

DOE Applicant Review Guide for Updating Type A Fissile & Type B Packagings from “-85” to “-96” Designation

Item	Issue	Explanation ⁽¹⁾	Applicant Action																																								
1	10 CFR 71 Section Redesignations	<p>Several sections in Part 71 were redesignated in the rulemaking to improve consistency and ease of use. For some sections, only the section number is changed. However, for other sections, the regulatory language was revised.</p> <p style="text-align: center;">REDESIGNATION TABLE</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>New section number</th> <th>Existing section number</th> </tr> </thead> <tbody> <tr> <td>§ 71.8</td> <td>§ 71.11.</td> </tr> <tr> <td>§ 71.9</td> <td>New section.</td> </tr> <tr> <td>§ 71.10</td> <td>New section.</td> </tr> <tr> <td>§ 71.11 (Reserved)</td> <td>NA.</td> </tr> <tr> <td>§ 71.12</td> <td>§ 71.8.</td> </tr> <tr> <td>§ 71.13</td> <td>§ 71.9.</td> </tr> <tr> <td>§ 71.14</td> <td>§ 71.10.</td> </tr> <tr> <td>§ 71.15</td> <td>§ 71. 53.</td> </tr> <tr> <td>§ 71.16 (Reserved)</td> <td>NA.</td> </tr> <tr> <td>§ 71.17</td> <td>§ 71.12.</td> </tr> <tr> <td>§ 71.18 (Reserved)</td> <td>NA.</td> </tr> <tr> <td>§ 71.19</td> <td>§ 71.13.</td> </tr> <tr> <td>§ 71.20</td> <td>§ 71.14.</td> </tr> <tr> <td>§ 71.21</td> <td>§ 71.16.</td> </tr> <tr> <td>§ 71.22</td> <td>§ 71.18.</td> </tr> <tr> <td>§ 71.23</td> <td>§ 71.20.</td> </tr> <tr> <td>§ 71.24 (Reserved)</td> <td>§ 71.22 (Section removed).</td> </tr> <tr> <td>§ 71.25 (Reserved)</td> <td>§ 71.24 (Section removed).</td> </tr> <tr> <td>§ 71.53 (Reserved)</td> <td>§ 71.53 (Section redesignated).</td> </tr> </tbody> </table>	New section number	Existing section number	§ 71.8	§ 71.11.	§ 71.9	New section.	§ 71.10	New section.	§ 71.11 (Reserved)	NA.	§ 71.12	§ 71.8.	§ 71.13	§ 71.9.	§ 71.14	§ 71.10.	§ 71.15	§ 71. 53.	§ 71.16 (Reserved)	NA.	§ 71.17	§ 71.12.	§ 71.18 (Reserved)	NA.	§ 71.19	§ 71.13.	§ 71.20	§ 71.14.	§ 71.21	§ 71.16.	§ 71.22	§ 71.18.	§ 71.23	§ 71.20.	§ 71.24 (Reserved)	§ 71.22 (Section removed).	§ 71.25 (Reserved)	§ 71.24 (Section removed).	§ 71.53 (Reserved)	§ 71.53 (Section redesignated).	Review and revise SARP references to the CFR sections as applicable.
New section number	Existing section number																																										
§ 71.8	§ 71.11.																																										
§ 71.9	New section.																																										
§ 71.10	New section.																																										
§ 71.11 (Reserved)	NA.																																										
§ 71.12	§ 71.8.																																										
§ 71.13	§ 71.9.																																										
§ 71.14	§ 71.10.																																										
§ 71.15	§ 71. 53.																																										
§ 71.16 (Reserved)	NA.																																										
§ 71.17	§ 71.12.																																										
§ 71.18 (Reserved)	NA.																																										
§ 71.19	§ 71.13.																																										
§ 71.20	§ 71.14.																																										
§ 71.21	§ 71.16.																																										
§ 71.22	§ 71.18.																																										
§ 71.23	§ 71.20.																																										
§ 71.24 (Reserved)	§ 71.22 (Section removed).																																										
§ 71.25 (Reserved)	§ 71.24 (Section removed).																																										
§ 71.53 (Reserved)	§ 71.53 (Section redesignated).																																										

