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April 12, 2018

Mr. John W. Thompson
Senior Nuclear Operations Engineer
Division of Inspection and Regional Support
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: NEI Comments on Draft Inspector Guidance: "Dispositioning Information Related to Service Life of Installed Safety-Related SSCs"

Project Number: 689

Dear Mr. Thompson:

The Nuclear Energy Institute (NEI)¹, on behalf of our members, appreciates the opportunity to provide comments on the subject Draft Inspector Guidance: "Dispositioning Information Related to Service Life of Installed Safety-Related SSCs".²

On September 14, 2017, the Committee to Review Generic Requirements (CRGR) conducted a meeting to hear concerns from the industry on the potential for unintended backfits as a result of the Draft Regulatory Issue Summary (RIS) on "Disposition of Information Related to the Time Period that Safety-Related Structures, Systems, or Components (SSCs) are Installed." At this meeting, industry representatives expressed concerns that the imposition of new or different staff positions on the treatment of vendor replacement or refurbishment information could result from lack of clarity in the draft RIS regarding:

- Appropriate classification of vendor information
- Misclassifying vendor information as design basis or supporting design basis information affects the regulatory consequences of not conforming to vendor recommendations
- Relevance of existing programs and requirements

¹ The Nuclear Energy Institute (NEI) is the organization responsible for establishing unified policy on matters affecting the nuclear energy industry, including the regulatory aspects of generic operational and technical issues. NEI's members include entities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel cycle facilities, nuclear materials licensees, and other organizations and entities involved in the nuclear energy industry.

² ML18024A272, Dispositioning Information Related to Service Life of Installed Safety-Related SSCs Inspector Guidance (Draft), dated February 2018.

- An overly narrow view of relevant programs and requirements can result in evolving standards regarding the need to conform to vendor recommendations, as well as the level of documentation and formality of evaluations required to disposition such recommendations

At the meeting, the industry made two recommendations for additional language to improve the clarity and accuracy of the draft RIS:

- 1) Vendor information is rarely considered plant design information and should not be treated as such. Insinuation that 10 CFR 50.2 and Criterion III applies to vendor information should be removed.
- 2) A well-supported maintenance/surveillance program, in conjunction with a good preventive maintenance program, is sufficient to ensure that equipment that meets the design/purchase specifications is qualified for the designed life.

Following the meeting, the CRGR recommended that further work on the draft RIS be discontinued, and that NRC staff focus instead on developing and delivering inspector training to "clarify the application of maintenance, surveillance, and vendor program information to minimize the potential for unintended backfits."³

NEI and its members have reviewed the proposed training. NRC has made some improvements in language and clarity in the transition from the draft RIS to the training presentation; we appreciate those efforts. Specifically, NRC has addressed aspects of the industry concerns above by including the following concepts:

- IEEE-323 and its associated regulatory guidance do not require licensees to define a specific service life or design life for safety related SSCs in mild environments;
- There is no regulatory requirement to define replacement/refurbishment intervals for all safety-related SSCs;
- It is not appropriate to cite Appendix B, Criterion III for a failure to adhere to vendor information, as there is no regulatory requirement to adhere to vendor information.

However, the proposed training does not appear to fully achieve the CRGR's desire for clarity or the industry's need for alignment with existing regulatory positions. It is unclear how inspectors would come away from this training with a fully aligned understanding of how service life is defined, how licensees may evaluate such a concept, and to which plant components such a concept would apply. This lack of clarity, paired with a lack of applicable regulation, creates the potential risk for inspector questions without bounds and regulation through the inspection process. Additionally, the implied relationship between vendor service life and operability is problematic, and the application of plant and industry operating experience in evaluating service life is not provided due credit. Finally, the training does not sufficiently discuss or credit the function of existing quality assurance programs to maintain the reliability of safety-related SSCs through

³ ML17276B156, COMMITTEE TO REVIEW GENERIC REQUIREMENTS: MINUTES OF MEETING NUMBERS 446 AND 447, dated October 17, 2017

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maintenance and inspection. These existing programs are consistent with the NRC position documented in NUREG-0800, Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition, Section 3.11.

