

DPP - DS546
Version 1.2 dated 31 October 2022
Ageing Management and Maintenance of Radioactive Material Transport Packages

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: Page 1 of 7 Country/Organization: Spain(ES), France (F), Germany (G), Pakistan(PK), Japan (JPN)				Date: 26 October 2022			
Com ment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
ES-01	General Comment	Two DPPs should be submitted, one for the ageing guide and one for the maintenance guide.	In meeting 44 of TRANSCC was decided to develop two different guides, one on ageing and one on maintenance. The records of the meeting indicate that TTEG-PPA suggested the development of two guides and no objections were received and the decision to move forward with two separate guides was approved. In agreement with that decision, two different DPP should be issued.			X	Both topics Aging and maintenance are interrelated and better to cover in a single guidance document. The intended audience is also same. This is also in line with the optimization policy agreed in terms of Medium Term Plan for safety standards.
F-01	General Comment	General comment	There is only one DPP that merges the two safety guides (ageing management and maintenance) while the action record sheet of the TRANSCC 44 mentions two separate DPPs: TRANSCC 44 Action record sheet n°44.06 <i>“Two DPPs for Safety Guides on Ageing Management and Maintenance of Transport Packaging (item 7.1.3).”</i> As written in the conclusion of TTEG PPA Report n°6: <i>“Some members of the TTEG PPA prefer to combine the two guides into one. The majority of the TTEG PPA members supports the development of two separate guides.”</i> For France, it makes sense to combine the two topics in a single guide	X			
JPN-01	General Comment	Shouldn't the Aging Management Guide and Maintenance Guide be published as separate DPPs?	In the TRANSSC Action Record sheet 44.06, we can see “Two DPPs for Safety Guides on Ageing Management and Maintenance of Transport Packaging (item 7.1.3).” There is only one DPP, which merged aging management and maintenance documents. We should follow the TRANSSC decision and be issued as a separate document.			X	Both topics Aging and maintenance are interrelated and better to cover in a single guidance document. The intended audience is also same. This is also in line with the optimization policy agreed in terms of Medium Term Plan for safety standards.
F-02	2. BACKGROUND Para 1 Line 1	2. Background The Transport Regulations SSR-6 (Rev.1), implement new requirements for “ shipment after storage ” related to the ageing of transport packages, including their radioactive contents when relevant.	The new requirements introduced in the SSR-6 do not concern only shipment after storage but ageing of the packages in general.		X The Transport Regulations SSR-6 (Rev.1), implement new requirements for shipment after storage and ageing of transport packages		IAEA SSR-6 (Rev.1) uses the term Shipment after storage to address a large group of packages which forced to introduce aging requirements in the Transport Regulations.

		(...)					From scope, it is clear that guidance will be provided for all type of packages.
PK-01	2. BACKGROUND Para 1 Line 1	The Transport Regulations SSR-6 (Rev.1), implement new design requirements for “shipment after storage to take into account ageing mechanisms for all types of packaging and packages.” These new requirements apply to all types of packages.	Para 613A of SSR-6 Rev.01 establishes the new requirement for all types of packaging & packages which includes packages designed for shipment after storage. Further the new requirement for shipment after storage is not limited to the ageing. Hence the reference of 613A in starting of the section is more appropriate. If so required, the requirement of packages designed for shipment after storage can be mentioned after the modified sentence.		X	The Transport Regulations SSR-6 (Rev.1), implement new requirements for shipment after storage and ageing of transport packages	IAEA SSR-6 (Rev.1) uses the term Shipment after storage to address a large group of packages which forced to introduce aging requirements in the Transport Regulations. From scope, it is clear that guidance will be provided for all type of packages.