DOE Applicant Review Guide for Updating Type A Fissile & Type B Packagings from “-85” to “-96” Designation

Item	Issue	Explanation ⁽¹⁾	Applicant Action
2	Revised A ₁ and A ₂ Hazard Unit Values	The A ₁ and A ₂ Hazard Unit values were revised by IAEA based on refined modeling of possible doses from radionuclides.	This change requires a revision to the SARP for “-96” certification in SARP Sections where A ₁ /A ₂ values are calculated, or used in calculations.
3	Uranium Hexafluoride (UF ₆) Package Requirements	The final rule provides, in new §71.55(g), a specific exception for certain uranium hexafluoride (UF ₆) packages from the requirements of §71.55(b). The exception allows evaluation of the criticality safety of UF ₆ packages without considering the in-leakage of water into the containment system provided certain conditions are met, including uranium enrichment less than five weight percent U-235.	Review and revise the SARP per §71.55(g) of the CFR as applicable.
4	Introduction of Criticality Safety Index (CSI)	The final rule adopts the TS–R–1 (paragraphs 218 and 530). Paragraph 218 results in NRC incorporating a Criticality Safety Index (CSI) in Part 71 that is determined in the same manner as current Part 71, <i>Transport Index for criticality control purposes</i> , but now it must be displayed on shipments of fissile material (paragraphs 544–545) using a new <i>fissile material</i> label. NRC’s adoption of TS–R–1 (Paragraph 530) increases the CSI per-package limit from 10 to 50 for fissile material packages in nonexclusive use shipments. (The previous Transport Index criticality limit was 10.) The TI is determined in the same way as the <i>TI for radiation control purposes</i> and continues to be displayed on the traditional radioactive material label.	This change requires a revision to the SARP for “-96” certification to include a definition of CSI (for fissile material package) and changing the existing TI definition, references, and applications (e.g., Chapters 1, 6, and 7, etc.). In addition, this change requires a modification to the label on each the package to state the CSI.

DOE Applicant Review Guide for Updating Type A Fissile & Type B Packagings from “-85” to “-96” Designation

Item	Issue	Explanation ⁽¹⁾	Applicant Action
5	Deep Immersion Test	<p>The final rule adopts the requirement for an enhanced water immersion test (deep immersion test) which is applicable to any Type B or C packages containing activity greater than $10^5 A_2$ units. The purpose of the deep immersion test is to ensure package recoverability. The basis for expanding the scope of the deep immersion test to include additional Type B or C packages containing activity greater than $10^5 A_2$ units was due to the fact that radioactive materials, such as plutonium and high-level radioactive waste, are increasingly being transported by sea in large quantities</p>	<p>This change requires a revision to the SARP and testing or analysis to meet §71.61 for “-96” certification, if the packaging contains radioactivity greater than $10^5 A_2$ units</p>
6	Grandfathering Previously Approved Packages	<p>The final rule adopts the new grandfathering provisions for previously approved packages.</p> <p>For “-85” packages:</p> <ul style="list-style-type: none"> • Fabrication completion prior to December 31, 2006 • After December 31, 2003, a package used for a shipment to a location outside the United States is subject to multilateral approval as defined in DOT regulations at 49 CFR 173.403. 	<p>This change places additional conditions on “-85” packages, per §71.19(c)</p>
7	Changes to Various Definitions	<p>The final rule adopts the TS–R–1 definition of Criticality Safety Index (CSI). NRC believes this provides internal consistency and compatibility with TS–R–1. Additionally, the following definitions have been revised to improve their clarity and maintain consistency with DOT: A_1, A_2, Consignment, LSA–I, LSA–II, LSA–III and Unirradiated Uranium. NRC believes that terms must be clearly defined to accurately communicate requirements to licensees.</p>	<p>This change requires a revision to the SARP for “-96” certification in the SARP Sections where these terms are used.</p>

DOE Applicant Review Guide for Updating Type A Fissile & Type B Packagings from “-85” to “-96” Designation

