

**Staff Responses to Public Comments on Draft Regulatory Guide, DG-7007,  
 “Administrative Guide for Verifying Compliance with Packaging Requirements for  
 Shipping and Receiving of Radioactive Material”  
 (Revision 1 of Regulatory Guide 7.7)**

<b>Originators</b>			
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<b>Comment Number</b>	<b>Submitted By</b>	<b>Comment</b>	<b>Response</b>
7007-1	NEI	Overall, most of this document seems to focus on Type B and fissile material packaging. Although Type A packaging is mentioned early in the document, several of the sections present guidance for requirements that apply to Type B and Type A shipping containers or packages. Clarification needs to be given by explicitly stating the type of package to which the requirement applies.	Agree. The regulatory guide is intended to apply to Type AF and Type B packages. The regulatory guide has been revised to clarify that it applies to Type AF and Type B packages.
7007-2	NEI	Page 4, Section 2.1 paragraph c:  There is a typo in the last sentence. "NCR" should be "NRC".	Agree, the type has been corrected.

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7007-3	NEI	<p>Page 4, Section 2.1.1 first paragraph:</p> <p>Licensees, that are not the certificate holders, are not typically provided full package design drawings, documents, testing and safety basis information as this is proprietary information of the certificate holder. Licensees cannot effectively determine if the package is built according to the detailed design requirements and drawings, other than what is provided in Chapters 7 and 8 of the Safety Analysis Report for Packaging (SARP) as stated in the certificate. The scope of licensees' responsibility, unless the licensee is the certificate holder, should be limited to the information provided in the certificate, and for registrants to meet the conditions of the package and package SARP.</p>	<p>Agree. The wording was changed to match that in §71.107 to state that the licensee, certificate holder or applicant for a certificate must establish measures to assure the package is fabricated in accordance with the packaging drawings.</p>
7007-4	NEI	<p>Page 4, Section 2.1.1 second paragraph:</p> <p>Guidance is given for portioning the surface into a grid pattern. Further guidance on establishing the size of the grid should be given.</p>	<p>Agree, the document has been revised to state "The size of the grid pattern should be such that the detector being used can easily measure essentially the entire area of an individual block of grid at one time.."</p>
7007-5	NEI	<p>Page 15, reference number 3:</p> <p>NRC Regulatory Guide 7.4 is titled "Leakage Tests on Packages for Shipment of Radioactive Materials." Reference 3 of this document incorrectly cites this as Regulatory Guide 7.3.</p>	<p>Agree, reference corrected</p>
7007-6	NEI	<p>Page 5, Section 2.1.4:</p> <p>This section needs to explicitly state the type of packaging to which it is applicable (such as Type B).</p>	<p>Agree, the first paragraph has been revised to indicate that package marking is applicable to Type B packages</p>
7007-7	NEI	<p>Page 8, section 3:</p> <p>This paragraph is redundant since leakage testing is addressed in Section 2.1.5, <i>Leakage Test</i>.</p>	<p>No change has been made to the proposed contents of the regulatory guide. The leakage test referenced in section 2.1.5 is for preliminary determinations on a newly fabricated package, whereas the leakage tests in section 3 are the performed prior to each shipment.</p>

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7007-8	NEI	<p>Page 13, Section 5.3 Item c:</p> <p>This step should be completed by the certificate holder so that the user will know what to include.</p>	<p>No change has been made to the proposed contents of the regulatory guide. While the regulations in 71.95(c) clearly state that the licensee is responsible for submitting the report, the regulations do not require the licensee to perform the assessment in 71.95(c)(3) from which this paragraph derived.</p>
7007-9	Energy Solutions	<p>Section, 2.0: Suggested edits are provided in redline/strikeout below:</p> <p>"Based on the contents, the shipper should select an approved packaging (typically the package's that certificate of compliance) that authorizes the quantity and form of material to be shipped <del>as specified in the CoC</del>. <u>Note that for Type A packages there is no package authorization.</u> If there is not a package authorization for the contents to be shipped, <u>and if required for the contents, e.g., Type B quantity, then</u> the licensee should choose a package authorizing similar contents and, if the licensee is not the certificate holder, request the certificate holder to obtain an amendment from the NRC for the contents to be transported. Finally, if this has not already been done, the shipper must register as a user of the package pursuant to the conditions of the general license for NRC-approved packages in 10 CFR 71.17. <u>Note that the general license for use of an approved package applies only to licensees who have an NRC approved QA program, a copy of the CoC and documents referenced in the approval relating to the use and maintenance of the packaging and comply with the terms and conditions of the license.</u>"</p>	<p>The guide has been revised to clarify that an NRC-approved package is needed for shipment of contents that are either greater than a Type A quantity or Type AF. Note that there is a package authorization needed for Type A fissile contents.</p> <p>The last sentence suggested in the comment for appending to the end of section 2 has been added with a slight modification to indicate that the general licensee must comply with the terms and conditions of the package approval.</p>