G-01	2. BACKGROUND Para 1 Line 2	... Thus, the guide contributes to the harmonized implementation of new requirements of the IAEA Transport Regulations, SSR-6 (Rev. 1), and is applicable to all transport packages for radioactive material worldwide.	Clarification: 1) do you mean SSR-6 (Rev. 1)? To our understanding and according to STATUS OF THE IAEA SAFETY STANDARDS SSR-6 (Rev. 1) supersedes SSR-6. 2) Transport packages for other contents are out of the scope of this document.		X		
G-02	2. Background Para 2 Line 4	... Package designs requiring a certificate of approval by the c Competent a Authority need that maintenance instructions are included in the application for c Competent a Authority approval, while packages not requiring a certificate of approval ...	Please put the way of writing “competent authority” in line with SSR-6 (Rev. 1). Punctuation.		X		
G-03	2. Background Para 2 Line 7	... For this reason, SSG-66, “Format and Content of the Package Design Safety Report for the Transport of Radioactive Material” , includes maintenance as one of the topics to evidence compliance with the requirements of the Transport Regulations SSR-6 (Rev. 1) when preparing the package design safety report, for both approved and non-approved transport packages. ...	Adding the title is helpful for a better understanding of the DPP, especially for SSCs other than TRANSSC.		X		
F-03	2. BACKGROUND Para 2 Line 9	2. BACKGROUND (...) There is also pressing need to document related practical experience and lessons learned by the designer, manufacturer, users and competent authorities to have common approach particularly for packages which are used for international transport of radioactive material.	The interest of having a common approach of the transport Regulations is not only due to international transports. Indeed, national transport can also have effects on neighboring countries. In addition, the different transport stakeholders (i.e. the designer, the manufacturer, the packaging user and the NPP operator) may be from different countries. Finally, for reasons of equal treatment between different economic actors, it may be useful to have a common approach to the Regulation.		X		
G-04	3. Justification Para 1 Line 1	... A significant number of M member S tates and observer organizations	Please put the way of writing “Member States” in line with SSR-6 (Rev. 1)		X		
F-06	3. JUSTIFICATION FOR THE PRODUCTION OF THE PUBLICATION OF THE PUBLICATION	3. JUSTIFICATION FOR THE PRODUCTION OF THE PUBLICATION (...) Packages can be used over 40 years. They can also be used in a wide variety of environments which can impact the safety of their shipment. The ageing mechanisms of components important for the safety of	The importance of taking into account ageing mechanisms for the safety of transport could be mentioned.		X	Safety of the packages designed to be used for longer period of time and in wide variety of environment may be compromised, if not managed properly. The ageing mechanism of	

		the packaging should therefore be identified from the design stage, then studied throughout the life of the package model by periodic the assessment review. The packaging must be subject to maintenance which also takes into account the phenomena of ageing.			components important for the safety of packaging should therefore be identified from the design stage then studied throughout the life of the package by periodic assessment. The packaging must be subject to maintenance which also takes into account the phenomena of ageing.		
G-05	3. Justification Para 3 Line 1	Some advice is provided by the “Advisory Material” SSG-26 (Rev.1). The current SSG-26 (Rev.1) is around 500 pages and difficult to process during review and publication.	Do you mean SSG-26 (Rev.1)?	X			
G-06	3. Justification Para 4 Line 1	Additionally, the guide SSG-26 (Rev.1) addresses specific interfaces beyond the transport stakeholders. So, it would not be an option to add new the content to existing “Advisory Material” transport guidance. It is rather reasonable to develop a stand-alone guide for this issues of ageing management of transport packages, which can be used by specific groups of stakeholders addressing their specific needs.	Clarification: please make text more precise. Additionally, further it states, that the intended users of this Safety Guide are package designers, manufacturer, consignors, carriers, operators including those of storage facilities and competent authorities, which is more than “specific groups of stakeholders”.–	X			
