due to age-related degradation.
2. Risk-significant SCs exposed to environments that could cause age-related degradation based on condition monitoring or no replacement interval (i.e., corrosive

environment, radiation, vibration, elevated temperature, etc. not under 10 CFR 50.49 requirements).

3. Risk-significant SCs exposed to environments that could cause age-related degradation (i.e., corrosive environment, radiation, vibration, elevated temperature, etc. not under 10 CFR 50.49 requirements) with replacement intervals that differ from vendor input or operating experience.
4. Risk-significant SCs with engineering evaluations that accepted the use of degraded or non-conforming components.
5. Risk-Informed Safety Class (RISC)-3 SCs (for licensees that implement 10 CFR 50.69).
6. Non-safety-related SCs within the scope of 10 CFR 50.65 or 10 CFR 54.

Considerations for sample selection should prioritize risk-significant SCs within scope of the maintenance rule, RISC-1 and RISC-2 SCs (for licensees that implement 10 CFR 50.69), and long-lived passive SSCs identified during, or after, the license renewal process. RISC-3 SCs may be considered for sample selection; however, given the low safety significant function, inspector judgement should be exercised in order to ensure that oversight activities are not overly focused on RISC-3 SCs. Issues associated with RISC-3 SCs, such as programmatic and common cause issues, have the potential to undermine the categorization process and its results.

If information is available, sample selection may also consider: (1) if the SC is not subject to replacement based on a qualified life or a specified time period, (2) how licensee self-imposed vendor recommendations might be utilized, and (3) if the SC is located in an area that could accelerate the aging process.

A pre-inspection site visit (i.e., information gathering trip) may be performed at the discretion of the inspector to aide in sample selection. Operating experience searches should be performed prior to the visit. Enclosure 1 of this inspection procedure contains a template for notifying licensees of documents requested for the pre-inspection site visit as well as documents that may be requested for the conduct of the inspection.

## 02.02 Sample Examples

A component sample could be a discrete component such as a pump or valve or a group of identical components used in several systems such as a particular type of valve actuator, breaker, or relay. A sample could involve a section or train of system piping including the pipe protection subsystem (coating, cathodic protection or insulation credited to preclude moisture intrusion/corrosion). A subsystem or support system to a risk-significant component such as an emergency diesel generator (EDG) or high-pressure coolant injection (HPCI) pump skid could constitute a sample. This could involve an EDG electric generator, an EDG jacket cooling system, or an EDG lube oil subsystem. Similarly, an HPCI pump lube oil subsystem comprised of a few active and passive components could constitute a sample. A structural sample could consist of a safety-related structure or a portion of a structure particularly susceptible to age-related degradation such as the underwater portion of a safety-related intake structure.

- a. **For each inspection sample, determine the intended safety functions of the SC and identify maintenance and engineering activities (preventative, corrective, testing, inspection, and condition monitoring procedures) credited to address age-related degradation.**

Specific Guidance

For each inspection, sample consider reviewing the sources of information for determining the SCs intended function.

The inspectors should identify the applicable maintenance, surveillance, testing, inspection, and condition monitoring requirements, and the licensee credits to address age-related degradation. Sources include:

1. Functions described in the Updated Final Safety Analysis Report.
2. Functions associated with the Maintenance Rule SSC scoping criteria.
3. For sites that have implemented 10 CFR 50.69: (1) safety-significant functions identified during the RISC categorization process, and (2) alternative treatment requirements.
4. Aging Management Programs (AMPs) as well as technical specifications (TS) specified safety functions and functions described in TS Bases and the Technical Review Manual.
5. Procedures used to implement AMPs associated with the inspection sample (for long-lived passive SCs). Inspectors should consider if licensee commitments and license conditions associated with license renewal have been implemented. Inspectors should also consider AMPs, or if there should have been AMPs established, for long-lived passive SSCs.
6. SSCs that are within scope of 10 CFR 50.49, "Environmental qualification of electric equipment important to safety for nuclear power plants." SSCs must be replaced or refurbished at the end of designated life unless ongoing qualification demonstrates that the item has additional life.
7. 10 CFR 50.55a, "Codes and standards" requirements.
8. Testing and periodicities required by 10 CFR 50, Appendix J, "Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors."
9. Licensee preventative maintenance templates, repetitive work orders, preventative maintenance schedules, corrective maintenance work orders, and vendor manual maintenance recommendations.
10. Engineering technical evaluations for component conformance acceptability, preventative maintenance interval, commercial grade dedication documents, and operability assessments for degraded conditions.