Item	Issue	Explanation ⁽¹⁾	Applicant Action
8	Crush Test	The final rule adopts, in §71.73, the TS–R–1 requirement for a crush testing fissile material package designs and eliminates the 1,000 A ₂ unit criterion, but maintains the current Part 71 testing sequence plus drop and crush test requirements.	This change requires a revision to the SARP and testing or analysis to meet this requirement for “-96” certification, if the packaging meets the conditions of §71.73(c)2
9	Fissile Material Package Design for Transport by Aircraft	The final rule adopts TS–R–1, Paragraph 680, <i>Criticality Evaluation</i> , in a new §71.55(f) that only applies to fissile material package designs that are to be transported aboard aircraft.	This change requires a revision to the SARP and analysis to meet this requirement for “-96” certification, IF the package contains fissile material and is designed for air transport.
10	Special Package Authorization	The final rule adopts, in §71.41(d), <i>Special Package Authorizations</i> that will apply only in limited circumstances and only to one-time shipments of large components. Special package authorization regulations are necessary, because there are no regulatory provisions in Part 71 for dealing with nonstandard packages, other than the exemption provisions and §71.41(c).	This change requires a revision to the SARP and Special Package Authorization if it is impractical to meet regulatory requirements.
11	Expansion of Part 71 QA Requirements to CoC Holders	The final rule adds the terms <i>certificate holder</i> and <i>applicant for a CoC</i> to Subpart H, Part 71 and adds a new section, §71.9, on employee protection. Adopting these requirements will ensure that the regulatory scheme of Part 71 will remain more consistent with other NRC regulations in that certificate holders and applicants for a CoC will be responsible for the behavior of their contractors and subcontractors.	Review and revise the SARP to include <i>certificate holder</i> and <i>applicant for a CoC</i> as applicable.

DOE Applicant Review Guide for Updating Type A Fissile & Type B Packagings from “-85” to “-96” Designation

Item	Issue	Explanation ⁽¹⁾	Applicant Action
12	Fissile Material Exemption and General License Provisions	The final rule adopts various revisions to the fissile material exemptions and the general license provisions in Part 71 to facilitate effective and efficient regulation of the transport of small quantities of fissile material. The fissile exemptions (§71.15) have been revised to include controls on fissile package mass limit combined with package fissile-to-nonfissile mass ratio. The general license for fissile material (§71.22) has been revised to consolidate and simplify current fissile general license provisions from §§71.18, 71.20, 71.22, and 71.24. Under the final rule, the general license is based on mass based limits and the CSI.	Review and revise the SARP references to the CFR sections as applicable.
13	Double Containment on Plutonium	The NRC has decided to remove the double containment requirement because this regulation is neither risk informed nor performance-based. There are many nuclides with A ₂ values the same or lower than those of plutonium for which double containment has never been required (e.g., Pu—241). Thus, requiring double containment for plutonium alone is not consistent with the relative hazard rankings in Table A–1. The Type B packaging standards, which the outer containment of plutonium shipments must meet, in and of themselves, provide reasonable assurance that public health and safety and the environment are protected during the transportation of radioactive material. This position is supported by an excellent safety record in which no fatalities or injuries have been attributed to material transported in a Type B package. The imposition of an additional packaging requirement (in the form of a separate inner container) is fundamentally inconsistent with this position and is technically unnecessary to assure safe transport.	This change requires a revision to the SARP, for double containment packagings, for “-96” certification to address the new requirement; whether or not the applicant intends to change a double containment package design to credit only single containment.

DOE Applicant Review Guide for Updating Type A Fissile & Type B Packagings from “-85” to “-96” Designation

Item	Issue	Explanation ⁽¹⁾	Applicant Action
14	Modifications of Event Reporting Requirements	The final rule revises, in §71.95, the event reporting submission period to provide a written report from 30 to 60 days. Other regulatory requirements to orally notify the NRC Operations Center promptly of an event and for licensees to report instances of failure to follow the conditions of the CoC while packaging was in use remain unchanged.	Review and revise SARP references to §71.95, as applicable.

(1) The explanations presented in this guide are condensed summaries from the Final Rules of the Federal Register / Vol. 69, No. 16 / Monday, January 26, 2004 / Rules and Regulations.

Address comments to mbennett@rampac.com