Specific comments on the proposed training are included in the attachment to this letter.

A number of comments focus on inconsistent use of terminology. For example, "service life", "documented service life" and "defined service life" are used in the training for what appears to be the same intent. Furthermore, the industry recommends providing a line of sight from the regulations, NRC guidance and standards as to what is and what is not required with regard to service life early in the presentation. Finally, NEI believes that it is important for this training to include the existing NRC guidance documented in NUREG-0800, Section 3.11, as recommended to the CRGR in item number two above.

NEI and its members appreciate the continued dialogue on this important topic to ensure appropriate alignment between those who safely operate nuclear plants and those who inspect them. Following your review of the comments contained in this letter and the attachment, we welcome additional engagement at a public meeting specific to this topic.

If you need additional information, please contact Chris Earls at cee@nei.org or 202-739-8078.

Sincerely,

A handwritten signature in black ink, appearing to read "Gregory R. Cameron". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Gregory R. Cameron

Attachment

c: Mr. Chris Miller, NRR
Ms. Michele Evans, NRR
NRC Document Control Desk

ATTACHMENT | NEI Comments on Draft Inspector Guidance: "Dispositioning Information Related to Service Life of Installed Safety-Related SSCs"

Slide	Comment	Recommendation
3	"Documented service life" is not a defined term. In the context of this guidance, it appears that a vendor-recommended replacement interval could be considered a defined service life for a defined set of environmental conditions, etc.	Provide a definition for "documented service life" which considers various inputs (vendor recommendations, internal and industry operating experience, engineering judgment, etc.) and use consistently throughout the training.
3	Referring to "multiple instances" of "regulations not met" implies that there is a regulatory basis for service life. This is not consistent with an established staff position, and appears to establish that failure of equipment is not allowed by regulation.	Reword to clearly state that the concept of service life itself is not rooted in regulation.
4	The second bullet is vague and does not adequately address the reason for providing training.	Reword to state that Appendix B, Criterion III typically does not apply to service life. Also, provide a list of "other NRC regulatory requirements" that may be applicable, along with appropriate justification and examples of application.
5	Use of the term "defined service life" rather than "documented service life" as used previously implies they are different.	Define a term and use it consistently throughout the guidance.
5	The discussion of aging presented on this slide is not fully developed. Aging is not defined and is implied to be a failure mechanism.	Clearly answer the title question "is aging bad?" in the negative. Address that aging is a consequence to be managed through various engineering and maintenance programs.
6	The use/reference of the 2012 IOEB study is inappropriate. The data is dated. With no identification of the documented service life for the items in the data set, 15 or 20 years appears to be an irrelevant, arbitrary description without context. This slide implies that "operating equipment beyond documented service life without an adequate justification" and "Components with Greater than 15 or 20 Years of Service at Time of Failure" are the same thing. This is incorrect. The description further implies that there is endorsed guidance or a staff position on what constitutes "adequate justification."	Eliminate the slide and all reference to the 2012 IOEB study.