11. Other sources of information that licensees may utilize as a self-imposed standard (e.g., vendor documents, technical requirements manual, etc.)

- b. Verify and evaluate the maintenance and engineering activities credited to identify, monitor, and/or assess degradation (preventative, corrective, testing, engineering evaluations, inspection, and condition monitoring) are being completed with standards and procedures, at an appropriate interval, and acceptance criteria are appropriate.**

Specific Guidance

The last 5 years of maintenance, surveillance, testing, inspection, and condition monitoring results should be considered as a starting point for review. Inspector judgement should be exercised to either extend or reduce the review period as needed based on (1) stated periodicities, (2) whether or not acceptance criteria are being met, (3) if adverse trends are identified, and (4) if any SC goals or performance criteria are in place (e.g., if existing SC performance criteria is stated as no more than X failures in Y years, then, as a minimum, the last Y years should be reviewed). The overall goal is to review recent licensee performance with regards to aging SC performance or conditions. Inspectors should also consider observing work activities that may be in progress.

In addition to records review, walkdowns should be considered to independently assess the material condition and status of SCs. For SCs located in areas that are not normally accessible, inspectors should coordinate with the licensee to determine if there are opportunities to access the area. If the area is inaccessible, inspectors should review records of video, pictures, test results, or other records completed by the licensee to assess the condition of the SC.

Inspectors should evaluate the basis for preventative maintenance and/or condition monitoring interval to determine if the assumed operating conditions that form the basis for the interval are consistent with the actual SC operating conditions. Inspectors should review engineering evaluations for interval determination to verify if the assumptions are supported. For the sampled SCs, inspectors should consider if adverse trends identifying declining performance or conditions call into question acceptance criteria being met between stated periodicities.

Inspectors should be aware of NRC training regarding regulatory guidance on evaluating maintenance intervals. See TMS NRC Inspector Training Course, "Dispositioning Information Related to Service Life of Installed Safety-Related SSCs."

For SC samples selected, inspectors should determine if acceptance criteria were met. Additionally, inspectors should consider if the acceptance criteria were appropriate to identify the associated age-related degradation mechanism. Acceptance criteria will vary for the material being inspected. Examples include: discoloration, cracking, crack growth, calculation of cycles, hardness, extent of corrosion, type of corrosion, etc.; or measure values such as friction factor, flaw depths, or deformation.

- c. **Verify that issues identified during the performance of maintenance, surveillance, testing, inspection, and condition monitoring are appropriately addressed, if applicable.**

Specific Guidance

Inspectors should review condition reports, maintenance rule functional failure evaluations, surveillance test results, and engineering technical evaluations to evaluate if the condition or issue described or assessed involved age-related degradation. Issues identified may include, but are not limited to, degradation and failures.

In instances where acceptance criteria were not met, inspectors should determine licensee performance to evaluate the adequacy of the task periodicity for the SC under review. Additionally, inspectors should review licensee's performance to evaluate the extent of condition such as additional examinations or testing, when applicable.

Consider whether the condition, problem, or failure called into question the ability of an SC to perform its TS specified safety function. Guidance can be found in Inspection Manual Chapter (IMC) 0326, "Operability Determinations."

For SCs covered by the licensee's quality assurance program, determine whether conditions adverse to quality were promptly identified and corrected, and if appropriate actions were taken for significant conditions adverse to quality.

Consider if the preventative maintenance program is consistent with the SC being considered as a Maintenance Rule A.2 system by evaluating if performance criteria were met. Consider if the SC should be considered an A.1 system and consider whether goals are established, and how industrywide operating experience is accounted for during establishment of such goals. If goals are not met, determine if appropriate corrective action is being taken.

For sites that have implemented 10 CFR 50.69, licensees may utilize their Maintenance Rule Process for performance monitoring of RISC-1 and RISC-2 SCs. Consider whether issues potentially impact the categorization assumptions or if adjustments to the treatment process should be made for RISC-1 and RISC-2 SSCs. For RISC-3 SSCs, determine whether conditions that impact performance of a safety-related function were corrected in a timely manner. For significant conditions adverse to quality, determine whether measures were taken to identify the cause of the condition and whether corrective actions were taken to preclude repetition. Consider whether issues potentially impact the categorization assumptions or if adjustments to the treatment process should be made for RISC-3 SCs.