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7007-10	Energy Solutions	<p>Section 2.1:</p> <p>"10 CFR 71.85 <i>requires</i> 3 preliminary determinations that should be included in package acceptance tests (section 8 of application for approval). Most certificates of compliance reference acceptance tests in section 8 of the application, which, in effect, makes them a requirement..." [emphasis added]. This text is confusing as to what is really required, and may be clearer with the quoted section of the second sentence simply deleted.</p>	Agree and the regulatory guide has been revised as suggested
7007-11	Energy Solutions	<p>Section 2.1.c:</p> <p>There is a typographical error in last sentence, i.e., NCR" should be "NRC".</p>	See 7007-2
7007-12	Energy Solutions	<p>Section 2.1.6.b: This section refers to Chapter 8 of a transportation application. Please clarify if is the same as Section 8 referred to in section 2.1 of DG7007 and if not what the reference is to.</p>	Agree and the guide has been revised to clarify that it does refer to the acceptance tests in Chapter 8 of the package application, which is the same section 8 referred to in DG-7007.

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7007-13	Energy Solutions	<p>Section 2.2:</p> <p>Energy <i>Solutions</i> has been supplying cask services to the nuclear industry for over thirty years. Type B casks and select Type A casks are in limited supply, which increases the burden on all users to properly manage not just the contents, but the casks themselves. Recently, improper opening of a cask resulted in bolt hole thread damage to one cask, and misuse over time resulted in bolt hole thread wear to another cask. The damaged required these two casks to be taken out-of-service for an extended period of time for major costly repair, which further restricted supply and required even longer preplanning efforts by users.</p> <p>It is Energy <i>Solutions</i> view that these types of errors can be prevented if cask users have an appropriately approved quality assurance program. Although having a QA program, in and of itself, will not prevent damage due to misuse, it will mitigate the risk by having third party oversight to check that the correct, up-to-date cask handling procedures are being referenced and followed properly. Accordingly, we propose that this section include a reference to and discussion of QA program requirements applicable to shippers, in accordance with 10 CFR 71.101.</p>	<p>While staff disagrees with the comment that a discussion of the need for a quality assurance program in section 2.2 is needed, the regulatory guide has been revised to state that the operating procedures referenced in the certificate are provided by the certificate holder and that the licensee should ensure that it has, and follows, the most up-to-date detailed operating procedures issued by the certificate holder.</p>
7007-14	Energy Solutions	<p>Section 4.0:</p> <p>For the reasons cited above, we propose that this section address QA program requirements applicable to package receivers. Also, the second sentence ends with a comma instead of a period, and appears to be an incomplete sentence missing reference to 49 CFR 173 for contamination controls.</p>	<p>While staff disagrees with the comment that a discussion of the need for a quality assurance program in section 4.0 is needed, the regulatory guide has been revised to state that the licensee should ensure that it has, and follows, the most up-to-date detailed operating procedures issued by the certificate holder.</p>

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7007-15	CORAR	<p>Page 2, section C, paragraph 2, "In addition ... licensees should perform the necessary administrative requirements ... in a safe, secure and efficient manner."</p> <p>Consider replacing "efficient" by "timely". It is not understood why efficiency would be a regulatory compliance concern.</p>	Agree, the regulatory guide has been revised as suggested.
7007-16	CORAR	<p>Page 2, section C, paragraph 2, "Rather than following NRC regulations by section number ... this regulatory guide follows the sequence of steps involved in making a shipment ..."</p> <p>CORAR appreciates this approach. It is much easier for licensees to follow and understand.</p>	No change necessary
7007-17	CORAR	<p>Page 3, paragraph 1, section C. 1.0, "Shipments ... may be ... regulated by multiple agencies (e.g., the NRC and DOT)..."</p> <p>Consider including the IAEA as another regulatory agency because a significant fraction of shipments of radioactive materials are to and from other countries.</p>	No change needed. While NRC agrees that IAEA does have rules for international shipment of radioactive material, this regulatory guide is a means to meet the requirements for domestic shipment of radioactive material and therefore applies to 10 CFR Part 71. International shipments are made under the regulatory requirements of TS-R-1, not 10 CFR Part 71.
7007-18	CORAR	<p>Page 3, paragraph 2, section C. 1.0, "The contents dictate whether a Type A, Type AF, or Type B package is required."</p> <p>Consider including "Excepted Packages" since a large number of radioactive material packages are Excepted.</p>	No change needed. Excepted packages are not required to be shipped in an NRC-approved package.

