



August 29, 2013

Mr. Ben Poulet, Director (Acting)
Point Lepreau and Gentilly 2 Regulatory Program Division
Canadian Nuclear Safety Commission
P.O. Box 1046, Station B
Ottawa, Ontario
K1P 5S9

Dear Mr. Poulet:

Subject: PLGS Comments on REGDOC-2.6.3, Aging Management

The purpose of this letter is to provide the New Brunswick Power – Nuclear’s comments on CNSC Regulatory Document REGDOC- 2.6.3, Aging Management. NBPN has collaborated with AECL, Bruce Power and Ontario Power Generation to review proposed Regulatory Document 2.6.3 in detail and these comments are provided in Attachment 1.

Regulatory Documents are intended to provide direction/guidance on the practical implementation of Regulations where other guidance is not readily available. Regulatory Document 2.6.3, Aging Management, is an example of a specific requirement applicable to nuclear staff whose activities are of critical importance to nuclear plant safety. NBPN does have foremost concerns with some elements of the proposed document. Specifically,

- 2.6.3 does not address the role of “System Health Monitoring Programs” and their important role in station nuclear power plant aging management
- 2.6.3 uses the term “AMPs” to refer to Aging Management Programs. This abbreviation is identical to other acronyms used in the industry. Further, it also is used in the document to refer to Aging Management Plans.
- NBPN understands 2.6.3 to apply to all licensees (i.e., multi, single, research units). Clarification should be considered that recognizes different approaches required to implement 2.6.3 for differences in design, management structure, etc.
- 2.6.3 recognizes various CSA standards associated with Aging Management, but one does not currently exist specific to NPP Aging Management
- Section 4.5 Condition Assessments is missing a Guidance title after the second paragraph that would clearly delineate between compliance versus guidance expectations.

The industry has collaborated to define the potential impact of implementing this regulatory document in addition to the concerns expressed above, as well as, provided suggested changes for improving the overall program (Attachment 1).

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NBPN is prepared to meet co-operatively with the CNSC to clarify our comments and concerns. We look forward to sharing our experience and programs in this area in an effort to assist in defining a basis and structure for Regulatory Document 2.6.3.

If you require additional information, please contact **Brent Smith** at 506- 659-7648 or **BrSmith@nbpower.com**.

Sincerely,

A handwritten signature in black ink, appearing to read 'WJL Sean Granville', written over the printed name.

Sean Granville
Site Vice President and Chief Nuclear Officer

SG/BS/sd

cc. Pierre Bélanger, Lisa Love-Tedjoutomo, (CNSC - Ottawa)
CNSC Site Office
Al MacDonald (NBPN)

Attachments:

1. Industry Comments on REGDOC-2.6.3, Fitness for Service Aging Management

Attachment 1

Industry Comments on REGDOC-2.6.3, Fitness for Service Aging Management

Item	Document Section/ Excerpt of Section	Industry Issue	Suggested Change(s) (if applicable)	Major Comment/ Request for Clarification ¹	Impact on Industry, if major comment
1.	General	Incorrectly refer to CSA N284.5 Standard throughout document, where it is clear reference should be to CSA N285.5 Standard.	Replace “CSA N284.5 Periodic inspection of CANDU nuclear power plant containment components” with “CSA N285.5 Periodic inspection of CANDU nuclear power plant containment components” Replace in Page 6 & in Page 13, References.		
2.	Preface Section, Page i “Important Note”	The “Important note” box is cut off. There are words that are not legible at the bottom of the box.	Increase the size of the box.		
3.	Preface (see also Glossary definition 'licensing basis') 'Where referenced in a license either directly or indirectly (such as through licensee-referenced documents), this document is part of the licensing basis for a regulated facility or activity'.	The implication of this statement is that any document the utility references becomes part of the licensing basis. This should not be the case.	This has to be consistent with the INFO document on licensing basis		
4.	General	Reference numbers in text are not aligned with list of references provided on pages 28 and 29.	Fix cross references to list on pages 28/ 29.		
5.	General	Document does not specifically address the role of station “System Health monitoring programs” and their important role in station aging management.	Suggest adding under section 4.4.3 a reference to system health monitoring	Major impact –	Industry can demonstrate compliance with REGDOC 2.6.3 through system health monitoring
6.	General	The document uses the term “AMPS “ to refer to Aging Management programs (section 1.1) ,however throughout the document the term AMPS also refers to aging management plans .	Recommend not using the acronym AMPS use the terms AM program or AM plan where appropriate	Major comment – too much potential for confusion	This could lead to inconsistency across the industry. We already see this between LCMPs and PIPs.
7.	General	NBPN understands that REGDOC-2.6.3 is intended to apply to all licensees whether they be a multi-unit NPP, a single unit NPP or a research reactor. It is understood that the goal of an aging management program as described by REGDOC-2.6.3 remains the same regardless of the type of nuclear facility.	It should be acknowledged that the fundamental differences in design, management structure, and complexity of each type of facility may dictate different approaches to achieve the common goal of an Aging Management Programme.	Major Comment	The impact of not addressing industry comments here is that smaller licensees will be adversely impacted in terms of program effort