For SCs covered by a license renewal AMP, determine whether appropriate actions are taken when AMP acceptance criteria are not met, considering any AMP provisions that identify specific follow-up actions.

**d. Verify whether periodic evaluations of maintenance effectiveness, feedback and process adjustments, and on-going reviews of operating experience are performed.**

Specific Guidance

For SC samples selected that are within scope of the Maintenance Rule, regulations require that performance and condition monitoring activities and associated goals and preventive maintenance activities shall be periodically evaluated. This evaluation of maintenance effectiveness is required per 10 CFR 50.65(a)(3). These evaluations shall be completed by the licensee at least every refueling cycle (provided that the interval does not exceed 24 months), and that, where practical, industrywide operating experience is being considered. For SC samples selected, determine licensee performance to complete these periodic evaluations and make adjustments related to the SC samples when necessary to ensure that the objective of preventing failures through maintenance is appropriately balanced against the objective of minimizing the SC unavailability due to monitoring or preventative maintenance.

For sites that have implemented 10 CFR 50.69: for all classes of RISC SSCs, determine whether the licensee periodically reviewed changes to the plant, operational practices, applicable plant and industry operational experience, and, as appropriate, updated the PRA and SSC categorization and treatment processes. This feedback and process adjustment is required per 10 CFR 50.69(e)(1). For SC samples selected, determine if such reviews were performed in a timely manner, and at a minimum, once every two refueling outages.

For SCs covered by a license renewal AMP, ongoing reviews of plant-specific and industry operating experience may have been established as an element of the approved AMP. For such cases, determine whether operating experience feedback is being used to update aging management activities, as appropriate.

71111.21N.04-04 REFERENCES

- 10 CFR 50.49, "Environmental qualification of electric equipment important to safety for nuclear power plants"
- 10 CFR 50.55a, "Codes and standards"
- 10 CFR 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants"
- 10 CFR 50.69, "Risk-informed categorization and treatment of structures, systems and components for nuclear power reactors"
- 10 CFR 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants."
- 10 CFR 50, Appendix J, "Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors"
- 10 CFR 54, "Requirements for renewal of operating licenses for nuclear power plants"

FR associated with finalization of 10 CFR 50.69 (69 FR 68008 dated November 22, 2004) FR associated with finalization of 10 CFR 54 (60 FR 22461 dated May 8, 1995)

IMC 0326, "Operability Determinations"

NEI 00-04, Revision 0, "10 CFR 50.69 SSC Categorization Guideline" (ML052910035)

NEI 13-01, Revision 0, "Reportable Action Levels for Loss of Emergency Preparedness Capabilities" (ML14197A206)

NEI 95-10, Revision 6, Industry Guideline For Implementing the Requirements of 10 CFR 54 - The License Renewal Rule" (ML051860406)

NRC Final License Renewal Interim Staff Guidance LR-ISG-2011-05, "On-going Review of Operating Experience" (ML12044A215)

NRC RG 1.160, Revision 4, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants" (ML18220B281)

NRC RG 1.188, Revision 2, "Standard Format and Content For Applications to Renew Nuclear Power Plant Operating Licenses" (ML20017A265)

NRC RG 1.201, Revision 1, "Guidelines for Categorizing Structures, Systems, and Components in Nuclear Power Plants According to Their Safety Significance" (ML061090627)

NRC RG 1.89, Revision 1, "Environmental Qualification of Certain Electric Equipment Important to Safety for Nuclear Power Plants" (ML003740271)

NUMARC 93-01, Revision 4f, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants" (ML18120A069)

NUREG-1022, Revision 3, "Event Report Guidelines 10 CFR 50.72 and 50.73" (ML13032A220)

NUREG-1022, Revision 3, Supplement 1, "Event Report Guidelines 10 CFR 50.72(b)(3)(xiii)" (ML14267A447)

NUREG-1801, Revision 2, "Generic Aging Lessons Learned (GALL) Report" (ML103490041)

END



## Appendix A: Background

In 2017 (ML17172A620) NRC staff created the Engineering Inspection Working Group (EIWG), to evaluate the engineering inspection program, identify gaps, and develop recommendations for inspection changes. The major changes to the program were developed into the recommendations of SECY-18-0113, "Recommendations for Modifying the Reactor Oversight Process Engineering Inspections," which was later withdrawn, updated, and streamlined into SECY-22-0053, "Recommendation for Modifying the Periodicity of Reactor Oversight Process Engineering Inspections." The EIWG identified aging-related degradation as an overall gap in the engineering inspections, as well as recommended aging management programs as a potential focused engineering inspection area. This inspection is being created to cover age-related degradation in both active and passive components and address the gaps and recommendations originally identified by the EIWG.