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7007-19	CORAR	<p>Page 7, section C. 2.2 c, "Ensure that any system for containing liquid is adequately sealed and has adequate space or other specified provisions for expansion of the liquid;"</p> <p>Licensees should also be advised that radionuclides in liquids, such as organic solvents, undergo radiolytic decomposition generating gases. There needs to be sufficient headspace to ensure the gas pressure is minimized and contained.</p>	<p>Agree, the guide has been revised to append "... and, if appropriate, any gas that may be generated due to radiolytic decomposition."</p>
7007-20	CORAR	<p>Page 8, section C. 4.0, "Receiving and Opening a Package"</p> <p>Consider adding the recommendation that licensees should be aware of the package configuration prior to ordering radioactive materials to ensure they have the safe means for opening the package and accessing the contents.</p>	<p>Agree, the guide has been revised to add "Additionally, for first-time receipt of a package, licensees should have discussions with the certificate holder to be aware of the package configuration prior to ordering/receiving radioactive materials to ensure they have the safe means for opening the package and accessing the contents."</p>
7007-21	CORAR	<p>Page 9, section C. 4.3, paragraph 2, "The comprehensive visual survey of the package should ensure that the package was properly assembled and did not sustain any significant damage during shipment."</p> <p>It would be useful for receivers if they were provided guidance on how to differentiate between a damaged package leaking its radioactive contents and an intact package that has been contaminated by liquid from another non-radioactive package that was damaged in the transport system or that is wetted by rain or condensation (common for packages that contain dry ice or water ice coolants).</p>	<p>No change needed. Care should always be taken when handling any package prior completing both the radiation measurements and contamination surveys. When properly performed, contamination and radiation surveys will detect whether material on the package is contaminated or not.</p>

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7007-22	CORAR	<p>Page 10, paragraph 4, section C. 4.3, "The consignee should perform radiation surveys on the surface (by placing the detector as close as is physically possible to the external surface of the package) ..."</p> <p>Consignees also need guidance on the detectors that are suitable for measuring surface radiation. Shippers commonly recommend using a side-window, energy compensated GM detector to measure radiation fields from gamma and beta emitting radionuclides because this has a suitably flat energy response for commonly shipped radionuclides and the detectors are small enough to not seriously underestimate the surface dose rate.</p>	<p>The guidance was not changed. Since the regulatory guide only applies to Type B shipments and fissile radioactive material packages, (Type AF packages) the receivers should have sufficient knowledge of measuring radiation levels to distinguish between suitable measuring equipment.</p>
7007-23	CORAR	<p>Page 10, paragraph 2, section C. 4.3, "If the preliminary survey indicates more than 2 mSv/hr (200 mrem/hr) ..."</p> <p>Consignees and carriers should be advised to take precautions to maintain exposure to ALARA when finding high radiation levels that may indicate a failure of the shielding. They may need to isolate the package, warn others in the vicinity and minimize their time and proximity to the package.</p>	<p>Agree, the guide has been revised to state that "Note that radiation levels higher than expected may indicate damage to the package or contents have shifted and ALARA and good radiation safety practices should be used at all times."</p>
7007-24	CORAR	<p>Page 10, paragraph 3, section C. 4.3, "... The wipe test is made by rubbing a filter paper..."</p> <p>Instead of "rubbing" consider "drawing". Rubbing implies a to-and-fro motion which would be inappropriate.</p>	<p>No change necessary. The terminology in this regulatory guide is consistent with that in Regulatory Guides 8.21 and 8.23, Health Physics Surveys for Byproduct Material at NRC-Licensed Processing and Manufacturing Plants and Radiation Safety Surveys at Medical Institutions, respectively. Both regulatory guides use the term rubbing in the context of taking a smear survey.</p>

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7007-25	CORAR	<p>Page 11, section C. 5.2 a, "... (see Regulatory Position 2.0)."</p> <p>We are not sure what is intended by "Regulatory Position 2.0". Clarify by adding "on page 3" if this is the intent.</p>	<p>No change necessary. Regulatory position 2 refers to section 2.0 in Section C of this Regulatory Guide.</p>