



# International Perspective on Radioactive Material Package Approvals

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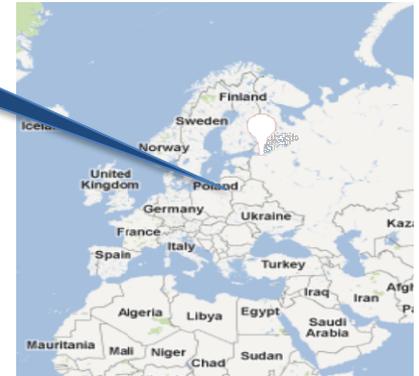
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**Transport Logistics International, Inc. (TLI)** is dedicated to offering superior management services for domestic and international movements of radioactive cargoes. TLI offers integrated service to the front and back end sectors of the nuclear fuel cycle, ensuring safe, secure and economic transport.

TLI's comprehensive portfolio of expertise provides for strict adherence to international and domestic regulations, packaging requirements and import/export controls. In addition, the company offers DOT-Compliant HAZMAT Training, consulting services associated with transportation feasibility studies, export licensing activities, package validations and antidumping order compliance, and RAM package licensing and engineering services



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# “Regulatory Bifurcations”



*"When you come to a fork  
in the road, take it."*

Yogi Berra



# Navigating the Differences in Package Approval Requirements

1. Quality Assurance Programs for Radioactive Material Packaging
2. Renewal and amendment of package approvals
  1. Package approval types
  2. Safety report formats
  3. Package test sequences





# 1. Quality Assurance Programs for Radioactive Material Packaging

ASME NQA-1 “Quality Assurance Requirements  
for Nuclear Facility Applications”

“Management Systems”

10 CFR 71, Subpart H--Quality Assurance



“Quality Assurance Program”

ISO 9001 “Quality Management systems-  
Requirements”

IAES TS-G-1.4 “The Management System for the  
Safe Transport of Radioactive Material”



## 2. Renewal and Amendment of Package Approvals

### *71.38 Renewal of a certificate of compliance or quality assurance program approval*

- Timely renewal a great provision
  - Allows a Certificate of Compliance to remain in effect during the review process.
  - Allows continued domestic transport
- DOT CAC expiration date not automatically extended
  - Need to apply for revision to extend, which nullifies foreign validations.
- Current solution
  - Begin U.S. renewal process early to avoid need for *timely renewal*.
  - International packages do not benefit from *timely renewal*.
- Request / need
  - Joint NRC-USDOT policy that provides for timely renewal.

(b) In any case in which a person, not less than 30 days before the expiration of an existing Certificate of Compliance or Quality Assurance Program Approval issued pursuant to the part, has filed an application in proper form for renewal of either of those approvals, the existing Certificate of Compliance or Quality Assurance Program Approval for which the renewal application was filed shall not be deemed to have expired until final action on the application for renewal has been taken by the Commission.



## 2. Renewal and Amendment of Package Approvals

### *Overlap Provision for Superseded CoC revisions*

- NRC began including provision in CoC's approximately 7 years ago.
  - Requested by the applicant.
  - Keeps the superseded revision active for one year beyond expiration date.
  - USDOT CAC includes same provision.
  - Allows enough time to obtain USDOT CAC and foreign validations
  - License renewal process does not have to start real early
  - Transports are not interrupted.
- Current situation
  - Not codified
  - No guidance found in (ISG) interim staff guidance document
  - Applicants may not know about it
  - No equivalent practice among Competent Authorities
- Request / need
  - Joint NRC-USDOT policy that clarifies the policy.



### 3. Package Approval Types

#### *The IF Conundrum (not being asked for amusement)*

- TSR-1 has provisions for licensing IP packages for fissile material (IF-96)
- United States does not recognize IF package types.
- Foreign IF-96 package approvals
  - Cannot be endorsed as AF with restrictions.
  - Applicant must obtain either a B(U)-F or AF approval and then apply for USDOT endorsement.
- U.S. origin packages where IF-96 is desired in Europe
  - Must obtain B(U)F CoC
  - Perception is that Competent Authorities may or may not issue IF validation.
- Request / need
  - Reconsider IF package type.

co·nun·drum/kə'n ɛndrəm/

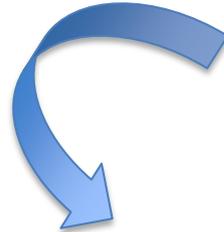
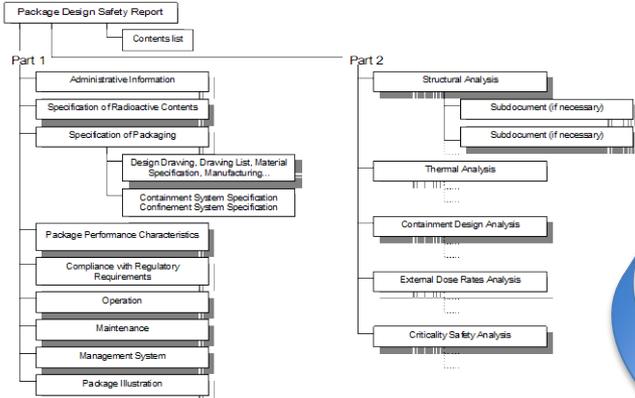
Noun: A confusing and difficult problem or question.

A question asked for amusement, typically one with a pun in its answer; a riddle.

# 4. Safety Report Formats

## “Safety Analysis Report”

10 CFR 71, Subpart D--Application for Package Approval  
 Regulatory Guide 7.9 – “STANDARD FORMAT AND CONTENT OF PART 71 APPLICATIONS”



## “Package Design Safety Report”

IAES TS-R-1 “Requirements for the Safe Transport of Radioactive Material”  
 European PDSR Guide



U. S. NUCLEAR REGULATORY COMMISSION Revision 2  
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**REGULATORY GUIDE**  
 OFFICE OF NUCLEAR REGULATORY RESEARCH

**REGULATORY GUIDE 7.9**

(Draft was issued as DG-7003, dated December 2003)

**STANDARD FORMAT AND CONTENT  
 OF PART 71 APPLICATIONS  
 FOR APPROVAL OF PACKAGES FOR RADIOACTIVE MATERIAL**



## 5. Package Test Sequence

### § 71.73 Hypothetical accident conditions.

(a) *Test procedures.* Evaluation for hypothetical accident conditions is to be based on sequential application of the tests specified in this section, in the order indicated, to determine their cumulative effect on a package or array of packages. An undamaged specimen may be used for the water immersion tests specified in paragraph (c)(6) of this section.

(c) *Tests.* Tests for hypothetical accident conditions must be conducted as follows:

- (1) *Free Drop.*
- (2) *Crush.*
- (3) *Puncture.*

Request / need

- Reconsider package test sequence.

### TSR-1 Section 727. Mechanical Test

The mechanical test consists of three different drop tests. Each specimen shall be subjected to the applicable drops as specified in para. 657 or para. 682. *The order in which the specimen is subjected to the drops shall be such that, on completion of the mechanical test, the specimen shall have suffered such damage as will lead to maximum damage in the thermal test which follows:*