The NRC defines maintenance as the aggregate of those functions required to preserve or restore safety, reliability, and availability of plant structures, systems, and components (SSCs). Maintenance includes not only activities traditionally associated with identifying and correcting actual or potential degraded conditions (i.e., repair, surveillance, diagnostic examinations, and preventive measures), but extends to all supporting functions for the conduct of these activities.

### Applicable Regulations

The NRC regulations in 10 CFR 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants," (also known as the Maintenance Rule) help to assure proper plant maintenance and enhanced plant safety, particularly as plants age. The NRC also has many individualized requirements relative to maintenance (e.g., 10 CFR 50.34(b)(6)(iv), 10 CFR 50.36 technical specifications (TS), 10 CFR 50.49 environmental qualifications for electrical equipment, 10 CFR 50.55a inservice testing (IST) and inservice inspection (ISI) requirements, 10 CFR 50 Appendix B quality assurance, 10 CFR 50 Appendix J primary reactor containment leakage testing, etc.).

The maintenance rule involves:

- determining which SSCs are within scope;
- establishing and verifying that equipment performance criteria are met. If performance criteria are not met, goals and corrective action are established;
- periodically evaluating the effectiveness of the maintenance program. The evaluations take into account, where practical, industrywide operating experience; and
- for proposed maintenance activities, assessing and managing the risk.

NUMARC 93-01, Revision 4f, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants" (ML18120A069), provides guidance on implementing the Maintenance Rule. NUMARC 93-01, Revision 4f, is endorsed via NRC regulatory guide (RG) 1.160, Revision 4, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants" (ML18220B281).

The Atomic Energy Act and NRC regulations limit commercial power reactor licenses to an initial 40 years but also permit such licenses to be renewed under 10 CFR 54 "Requirements for Renewal of Operating Licenses for Nuclear Power Plants." However, some SSCs may have

been engineered on the basis of an expected 40-year service life. The period after the initial licensing term is known as the period of extended operation (PEO).

Additional background information can be found in the Federal Register (FR) associated with finalization of 10 CFR 54 (60 FR 22461 dated May 8, 1995), NUREG-1801, Revision 2, "Generic Aging Lessons Learned (GALL) Report" (ML103490041), NRC Final License Renewal Interim Staff Guidance LR-ISG-2011-05, "On-going Review of Operating Experience" (ML12044A215), NEI 95-10, Revision 6, Industry Guideline For Implementing the Requirements of 10 CFR 54 - The License Renewal Rule" (ML051860406), and NRC RG 1.188, Revision 2, "Standard Format and Content For Applications to Renew Nuclear Power Plant Operating Licenses" (ML20017A265).

Title 10 CFR 50.69, "Risk-informed categorization and treatment of structures, systems and components for nuclear power reactors," provides an alternative approach for establishing the requirements for treatment of SSCs using a risk-informed method that categorizes SSCs according to their safety significance. Licensees seeking to implement the provisions of 10 CFR 50.69 do so via a license amendment request that outlines the licensee's SSC categorization process. For sites that implement 10 CFR 50.69, SSCs are divided into one of four classes: (1) risk-informed safety class (RISC)-1: safety-related SSCs that perform safety significant functions; (2) RISC-2: non-safety-related SSCs that perform safety significant functions; (3) RISC-3: safety-related SSCs that perform low safety-significant functions; and (4) RISC-4: non-safety-related SSCs that perform low safety-significant functions. Safety-significant function means a function whose degradation or loss could result in a significant adverse effect on defense-in-depth, safety margin, or risk. Many NRC requirements associated with maintenance may no longer be fully applicable to RISC-3 and RISC-4 SSCs (e.g., maintenance rule, environmental qualifications for electrical equipment, IST and ISI requirements, quality assurance, primary reactor containment leakage testing, etc.). However, RISC-3 SSCs still need to remain capable of performing their safety-related functions and include provisions for testing. Technical specifications and any provisions associated with license renewal AMPs are still applicable to RISC-3 and RISC-4 SSCs. An analysis of the treatment of RISC SSCs can be found in the FR associated with finalization of 10 CFR 50.69 (69 FR 68008 dated November 22, 2004). As part of a feedback and process adjustment required under 10 CFR 50.69:

- a. RISC-1 and RISC-2 SSCs are monitored for performance in a manner that typically leverages Maintenance Rule requirements that may still be applicable;
- b. RISC-3 testing results are considered to determine if there are any adverse changes in performance. Adjustments are made as necessary to the categorization or treatment process for the RISC-3 SSC; and
- c. All RISC SSCs—changes to the plant, operational practices, applicable plant and industry operational experience—are periodically reviewed to determine if the SSC categorization and treatment processes need to be updated.