G-07	3. Justification Para 5 Line 1	The document preparation process will consider existing documents IAEA Safety Guides and Requirements related to spent fuel, radioactive material and to ageing mechanisms of NPP, spent fuel as well as existing guidances provided by Member States. In particular, the existing draft of the working group WG-AG WG Ageing of the TRANSSC Technical Expert Group on Package Performance and Assessment (TTEG PPA) will be used as a basis for the development of the document.	Clarification and specification. Additionally, abbreviations WG-AG and TTEG PPA have been introduced earlier in the text.	X			
F-04	3. JUSTIFICATION FOR THE PRODUCTION OF THE PUBLICATION Para 5 Line 1	3. JUSTIFICATION FOR THE PRODUCTION OF THE PUBLICATION (...) The document preparation process will consider existing documents related to ageing mechanisms of NPP, spent fuel as well as existing guidance provided by member states. In particular, the existing drafts of the working groups WG Ageing and WG Maintenance of the TRANSSC Technical Expert Group on Package Performance and Assessment (TTEG PPA) will be used as a basis for the development of the document. (...)	If the publication addresses both ageing and maintenance topics, the working groups WG Ageing and WG Maintenance should be mentioned.	X			

F-05	3. JUSTIFICATION FOR THE PRODUCTION OF THE PUBLICATION Para 6 Line 1	3. JUSTIFICATION FOR THE PRODUCTION OF THE PUBLICATION (...) The intended audience includes package designers, manufacturer, consignors, carriers , operators including those of storage facilities and Competent Authorities.	The recommendations of the document should also not apply to carriers.	X			
PK-02	3. JUSTIFICATION FOR THE PRODUCTION OF THE PUBLICATION Para 6 Line 1	The intended audience includes package designers, manufacturer, consignors, carriers , operators including those of storage facilities and Competent Authorities.	Carrier has no role in design requirements of SSR-6 (Rev.01) Section VI and Section VIII. Accordingly has no relevance with the subject documents all requirements have to be complied by designer/manufacturer/consignor/operator.	X			
G-08	3. Justification Para 6 Line 1	The intended audience target group includes	We suggest to use more standard IAEA terms: users, readers, target group.	X			
F-07	4. OBJECTIVE Para 1 Line 1	4. OBJECTIVE The objective of the proposed publication is to provide guidance on meeting the requirements of SSR-6 (Rev.1) related to “shipment after storage” <u>ageing and maintenance</u> . The content of the guide has to make sure, that safety is assured (e.g., mechanical properties, decontamination) before transport. The means of that assurance include checks and controls during storage, which are necessary to ensure the transportability after storage. Different ageing mechanisms for all types of packages are considered, with a graded approach following SSR-6. In addition, This guide will include advice to establish maintenance instructions, to perform inspections, and clarifications of the maintenance/ageing interface.	As it is well written in para 5 related to the scope of the document, <i>“This guide covers all packages containing radioactive material (i.e. Excepted, Type IPs, Type A, Type B(U) or B(M), Type C packages, including packages containing fissile material or uranium hexafluoride). This guide also covers all activities during the different phases of the life of the package where ageing management and maintenance should be considered, such as design, manufacture, repair of packaging, preparation, consigning, loading, carriage that includes in-transit storage, shipment after storage, receipt and unloading at the final destination.”</i> So the document do not have to focus on shipment after storage. Moreover, ageing mechanism do no have only impact on mechanical properties, but also on thermal properties and so one. So the list is not completed.		X but modified as “related to aging and maintenance with particular focus on packages planned for shipment after storage. The content of the guide has to make sure, that safety is assured before transport. Different ageing mechanisms for all types of packages are considered, with a graded approach following SSR-6.		