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8.	General Comment SSC AMPs	The 'AMPs' for the individual SSCs are plans rather than programs	The document should recognize that some licensees use life cycle management plans ,others use Aging management plans		
9.					Concern is that interfaces between safety analysis and regulatory program branches may cause an escalation of requirements that may not be balanced or that may not complement one another.
10	Section 2 <i>General Concepts</i>	REGDOC-2.6.3 acknowledges CSA (including several CSA Standards/Series, e.g. CSA N285, N286, N287, N290.13) as an example of an “external outside support organization”. REGDOC-2.6.3 states that “in practice”, aging management requires the “involvement and support” of CSA standards (and other regulatory documents). In other words, these various CSA standards can, and do, serve as governance documents, or specific references, for elements of a station aging management program. REGDOC-2.6.3 goes on to say that these various CSA standards “contribute to aging management” but “that is not their primary purpose”.	No CSA Standard exists for NPP Aging Management. The CNSC and industry should consider the development of a CSA Standard specific to NPP Aging to provide clarity and specificity to implementation of an aging management program. Suggest that within the 5 year revision cycle for REGDOC 2.6.3 that a CSA standard be developed to replace the REGDOC	Major Comment	From a utility’s perspective, CSA Standards provide very specific requirements for program content, and hence, clarity. CSA standard development is also a collaborative effort between regulatory authorities, industry participants, and experts to produce a specific set of purposeful and practical requirements to achieve the intended goal of the standard.
11	Page 6, “Inspection and surveillance programs provide information used to confirm the current condition or fitness for service of these SSCs, but this information addresses only the CHECK activity in figure 1.	Assuming “these SSC’s” refers to reactor components, fuel channels, feeders, SGs etc., this statement disregards the information submitted to the regulator in accordance with CSA N285.4, which requires that the NPP submit inspection and assessment reports that must demonstrate the component remains fit for service until next PIP window. Therefore, N285.4 does not just require a CHECK of the current condition, it requires projecting forward. If component is not fit for service, standard requires the NPP to disposition (i.e. ACT by saying why it’s OK to return to power), set path forward (i.e. PLAN future inspection or mitigating action), execute subsequent inspection/maintenance (i.e. DO).	Suggest replacing with “Inspection and surveillance programs provide information used to confirm the current condition or fitness for service of these SSCs.”		
12	Section 2.2 (page 6)	The personifications used (e.g. ‘they’, ‘themselves’ are often not clear as to what the topic subject to which ‘they’ refers to. It is recommended to avoid these Personifications in an industry standard and regulatory document. It is recommended to remove ‘they’, and ‘themselves’ and replace with clear statements.	Page 6, second paragraph: While each of these facility programs ... Remove “in themselves”. Replaces with “While each of these facility programs and processes contribute to aging management, this is usually not their primary purpose or focus; none of these programs		

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			<p>or processes, in themselves, provides a complete program or process for managing the aging of SSCs.”</p> <p>Page 6, fourth paragraph: “They typically do not include passive,”</p> <p>Replace with: “Reliability and Maintenance programs [14, 15] typically do not include passive, long-life SSCs”</p>		
13	2.2 The PLAN activity involves coordinating, integrating, and modifying existing programs and activities that relate to managing the aging of a system, structure or component, and if necessary, developing new programs. This activity includes making provisions for spare parts and long-term service agreements with suppliers.	Do not see a special reason for using an example (highlighted) here while other steps do not follow the same path.	The PLAN activity involves coordinating, integrating, and modifying existing programs and activities that relate to managing the aging of a system, structure or component, and if necessary, developing new programs. ie remove the last sentence in section 2.2 subsection 2		
14	2.2 The DO activity is the minimization of expected degradation of a system, structure or component through its “careful” operation ...	The use of the term “careful” will lead to ambiguity	Remove the word careful		
15	2.2 In practice, effective aging management requires the involvement and support of many internal and external organizations, and essential facility programs and processes. Examples include:	These are not examples of support of many internal and external organizations, these are guidelines, standards, etc.	Retain the bullets “safety analysis “ etc but remove the specific examples of the standards		
16	2.2 “SSC-specific or mechanistic-based AMPs should be established and implemented in accordance	The examples “. . . For example, the critical life-limiting NPP SSCs of current CANDU reactors – such as fuel channels, heat transport feeder piping, steam generators, reactor assembly and structures, and containment structures – will have detailed	Suggest removing “. . . For example, the critical life-limiting NPP SSCs of current CANDU reactors – such as fuel channels, heat transport feeder piping, steam generators, reactor assembly and structures, and containment		