As indicated in the guidance section of the FR, NEI 00-04, Revision 0, "10 CFR 50.69 SSC Categorization Guideline" (ML052910035), provides guidance on implementing 10 CFR 50.69. Clarifications, limitations, and conditions on use of NEI 00-04 are set forth in section C of NRC RG 1.201, Revision 1, "Guidelines for Categorizing Structures, Systems, and Components in Nuclear Power Plants According to Their Safety Significance" (ML061090627).

END

## Enclosure 1: Documents requested for information gathering visit

The documents and information requested below should generally be made available to the inspection team for the team's use both on-site and off-site during the information gathering visit. Electronic format is the preferred media. If electronic media is made available via an internet based remote document management system, then the remote document access must allow inspectors to download, save, and print the documents in the NRC's regional office. Electronic media on compact disc or paper records (hard copy) are acceptable. At the end of the inspection, the documents in the team's possession will not be retained.

This document request is based on typical documents that a generic plant might have. As such, this document request is not meant to imply that any specific plant is required to have all of the listed documents. In addition, your plant specific document titles may vary from the document titles listed below.

Documents requested, **if available**:

1. list of 50.65 (a)(1) SSCs from the past 5 years
2. **list of maintenance rule** functional failures from the past 5 years
3. **most recent evaluation of maintenance effectiveness required per 10 CFR 50.65(a)(3)**
4. maintenance rule scoping and performance criteria **document**
5. **list of preventative maintenance deferrals and preventative maintenance change requests in the last 5 years**
6. **equipment reliability characterization and preventative maintenance program procedures**
7. **list of Title 10 CFR 21 Reports applicable to the site from the past 5 years**
8. site specific corrective actions associated with component failures, or tagged with "aging, "age-related", "wear", "accelerated wear", "abnormal wear", "accelerated degradation", "abnormal degradation", "**corrosion**", "**degradation**", etc.
9. **list of technical specification operability determinations from the past 5 years**
10. list of risk-significant long-lived passive SSCs (for licensees in the period of extended operation (PEO))
11. aging management programs (AMPs) **and any plant-specific or industry operating experience reviews that have been used to update aging management activities** (for licensees in the period of extended operation)
12. **list of top 100 most risk-significant structures and components. If possible, designate the component as active or passive in the risk ranking**
13. **list of RISC-1, RISC-2, and RISC-3 SSCs (for licensees that implement 10 CFR 50.69)**

14. safety significant functions identified during the RISC categorization process, and alternative treatment requirements (for licensees that implement 10 CFR 50.69)
15. last feedback and process adjustment required per 10 CFR 50.69(e)(1) (for licensees that implement 10 CFR 50.69)
16. site specific probabilistic risk assessment (PRA) identifying risk-significant functions
17. technical specifications and technical requirements manual, including applicable bases documents
18. list of systems (system numbers/designators and corresponding names)

## Enclosure 2: Documents Requested for Inspection

The team lead will identify samples (i.e., structures and components) after the information gathering visit. The documents and information requested below should generally be made available to the inspection team for the team's use both onsite and offsite during the inspection. Electronic format is the preferred media. If electronic media is made available via an internet based remote document management system, then the remote document access must allow inspectors to download, save, and print the documents in the NRC's regional office. Electronic media on compact disc or paper records (hardcopy) are acceptable. At the end of the inspection, the documents in the team's possession will not be retained.

This document request is based on typical documents that a generic plant might have. As such, this document request is not meant to imply that any specific plant is required to have all the listed documents. In addition, your plant-specific document titles may vary from the document titles listed below. We also request that the information provided be sorted by the list below for each sample.