PK-03	4. OBJECTIVE Para 1 Line 1	The objective of the proposed publications to provide guidance on meeting the <u>design</u> requirements of SSR-6 (Rev.1) “shipment after storage to take into account ageing mechanisms for all types of packaging and packages.	The requirement of ageing mechanism is applicable to all packages. Further the subject guide will provide guidance for all types of packages not limited to packages designed for shipment after storage.		X but modified as “related to aging and maintenance with particular focus on packages planned for shipment after storage.		To make it in line with IAEA SSR-6 (Rev.1)
G-09	4. Objective Para 1 Line 1	The objective of the proposed publication is to provide guidance on meeting the requirements of SSR-6 (Rev.1) related to “shipment after storage” <u>of radioactive material packages</u> . The content of the guide has to make sure, that safety <u>of transport packages</u> is assured (e.g., <u>avoiding of criticality, appropriate</u> mechanical properties, decontamination	Please make the formulations more precise. To our understanding and according to the <u>STATUS OF THE IAEA SAFETY STANDARDS</u> SSR-6 (Rev. 1) supersedes SSR-6.	X			

		<p>etc.) before transport. The means of that assurance include checks and controls during storage, which are necessary to ensure the transportability after storage. Different ageing mechanisms for all types of packages are considered, with a graded approach following SSR-6 (Rev.1) Requirements. In addition, (This guide will include advices to on establishing maintenance instructions, to on performing inspections, and on clarifications of dependences the between maintenance/ and ageing interface.</p>					
PK-04	4. OBJECTIVE Para 1 Line 3	<p>Comment: Please elaborate how the mechanical properties can be assured before transport?</p>	<p>Mechanical properties of the material are generally considered during the design phase and typical mechanical properties include strength, ductility, hardness, impact resistance, and fracture toughness, which need destructive testing for verification. that's why destructive testes are performed during the design/manufacturing phase of the packages.</p>			X	<p>The purpose of guide is to share practices/ aspects to be taken to ensure safety of the packages designed for shipment after storage. This will be discussed in detailed text.</p>
F-08	5. SCOPE Para 1 Line 2	<p>5. SCOPE (...) This guide also covers all activities during the different phases of the life of the package where ageing management and maintenance should be considered, such as design, manufacture, repair of packaging, preparation, consigning, loading, carriage that includes in-transit storage, shipment after storage, receipt and unloading at the final destination. (...)</p>	<p>All stages of the life of a package are not necessarily relevant for the study of ageing and maintenance.</p>	X			
F-09	6. PLACE IN THE OVERALL STRUCTURE OF THE RELEVANT SERIES AND INTERFACES WITH EXISTING AND/OR PLANNED PUBLICATIONS	<p>6. PLACE IN THE OVERALL STRUCTURE OF THE RELEVANT SERIES AND INTERFACES WITH EXISTING AND/OR PLANNED PUBLICATIONS (...)</p> <ul style="list-style-type: none"> • GSR-Part 2 (leadership and management), • GSR Part 4 (Safety assessment), • GSR-Part 3 (BSS), • Other applicable Safety Standards regarding nuclear facilities where packages are stored: <ul style="list-style-type: none"> ○ SSR-2/2, SSG-15, SSG-20, SSG-25, SSG-27, SSG-40, SSG-41, SSG-42, SSG-61, SSG-63, SSG-69, SSG-70, SSG-73, WS-G-6.1, 	<p>Other interface documents with nuclear facilities where packages are stored should be mentioned because the storage conditions in these facilities have an impact on the ageing mechanism of the packages.</p>	X			

		NS-G-4.2, NS-G-4.3, NS-G-4.4, NS-G-4.6, SSG-10), GSG-7, GSG-13, GSG-16, SSG-10, SSG-25 et SSG-48 (...)					
PK-07	6. PLACE IN THE OVERALL STRUCTURE OF THE RELEVANT SERIES AND INTERFACES WITH EXISTING AND/OR PLANNED PUBLICATIONS	The following may also be added as reference documents INTERNATIONAL ATOMIC ENERGY AGENCY, Ageing Management and Long-Term Operation of Nuclear Power Plants: Data Management, Scope Setting, Plant Programmes and Documentation- IAEA Safety Series No 106 INTERNATIONAL ATOMIC ENERGY AGENCY, Handbook on Ageing Management for Nuclear Power Plants, IAEA Nuclear Energy Series No. NP-T-3.24	In order to justify para 3 line 20 “The document preparation process will consider existing documents related to ageing mechanisms of NPP, spent fuel as well as existing guidance provided by member states”	X			
PK-08	6. PLACE IN THE OVERALL STRUCTURE OF THE RELEVANT SERIES AND INTERFACES WITH EXISTING AND/OR PLANNED PUBLICATIONS	Comment: Other interfacing documents such as applicable GSRs and SSRs may be included.	The DPP refers to NPPs and RP matters. Accordingly, other applicable referencing documents needs to be included under section 6.	X			
F-10	7. OVERVIEW Para 3 Line 2	7. OVERVIEW (...) 3. Graded Approach Applied to the Considerations of Ageing Mechanisms 3.1 Dual purpose casks (DPC) 3.2 Other packages (...)	It could be useful to distinguish the case of packages that remain charged for a long time (<i>dual purpose cask</i>) from others, regardless of the type of package.			X	Terminologies should be kept in line with SSR-6. Further details about subsections will be discussed during the development of document.
