DPP DS561

Ageing Management and Development of a Programme for Long Term Operation of Nuclear Power Plants

	COMMENTS BY REVIEWER **Reviewer: Canadian Nuclear Safety Commission** **Country/Organization: Canada**				**RESOLUTION**			
Comment No.	**Committee**	**Para/Line No.**	**Proposed new text**	**Reason**	**Accepted**	**Accepted, but modified as follows**	**Rejected**	**Reason for modification/rejection**
India3	NUSSC	1	*In recent years, an increasing number of States have decided to license continued operation of nuclear power plants beyond their initial extended operation period, or to keep extending the lifetime based on 10-yearly periodic safety reviews.*	Editorial (improved readability)	X			
South Africa1	NUSSC	Section 2, 1st sentence	In recent years, an increasing number of States have decided to license continued operation of nuclear power plants beyond their initial extension period, or to further extend their lifetime based on 10-year periodic safety reviews	Reads better.	X			
South Africa 2	NUSSC	Section 2, 2nd paragraph	In 2018, SSG-48 was published and has since been used for Safety Aspects of Long Term Operation (SALTO) missions, the International Generic Ageing Lessons Learned (IGALL) programme and by individual nuclear power plants (NPPs) in developing and implementing ageing management activities	Reads better	X			

			and preparing for long term operation (LTO).					
South Africa 3	NUSSC	Section 3, 3rd & 4th paragraph	Additionally, States and regulatory bodies also use the Safety Guide to develop and improve regulations and guidance related to ageing management and LTO. As a result, these activities have generated considerable information and experience, indicating areas where the Safety Guide can be further improved or supplemented.	Reads better	X			
Korea2	WASSC	Page 2 Line 39	The following is suggested. (before) (taking into account interfaces with SSG-25 and SSG-26) - SSR-2/2 (Rev.1): (after) (taking into account interfaces with SSG-25(DS535) and SSG-26) - SSR-2/2 (Rev.1) (DS532):	I think that SSG-25 is the process of revision now. It is in the step 7 (DS535). And the SSR-2/2 (Rev.1) (DS532) is also in the process of revision. Those documents will be revised and published before the revision of SSG-48. So, it is recommended to clarify this situation.	X			
India2	NUSSC	3/1	*In addition, the following safety reports have been published that may need to be considered for the revision of SSG-48:* *SSG-71 Modifications to Nuclear Power Plants (2022)*	This guide may be included in the list as development of programme for LTO of NPPs may need to modify/repair/replace some of the	X			

				components. This guide specifies all the relevant aspects related to modification in plants				
Korea1	WASSC	Page 2/ Line 8	The following is suggested. (before) SRS-121 Use of ~~ (2024) (after) SRS-121 Use of ~~~ (2023)	I think that it is a typo.	X			
India1	NUSSC	Page 2/ Para 3/	*Better addressing the existing recommendations, e.g. for implementation of ageing management for active components, obsolescence of instrumentation & control systems, assessment of ageing management effectiveness, extending the recommendations in several places based on experience in its use;*	Operation in LTO regime and beyond may have aggravated issues of obsolescence of I&C systems with repercussion on overall safety of plant. This guide should have more integration with NES NR-T-3.34 on Management of Ageing and Obsolescence of Instrumentation and Control Systems and Equipment in Nuclear Power Plants and Related Facilities Through Modernization				
UK1	NUSSC	General comment.	We advise that IAEA Nuclear Energy Series (NES) report NR-T-3.34 (Management of ageing	UK operating experience (OPEX)	X			

			and obsolescence of instrumentation systems and control (I&C) and equipment in nuclear power plants (NPP) and related facilities through modernization) is also taken into account as this covers many of the issues identified in the Annex, and other relevant issues which have not that are also applicable in relation to Long Term Operations (LTO) programmes.					
UK2	NUSSC	General comment.	LTO programmes will necessitate the modernization / replacement of I&C system. IAEA NES report NR-T-3.34 outlines various strategies that can be applied to achieve this (including pros and cons). Again we advise that this report should be taken into consideration.	UK OPEX.	X			
Japan1	NUSSC	3. JUSTIFICATION 2nd para 2nd bullet	- *Supplementing the currently addressed topics with additional topics, e.g. preparation for a subsequent LTO, activities to be conducted in the subsequent LTO period to maintain the proper level of ageing management, coordination of ageing management on the plant level, ensuring human resources for LTO, safety aspects of supply chain management for LTO, obsolescence of codes and standards obsolescence of*	Clarification for whether 'obsolescence of codes and standards' refers to 'regulations, codes and standards' or 'knowledge' in line with which types of obsolescence used in Table 1 of SSG-48. Currently, management methods related to	X			