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	with the licensee's integrated AMP framework, and should address the attributes of an effective AMP as presented in Appendix A. The scope of the AMP for SSCs should be commensurate with the importance to safety, design function and required performance of the SSCs, and its effect on the safe operation of the NPP. For example, the critical life-limiting NPP SSCs of current CANDU reactors – such as fuel channels, heat transport feeder piping, steam generators, reactor assembly and structures, and containment structures – will have detailed life cycle management plans, as will their SSC-specific AMPs. Other types of mechanistic-based AMPs include flow-accelerated corrosion and fatigue monitoring “	<i>life cycle management plans, as will their SSC-specific AMPs. Other types of mechanistic-based AMPs include flow-accelerated corrosion and fatigue monitoring “add confusion</i>	structures – will have detailed life cycle management plans, as will their SSC-specific AMPs. Other types of mechanistic-based AMPs include flow-accelerated corrosion and fatigue monitoring “		
17	Page 7, Section 3.0 “Proactive Strategy for Aging Management”	The lifecycle phases of a NPP are documented as: design, construction, commissioning, operation, and decommissioning. However there are other phases referred to as Stabilization Activities Phase (SAP) and Storage and Surveillance Phase (SSP) SAP & SSP phases may be considered as a subset of decommissioning. Safety concerns could be any equipment related to irradiated fuel bay operations, shutdown cooling, and core de-fuelling activities (fuelling machines and fuel transfer system equipment). Since section 3.5 is very brief on decommissioning, no major change is recommended. SAP & SSP may be mentioned.	Add to the guidance section: “SAP & SSP phases may be considered as a subset of decommissioning.” In addition, further explanation for section 3.5 guidance might be required.		
18	3.1 In refurbishment projects, the change-out of all of the pressure tubes is considered	.The determination of whether an activity is a repair or a replacement is already addressed in CSA N285.0 and should not be addressed here	Remove “In refurbishment projects, the change-out of all of the pressure tubes is considered a “replacement” activity and the change-out of all the feeder pipes is considered a “repair” activity. In both of these examples, aging		

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	a "replacement" activity and the change-out of all the feeder pipes is considered a "repair" activity. In both of these examples, aging management should be an important consideration in the design (e.g., selection of improved materials, increased wall thickness), fabrication (stress relief of feeder pipe bends), and commissioning (baseline measurements) of these repair and replacement activities.		management should be an important consideration in the design (e.g., selection of improved materials, increased wall thickness), fabrication (stress relief of feeder pipe bends), and commissioning (baseline measurements) of these repair and replacement activities."		
19	3.1.1	The second item under "Guidance" uses the term "safety Significant" which is not defined	Suggest adding to glossary	Please define	
20	3.1.1	The following portion of section Section 3.1.1 is too detailed and belongs in the next revision of RD-310 "The safety analysis report for the NPP should address the following items relating to aging management: 1. an outline of the proactive strategy for aging management and prerequisites for its implementation 2. safety-significant SSCs of the NPP that could be affected by aging 3. assumptions, methods, acceptance criteria, and data used to account for the effects of the aging of SSCs in the safety analysis, including any time-limited assumptions and failure data for probabilistic safety assessments 4. critical service conditions, operational limits and conditions, and any other parameters to be monitored and/or controlled that affect aging assumptions used in safety analyses or equipment qualification 5. data and information to be collected for aging management in order to confirm that safety analysis assumptions and acceptance criteria continue to be met	Remove "The safety analysis report for the NPP should address the following items relating to aging management: 1. an outline of the proactive strategy for aging management and prerequisites for its implementation 2. safety-significant SSCs of the NPP that could be affected by aging 3. assumptions, methods, acceptance criteria, and data used to account for the effects of the aging of SSCs in the safety analysis, including any time-limited assumptions and failure data for probabilistic safety assessments 4. critical service conditions, operational limits and conditions, and any other parameters to be monitored and/or controlled that affect aging assumptions used in safety analyses or equipment qualification 5. data and information to be collected for aging management in order to confirm that safety analysis assumptions and acceptance criteria continue to be met"	Request for clarification	
21	3.4.2 Long term operation,	. Section 3.4.2 suggests a design life of 30 years or 210,000 EPFH. 30 years was an initial commercial assumption for our NPPs and not a design life	Please remove sentence "For the current fleet of reactors in Canada, this is operation beyond approximately 30 years or 210,000 effective full-power hours"		If not incorporated may lead to confusion and misinformation regarding the safe operation of