G-10	7. OVERVIEW Para 4 Line 1	4. Package Operating Conditions and Relevant Ageing Mechanisms <u>and Effects</u>	Is the topic of “Ageing effects on packages” as listed as point 6 on page 5 (draft Ageing Management Guide) now included under point 4 (Package Operating Conditions and Relevant Ageing Mechanisms)? Or has it been omitted? Please verify.	X			
F-11	7. OVERVIEW Para 5 Line 1	7. OVERVIEW (...) 5. Ageing Considerations in Package Design 5.1 Ageing of the content of the package 5.2 Ageing of the internal fittings of the package 5.3 Ageing of the packaging (...)	For packages remaining loaded for a long time, it is necessary to distinguish the ageing of the contents, the internal fittings and the packaging (for example the seals). So sub-chapters 5.1, 5.2 and 5.3 could be created.			X	Further details about subsections will be discussed during the development of document.
PK-05	7. OVERVIEW Para 8	8. Parts Identification, Inspection and Test	This item is relating more to ageing management therefore may be moved to heading # 6 above.			x	Its related to both aging and maintenance.

	Line 1						
G-11	7. Overview, Para 8 Line 1	8. Parts Identification, Inspection and <u>Testing</u>	We assume, there is not only one single test to be considered but rather the process of testing to be regulated.	X			
F-12	7. OVERVIEW Para 9 Line 1	7. OVERVIEW (...) 9. Maintenance Program 9.1 <u>Empty packages</u> 9.2 <u>Loaded packages</u> (<u>storage</u>) (...)	It could be interesting to differentiate two cases: empty packages and loaded packages.			X	Further details about subsections will be discussed during the development of document.
F-13	7. OVERVIEW Para 13 Line 1	7. OVERVIEW (...) 13. <u>Feedback</u> 14. Conclusions (...)	It could be useful to add a chapter dealing with feedback and on the sharing of information between different actors.			X	Comment is not clear. Information sharing among stakeholders will be covered under 11. Administrative issues and 12 . interface issues.
F-14	7. OVERVIEW Para 16 Line 1	7. OVERVIEW (...) <u>XX. Roles and Responsibilities</u> (...)	There is an " <i>Appendix III. Summary of Roles and Responsibilities</i> " although this subject does not clearly appear in the different chapters.			X	IAEA SSR-6 (Rev.1) doesn't have a separate and clear requirements with title responsibilities. Therefore, this topic is covered as Annex and share good practices.
G-12	7. Overview, Para 12 Line 1	<i>12. Interface Issues</i>	Clarification: What type of interface is meant here? Any kind of? Or administrative interactions of parties with different responsibilities? Please clarify. Additionally, term "interface" is semantically occupied in the technical field, as e.g. "interface with other equipment or system", we suggest to use another wording instead of "maintenance/ageing interface", if that has been meant.		X 12. Storage and Transport Interface Issues		
PK-06	7. OVERVIEW	NEW Addition: Operational Experience Feedback	Certain parameters/effects of ageing will be learned through operational experience by the consignors/designer. The same needs to be addressed. If new section is not included, OEF must be included as sub-section			X	The whole safety guide will be based on practical experience feedback of member states involved. Further, ANEXX I is placed for specific examples.