1. list of corrective action documents for the last 10 years
2. maintenance, surveillance, testing, inspection, and condition monitoring testing requirements, acceptance criteria, and periodicities
3. bases documents associated with maintenance, surveillance, testing, inspection, and condition monitoring testing requirements, acceptance criteria, and periodicities
4. last two years of maintenance, surveillance, testing, inspection, and condition monitoring testing results; for periodicities greater than 2 years, the last two test results.
5. self-imposed and vendor recommendations
6. if available,
  - (a) Equipment reliability category/characterization (e.g., non-critical, run-to-maintenance, etc.)
  - (b) Preventative maintenance templates for the maintenance strategy
  - (c) System design basis documents and the specific Updated Final Safety Analysis Report section that describes the function
  - (d) PI&Ds and electrical one-line drawings
  - (e) Control circuit drawings
  - (f) Design/procurement specifications
  - (g) List of applicable modifications for the component

## Attachment 1: Inspection Notification Template

Template may be modified as needed by the issuing official

[Site VP name]  
Licensee Nuclear Department  
Licensee Corporation or Company  
Address

SUBJECT: [SELECTED NUCLEAR POWER STATION, UNITS 1 AND 2] –  
NOTIFICATION OF CONDUCT OF IP 71111.21N.04, “AGE-RELATED  
DEGRADATION”

Dear [site representative]:

The purpose of this letter is to notify you that the U.S. Nuclear Regulatory Commission (NRC) staff will conduct IP 71111.21N.04, “Age-Related Degradation” baseline inspection at [facility name, Units 1 and 2] in [month, year]. The inspection team will be led by [inspector name] from the NRC Region [#] Office. The team will be composed of personnel from the NRC Region [#] Office. The inspection will be conducted in accordance with IP 71111.21N.04.

The schedule for the inspection is as follows:

- Information gathering visit - week of [date]
- On-site inspection - weeks of [dates]

The purpose of the information gathering visit is to become familiar with the station maintenance, surveillance, testing, inspection, and condition monitoring programs, become familiar with plant layout, support identification of structures, systems, and components (SSCs) that will be reviewed during the inspection, and, as necessary, obtain plant specific site access training and badging for unescorted site access. An initial list of documents that the team will review during the information gathering visit are listed in enclosure 1.

During the information gathering visit, the team will also discuss the following inspection support administrative details: office space size and location; specific documents requested to be made available to the team in their office spaces; arrangements for reactor site access (including radiation protection training, security, safety, and fitness for duty requirements); and the availability of knowledgeable plant staff and licensing organization personnel to serve as points of contact during the inspection.

For SSCs that the inspection will review, an initial list of the documents the team will review during the conduct of the inspection are listed in enclosure 2. The team leader will contact you with identified SSCs. Also, personnel should be available at the site during the inspection who are knowledgeable regarding maintenance, surveillance, testing, inspection, and condition monitoring programs.

This letter does not contain new or amended information collection requirements subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). Existing information collection requirements were approved by the Office of Management and Budget, under Control Number 3150-0011. The NRC may not conduct or sponsor, and a person is not required to

respond to, a request for information or an information collection requirement unless the requesting document displays a currently valid Office of Management and Budget control number.

In accordance with 10 CFR 2.390 of the NRC rules and practices, a copy of this letter and its enclosures will be available electronically for public inspection in the NRC public document room or from the publicly available records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site.

Your cooperation and support during this inspection will be appreciated. If you have questions concerning this inspection, or the inspection team's information or logistical needs, please contact [inspector name], the team leader, in the Region [#] Office at [inspector's phone number].

Sincerely,  
[Branch Chief name], Chief  
[Branch]  
[Division]

Docket Nos.: 50-[No.]; 50-[No.]  
License Nos.: NPF-[No.], DPR-[No.]

Enclosure:

1. Documents requested for information gathering visit
2. Documents requested for inspection

cc: Distribution via Listserv

Attachment 2: Revision History for IP 71111.21N.04

Commitment Tracking Number	Accession Number Issue Date Change Notice	Description of Change	Description of Training Required and Completion Date	Comment Resolution and Closed Feedback Form Accession Number (Pre-Decisional, Non-Public Information)
	ML22210A107 12/20/22 CN 22-028	First issuance. Completed 4-year search for commitments and found none.  This IP is one of the Focused Engineering Inspections recommended by staff in SECY 18-0113.	Knowledge management sessions on procedure implementation to be conducted.	ML22278A445
	ML23192A837 07/12/23 CN 23-019	Editorial changes to address external and internal comments.	N/A	N/A
	ML23318A426 12/15/23 CN 23-037	Changes to reflect sample requirements based on feedback from the first few completed inspections. Also request for information changes to reflect team leader feedback.		ML23318A495