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22					our plants Need more discussions with the CNSC to determine their intent of this section.
23	Section 3.5 - Decommissioning	It is not clear when a licences has 'decommissioned' a component/system. Need a clear definition of when Aging Management is no longer required	Define when an Aging Management of a decommissioned component / system is no longer required. Suggest an ageing management program is no longer required when the risk has been removed .For reactor components it is after the reactor is defueled and drained, and is ready for safe storage.		
24	Section 4.1 External organizations required for specific aging management services should be considered.	Need for external organizations for aging management services is an internal commercial business management decision for the utility, and should not be included in the REGDOC.	Remove requirement for consideration of external organizations.		
25	Section 4.3, Guidance, Item 6 To ensure that the aging evaluation is resource-effective, arrange the final list of elements and components into related categories.	This level of detail should not be specified in the REGDOC.	Remove from the REGDOC.		
26	Section 4.5 Condition assessments Page 19.	The Requirements in this section are in "shall" and "should" statements. It appears that the section is missing the Guidance title, after the second paragraph.	Add the following title, after the second paragraph on Page 19. Guidance The condition assessment should provide ...	Major comment	If comment is not implemented it will lead to inconsistent compliance
27	Section 4.5 Condition assessments Page 19. Second paragraph, last sentence.	The REGDOC text states that: Condition Assessment may be required before an NPP returns to service after a shutdown period or SSC lay-up It is better to clarify that shutdown means "extended shutdown" as specified in the guidance of Section 3.4.3, page 13, Guidance, firs line:	Revise the text: Condition Assessment may be required before an NPP returns to service after an extended shutdown period or SSC lay-up. Add in the guidance or the glossary the definition of the extended shutdown. "Extended shutdowns are reactor shutdowns lasting for a period exceeding one year, and exclude regular maintenance outages."		
28	4.7 Management of technological obsolescence	Obsolescence may be addressed in several licensee managed processes or by a dedicated program .The wording in this section suggest that the only option is to have a dedicated program	Revise the text from: "The licensee shall establish a program for management of technological obsolescence. The provisions for the management of obsolescence shall be documented." To -"The licensee shall have a managed process for obsolescence. The provisions for the management of		

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			obsolescence shall be documented in the licensee's management system."		
29	4.7 Management of technological obsolescence	There is lack of clarity on the term obsolescence and technological obsolescence.	It is recommended to add definition of obsolescence to the glossary, and remove reference to technological obsolescence .Suggest using the definition in IAEA NS G-2.12.		Not addressing this comment will lead to inconsistency in compliance to requirements of this REGDOC
30	Section 4.8 Definition of 'safety analysis' in the REGDOC.	In the REGDOC, 'safety analysis' includes reference to the Probabilistic Safety Assessment (PSA) standard S-294. This implies that PSA is part of safety analysis, and as per Section 3.4.1, the effects of aging on PSA shall be evaluated. There is currently no regulatory guidance on how to incorporate aging into PSA. The same comment applies for Section 3.4.2 Item 3 - there is no regulatory guidance currently available to include time-limited assumptions in PSA for the period of long-term operation. The referenced REGDOC S-294 does not explicitly define aging management methodologies to be applied to PSA	1. Suggest removing the wording "including safety analysis [4, 5, 6], maintenance [15], and reliability programs [14]. "From the sentence All supporting programs and activities that are credited as an integral part of the NPP aging management shall be identified, and their interfaces and information requirements defined in the overall integrated AMP framework document, including safety analysis [4, 5, 6], maintenance [15], and reliability programs [14]. 2. Move the wording "including safety analysis [4, 5, 6], maintenance [15], and reliability programs [14]." to the guidance section of Section 4.8		
31	Section 4.10 Review and Improvements 3rd paragraph. "In accordance with S-99	All reporting requirements should be documented in the updated RD99.1 and not addressed here	Remove the sentence "In accordance with S-99, Reporting Requirements for Operating Nuclear Power Plants [16], licensees are required to report the discovery of information that may reveal an aging effect or hazard that is different in nature, significantly greater in probability, or greater in magnitude than was previously provided to the CNSC in licensing documents"		
32	4.10 ...sentence" Whenever an AMP deficiency is identified, the licensee should assess its significance and, where appropriate, conduct a root-cause determination and take corrective actions "	The reference to a root cause determination may not be appropriate based on safety significance .Licensees' corrective action programs require a causal analysis which will determine either an apparent cause analysis or a root cause analysis depending on safety significance	Suggest change to "Whenever an AM Program deficiency is identified, the licensee should assess its significance and, where appropriate, conduct a causal analysis and take corrective actions		
33	Section 4.10, Guidance Annual reviews of the AMP.	The timing of AMP review should be tied to the existing cycle for the major program elements, such as update of the LCMPs, update of the programmatic documentation, or periodic safety review. Examples of systems that would not be appropriate candidates for annual review are containment ,feeders ,pressure tubes, steam generators .	Revise the requirement for annual review to 'AM plan review should be conducted on a periodic basis consistent with the existing cycle for the major program elements ".		