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7	The discussion/application of IN 2012-06 is misleading. The third bullet does not provide adequate context as to whether the EDG time delay relay failure was a single isolated case or a case of multiple failed devices. (If an isolated case, it may not be relevant here.) Of the "several events" attributed to IN 2012-06 only one was related to the effects of aging; the ultimate cause was failure to implement the performance monitoring that the licensee had concluded was needed.	Eliminate the slide or reword to more appropriately reference IN 2012-06 in the context of service life.
8	The two bullets presented under "General Case" are too vague and subject to individual interpretation.	Suggest changing 1st and 2nd bullets to: <ul style="list-style-type: none"> • Licensee becomes aware by receiving specific information that could affect the service life of an SSC or its ability to continue to perform its safety function(s) • This information is received through a formal distribution process, including, but not limited to vendor notices or bulletins, Part 21 notifications and NRC generic communications.
8	The discussion of "License Basis Case" seems to imply that license bases contain information related to time periods of installation, or that vendor information is part of the license basis.	Explicitly state that the license basis often does not specify a time period, and vendor manuals or similar information are informational/recommendations in nature, not license basis information themselves.
9	"...used or mentioned..." is too vague/unclear to be used in training.	Only information which is specifically referenced or credited with establishing a specific replacement or maintenance interval in license or design bases should be considered. Service life information for safety related SSCs is not design basis or supporting design basis information unless it has been developed under the controls of a Criterion III Appendix B design control program. Service life information is not licensing basis information unless it is described in the current licensing basis.
11	Defining "information" as something other than commonly understood is confusing.	Eliminate the introductory paragraph. Explain that the provided lists are all potential, though not all required inputs to a maintenance interval selection process.

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12	"Service life" is effectively unbounded. The admission that it has "various meanings based on context and situation" reinforces the need for the training.	Service Life should be defined, including its regulatory basis, for this guidance. It should not be left as a term with "various meanings." These definitions should align with IEEE 323 which does not define service life. Lacking a design life for an SSC, the time period from installation until retirement has been called service life. Note that design life may be in terms of operating time, operating cycles, and other performance intervals.
12	The industry cannot be effectively and consistently regulated to "awareness" or "perception". "Knowledge or perception of a situation or fact" is a poor definition for this application.	The discussion should clearly define that only information from an appropriate source (i.e. OEM, industry operating experience, etc.) and communicated formally to the station or broader industry constitutes awareness.
14	Equating the terms "run-to-failure" and "run to maintenance" is inappropriate. These terms do not usually mean the same thing. Typically, run to failure is an option available under the Maintenance Rule. Run to maintenance is the industry term for those items not under the Maintenance Rule. They should not be used interchangeably.	Clarify discussion.
15	<p>References to RG 1.33 on this slide are misleading. Appendix A of RG 1.33 actually states, in part...</p> <p>"Preventive maintenance schedules should be developed to specify lubrication schedules, inspections of equipment, replacement of such items as filters and strainers, and inspection or replacement of parts that have a specific lifetime such as wear rings."</p> <p>RG 1.33 does not imply, as this training appears to, that there should necessarily be procedures requiring replacement of all safety-related equipment. Inspection and repair are clearly also considered appropriate.</p>	Clarify application/reference of RG 1.33 or remove.
17	The discussion could be read to imply that evaluation of information for applicability is a part of the corrective action	State explicitly that evaluation of information is not a corrective action or included in CAP.

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Slide	Comment	Recommendation
	process.	
18	The discussion of 10 CFR 50.49 is incomplete and potentially misleading.	<p>Add "and are intended only for a pre-determined set of electric equipment that is required to function in a harsh environment during and after a design basis event" at the end of the first bullet.</p> <p>10 CFR 50.49 actually requires that we demonstrate that each SSC within the scope (1) Is qualified for its application; and (2) Meets its specified performance requirements when it is subjected to the conditions predicted to be present when it must perform its safety function up to the end of its qualified life.</p> <p>A direct quote would be better than paraphrasing here.</p>

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Slide	Comment	Recommendation
20-22	<p>The discussion of the Maintenance Rule does not fully explore its application to service life.</p> <p>The bullets are not internally consistent with each other. Slide 20 second bullet specifically is not consistent with the statements of consideration for 50.65 or expectations of activities that make up an effective maintenance program. There appears to be an indirect reference to a requirement that goes beyond Maintenance Rules requirements for monitoring and a measuring effectiveness. In the Description of the Rule as published in 56 FR 31306 (Final Rule) specifically state that paragraph (a)(2) is not intended to be used to justify continuing the status quo, where the status quo is not effective in ensuring acceptable levels of availability and reliability. Bullets 2 and 4 on this slide are not consistent with the intent of the rule.</p> <p>Statements made will lead the inspectors to give no credit for Maintenance Rule and increased monitoring of MR scope equipment even though the Maintenance Rule states: "...shall monitor the performance or condition of structures, systems, or components, against licensee-established goals, in a manner sufficient to provide reasonable assurance that these SSCs as defined in paragraph (b) of this section are capable of fulfilling their intended functions."</p> <p>Finally, direction is given to the Inspector to evaluate ALL safety related equipment designated a run-to-failure. This scope is not consistent with focus of inspection, and increases the scope with no substantiated benefit.</p>	<p>Clarify discussion. NEI and its members suggest application of the Maintenance Rule be a specific topic of discussion at a public meeting where these comments are considered.</p>

