### Transport Regulations (SSR-6 and SSG-26) 2015 Review Cycle

**DUAL PURPOSE CASK**

**TRANSSC CORRESPONDENCE WG**

**(DPC CORRESPONDING GROUP)**

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**J/2015/03**  
SSR-6 Para. 614bis (New)

614bis. The design of packages intended to be used for shipment after storage shall take into account ageing mechanisms.

[DPC Incorporation]

In order to assure transportability after storage especially with pre-shipment inspection without opening lids, package performance shall be maintained throughout the storage period even all the anticipated ageing effect impacts on components and contents of the package. Needless to say that ageing is considered in the design for ordinal transport package, it should be specifically emphasized for packages used for shipment after storage. Therefore, such requirement is placed as part of the general requirements for all packagings and packages.

Guidance text is provided in J/2015/11 as para. 614bis.1.

For the background of the proposal, see Annex J-1.

Add that ageing effects to be considered for a dual purpose cask (i.e. to be used for shipment after storage).

**TRANSSC 30 WG 5.**

The proposed change is appropriate.

X

**TRANSSC SEPTEMBER MEETING WG3**

There are discussions on extending those requirements to all packages that could be subject to ageing, not only for packages used for shipment after storage. Emphasis could be formulated on ageing mechanism for packages used for shipment after storage in the guidance. Associated requirement to J/2015/4 is introducing specific requirement assessment of ageing content for application for such packages.

Need for regulating packages to be transported in the future was also discussed. Opinion of the majority of the group is that clear requirement will help applicants to plan future transports in compliance with regulations.

As this issue is also concerning waste processing activities, WG3 recommends continued consultation with WASSC committee.

WG3 proposes to change the wording as follows: The design of packages intended to be used for shipment after storage shall take into account ageing mechanisms, and to place it just before para 614.

**TRANSSC CORRESPONDENCE WG (DPC)**

As the scope of para. 613bis has been extended to cover all types of package, not only DPC, amendment of guidance is proposed as 613bis.1 and 613bis.2. See J/2015/11.

X
<table>
<thead>
<tr>
<th>Comment No.</th>
<th>Identified problem/Proposed new text</th>
<th>Reason/Description</th>
<th>Abbreviated Summary of Proposal</th>
<th>Accept</th>
<th>More discussion or justification required</th>
<th>Accept but modified as follows</th>
<th>Reject</th>
<th>Clarification required</th>
<th>Reason for modification / rejection</th>
</tr>
</thead>
<tbody>
<tr>
<td>J/2015/11 SSG-26 Para. 614bis.1 (New)</td>
<td>614bis.1 Package components are subjected to degradation mechanisms and ageing processes which depend on the component itself and its operational conditions. Thus it is important to evaluate the potential degradation phenomena over time and their impact on the functions important to safety. For details see Ref. [10bis].</td>
<td>[DPC Incorporation] Supplemental information on consideration to ageing mechanism is given by referring to the TECDOC-DPCSC. See J/2015/03 for regulatory text change of para. 614bis proposed. For the background of the proposal, see Annex J-1.</td>
<td>Add text to provide supplemental guidance on the ageing mechanisms that need to be addressed for a dual purpose cask (i.e. to be used for shipment after storage).</td>
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TRANSSC 30 WG WG 5.
Addition is OK but reference [10] (TECDOC) is not yet published.

X

TRANSSC SEPTEMBER MEETING WG 3
WG supports the proposal.

X

TRANSSC 31
Proposal was approved by TRANSSC 31.

X

TRANSSC CORRESPONDENCE WG (DPC)

As the scope of para. 613bis has been extended to cover all types of package, not only DPC, following amendment is proposed.

613bis.1 Package components are subjected to degradation mechanisms and ageing processes which depend on the component itself and its operational conditions. Thus the design of package should take into account ageing mechanisms commensurate to the operational conditions. A large number of packages are designed for once-through use, and after transport the packaging (e.g., a cardboard box) will be disposed. In such package design, any ageing effect need not to be considered. For the design of package where repeated use is intended, ageing mechanisms have been well considered historically, sometimes in conjunction with the inspection and maintenance programme. A designer of package for repeated use may define the design life of the package in order to evaluate the potential degradation phenomena over time, such as corrosion, fatigue, crack propagation, changes of material compositions or mechanical properties due to thermal loadings or radiation, generation of decomposition gas, and their impact on the functions important to safety. During the design life those effects may be measured directly or indirectly in periodical inspections on empty packaging, and when some effects are detected to exceed the limits set by the designer, countermeasures such as replacement or repair of components will be taken within the maintenance programme to recover their safety functions.

613bis.2 In the design of packages intended to be used for shipment after storage, consideration of ageing mechanism is of importance, due to long continuous operating period and difficulties in inspection to detect ageing effects and maintenance on the radioactive contents loaded packages. Furthermore, a knowledge on new ageing mechanism not considered in the original design or new technology to inspect ageing effects may be recognized during such operating period. For such design an ageing management programme (see para. 306.4bis, and for details see Ref. [10bis]) to justify the design considerations on ageing mechanism and a gap analysis program (see para. 809.3) to cope with changes in technical knowledge should be provided. These programmes are required in the application of the design approval for packages for shipment after storage as prescribed in para. 809 of the Regulations.