			"regulations and codes and standards" and "knowledge".	'technology' are outlined in paras. 6.1 to 6.12 of SSG-48, but there are no provisions for 'regulations and codes and standards' or 'knowledge'. So it should considered both of them at this time.				
Finland1	NUSSC	5	*the following publications will be taken into account:* .... - *ENSREG 1st Topical Peer Review Reoprt "Ageing Management" October 2018 with Action plan and Status reports 2021 and 2024*	As IAEA has the SALTO missions - EU/ENSREG has published peer review reports and follow-up report on Ageing Management. Please consider the EU experience usefulness as international organization publication: https://www.ensreg.eu/eu-level-reports-tpr-1	X			
USA1	NUSSC	Pg 3, section 6, last para	IAEA's Nuclear Installation Safety Division (NSNI) will be consulted in the development, while the Safety Assessment Section (SAS) and Nuclear Power Engineering Section (NPES)…	Global comment – all acronyms should be defined	X			

Canada1	NUSSC		*For consideration in revision of SSG-48: Include sufficient details on TLAA frameworks, such as the expectation for time limited ageing analyses (TLAA) and scope setting, in early design-phase of reactor life cycle.*		X			
Canada2	NUSSC		*For consideration in revision of SSG-48: Include more guidance on the life cycle aging management expectations for early phases including design, construction and commissioning. For example, it is recommended to provide guidance on: (1) material selection criteria, such as corrosion resistance and radiation tolerance, and (2) effective methods for establishing baseline degradation data.*	It is recommended to consider the content of the recent safety report on AM during early phases (currently under IAEA internal review)	X			
UK5	NUSSC	General comment.	Based on our early engagement with EDF Nuclear Generation Ltd (EDF NGL) regarding the Sizewell B LTO programme, we consider that the number of system that will need to be replacements / upgrade will pose a challenge in obtaining suitably qualified and experienced persons (SQEP) to undertake the associate design and safety case work. Likewise, this will pose a regulatory resource challenge. Workload and work planning	UK OPEX.	X			

			will, therefore, need to be carefully planned and managed. We, therefore, consider that more advice in this area would be beneficial.					
USA2	NUSSC	Pg 6, Annex, after current 4th bullet	Modify to: Review Areas for Enhancement in the 2025 OECD NEA "Status Report on LTO Beyond 60 Years"	This 2025 OECD NEA publication named 68 areas for enhancement which should be considered.	X			
Canada4	NUSSC		*For consideration in revision of SSG-48: Additional guidance on Ageing Management during shutdown and transient periods leading to decommissioning would be helpful, given the age of the global nuclear fleet. This may require focused review of aging mechanisms due to changes in activity frequencies and reliability of equipment to maintain safe storage conditions.*	Canada has gone through an exercise with some reactor units nearing decommissioning with AM considerations summarized in the Sustainable Operations Plan (SOP) and Stabilization Activity Plan (SAP) to identify activities during and post shut down periods.	X			
Canada3	NUSSC		*For consideration in revision of SSG-48: Technological obsolescence: SSG-48 calls for dedicated obsolescence management program. It is recommend expanding/enhancing the guidance on obsolescence in*	For context, in Canada REGDOC-2.6.3 doesn't require a standalone program for obsolescence but rather to understand and consider obsolescence when			X	Already covered in Item 18 of Annex 1 (Feedback analysis report)

			SSG-48 to provide clarity on expectations	planning for aging management.				
UK9	NUSSC	General comment.	Maintenance strategies can have a significant impact regarding the timeliness of ageing mechanism detection. We, therefore, consider that more advice in this area would be beneficial.	UK OPEX.	X			
UK6	NUSSC	General comment.	We consider that consideration should be given to the benefits of using LTO programmes as an opportunity to for NPP operators to transfer from a paper based maintenance instruction and recording process to a digital based process (e.g. use of handheld digital devices to present work instructions and to record maintenance data, thus enabling data to be captured, sorted, trended, and analyzed in a simple and efficient way).	UK OPEX.	X			
UK7	NUSSC	General comment.	We consider that the benefits that associated with utilizing SMART device self-diagnostics and health reporting can provide with regard to proactively identifying potential ageing issues should be given due consideration.	UK OPEX.	X			
UK4	NUSSC	General comment.	Based on UK operating experience, inadequate equipment specification is one of the main reason for new equipment unexpectedly and rapidly ageing. We, therefore,	UK OPEX.	X			

			consider that more advice in this area would be beneficial.					
UK3	NUSSC	General comment.	It is important to forensically evaluate equipment failures and record the findings in order to establish if design / operating condition changes are needed to avoid reoccurrences. We, therefore, consider that more advice in this area would be beneficial.	UK OPEX.			X	Forensic evaluation is out of scope of IAEA Safety Standards.
UK8	NUSSC	General comment.	We advise that ONR's Ageing and Degradation Technical Assessment Guide (TAG) (NS-TAST-GD-109) should be taken into consideration.	UK OPEX.			X	Please provide (text) proposal what exactly include from that document.