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24	<p>This slide contains several misleading messages:</p> <p>The first bullet point provides a much broader scope than SSCs for which there is actual service life documentation. It seems to imply that all SSCs require a defined service life, and conflicts with slide 23. Although slide 23 states that there is no regulatory requirement to define replace/refurb intervals for safety SSCs, slide 24 states that it is licensee's responsibility to provide assurance that safety related SSCs can perform their function over plant life. This could be implied to be in a documented format.</p> <p>The focus should be on function, not individual devices; we want to prevent common mode failures of multiple redundant equipment.</p> <p>Although the second bullet incorrectly implies otherwise, a vendor manual is not a documented service life requirement. At best, it is a recommendation for a set of conditions.</p> <p>Collectively, these bullets seem to inappropriately establish a staff position. 1st bullet states it is the responsibility of the licensee without providing the context of the requirement; 2nd bullet doesn't provide any distinction on documentation hierarchy, is treating service life as its own input as opposed to an input used in a collective to make decisions, and the third bullet is not consistent with the enforcement manual and policy.</p>	<p>Clarify discussion. NEI and its members suggest consideration of the information contained on slides 23 and 24 be a specific topic of discussion at a public meeting where these comments are considered.</p>
30	<p>Industry PM templates referenced in the guidance (slides 30 & 51) refer to them as generic and imply that they do not account things like duty cycle, industry OE, etc. These PM templates have included this type of information into their basis.</p>	<p>Clarify discussion.</p>

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Slide	Comment	Recommendation
35	2nd sub-bullet is referring to harsh environment considerations, and that is for EQ Program equipment in compliance with 10 CFR 50.49. Thus, this bullet does not apply to service life or this training.	Recommend removing this bullet to eliminate potential confusion for the inspectors from this training.
36	This slide carries an essential point -- that a concept of "service life" put forth by this guidance which relies on vendor guidance has no regulatory relationship with Appendix B, Criterion III. It is unfortunate that this essential information is highlighted so late in the presentation.	Highlight earlier and more explicitly in training.
38	It seems inappropriate to suggest inspection findings for nonsafety-related SSCs without a single example of a situation that would warrant such a finding.	This slide should be eliminated or clarified to reflect circumstances that could justify such a finding.
45	"Technical basis" would be a better term than "technical analysis." Analysis implies a calculation.	Replace wording.
39-52	These slides appear to use CAP, Appendix B, Operability, and Functionality nearly interchangeably.	<p>Correctly establish where CAP/Appendix B is the appropriate process, and the limited instance where Operability may be considered for issues subject to this training.</p> <p>NEI and its members suggest consideration of the relationship of service life to CAP and Operability is a specific topic of discussion at a public meeting where these comments are considered.</p>
48	This slide suggests that surveillance and testing may not provide adequate assurance, without providing any discussion in the training why this may not be the case. There is no guidance as to whether inspection programs are sufficient for certain kinds of SSCs.	Provide explanation that a robust inspection/surveillance program with appropriately reviewed and/or trended results may provide adequate assurance.
48	Last bullet states, "It is not appropriate to run 'critical' SSCs to failure. [i.e., 'critical' as defined in NUMARC 93-01]. NUMARC 93-01 does not define 'critical'.	Remove bullet.