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Ms. Annette L. Vietti-Cook
Secretary of the Commission
U.S. Nuclear Regulatory Commission
Washington, DC 20555

REFERENCES: JULY 10, 2000 LETTER FROM E. WILLIAM BRACH, USNRC
JULY 17, 2000 FEDERAL REGISTER - VOLUME 65 NUMBER 137 (PAGES
44359 - 44397)

Dear Ms. Vietti-Cook:

**SUBJECT: NUCLEAR REGULATORY COMMISSION ISSUE PAPER "MAJOR REVISION
TO 10 CFR PART 71: COMPATIBILITY WITH ST-1 - THE IAEA
TRANSPORTATION SAFETY STANDARDS - AND OTHER TRANSPORTATION
SAFETY ISSUES"**

GTS Duratek (Duratek) appreciates the opportunity to provide comments on the subject Issue Paper as requested by the U. S. Nuclear Regulatory Commission. Duratek owns the largest fleet of Radioactive Material (RAM) packagings in the U.S. and has designed and fabricated numerous Type B packagings. With the transportation of RAM becoming a global concern, consistency of regulation promotes compliance with minimal confusion.

Duratek supports the Commission's goal of U.S. compatibility with international regulation. Enclosed are our comments specific to Issues 1, 8, 14 and 17.

Should the Commission have any questions or wish to discuss our comments, we would be please to do so. I can be reached at (803) 758-1824 or by electronic mail at plpaquin@gtsduratek.com.

Sincerely,

Patrick L. Paquin
General Manager
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SECY-02

GTS DURATEK'S COMMENTS
PERTAINING TO THE MAJOR REVISION TO
10 CFR PART 71: COMPATIBILITY WITH ST-1 – THE IAEA TRANSPORTATION
SAFETY STANDARDS – AND OTHER TRANSPORTATION SAFETY ISSUES

Issue 1: Changing Part 71 to SI units only

Factor 1 - What changes would licensees and Certificate of Compliance holders have to make to relevant documents if NRC revised 10 CFR Part 71 to require SI units only?

Comment: Duratek does not support a change to require only System International (SI) units. We support continued use of the dual unit system to avoid possible confusion or misunderstandings due to the use of the SI system (e.g. Becquerels and Sieverts).

Factor 2 - What risks and safety impacts might occur in shipments because of possible confusion or erroneous conversion between the currently utilized English units and SI units?

Comment: Even after a change to the use of only SI units, shippers will continue to think in English units. From this perspective, there could be errors associated with erroneous conversions from English units to SI units made by shippers who may be unfamiliar with SI units. However the greater impact relates more to radiological facilities using traditional English units for radiation protection and control. The typical radiological workers who may find themselves in the vicinity of a shipping package may not understand the radiological risk the package presents because of the unfamiliarity with SI units.

Factor 3 - What sort of transition period would be needed to allow for the conversion to exclusive use of SI units?

Comment: Conversion to SI units for shipments could be done easily within a year. However, the transition of the majority of radiological workers understanding of SI units is uncertain. The general population of the United States has unsuccessfully tried to transition to SI units over several decades.

Factor 4 - What other conforming changes would have to be made to Title 10?

Comment: English units are used throughout Title 10 as well as in regulations used by other government agencies. Until there is consistency in using SI units and the SI units are adopted for general use, the NRC should allow the continued use of dual units.

Issue 8: Grandfathering Previously Approved Packages

Factor 1 - Should the “grandfathering “ of previously approved packages be limited to those approved under the last two major revisions of the regulations? If not, on what basis should the “grandfathering “ of previously approved packages be allowed?

Comment: Grandfathering should not be limited to the last two major revisions. The grandfathering provisions for use of previously approved packagings in the current 10 CFR 71.13 should be retained including the requirements on modifications in 71.13(c). The approval for fabrication should be revised to reflect the ST-1 limitations of approval within the last two major revisions or recertification prior to fabrication. Large Type B and spent fuel packages are very expensive to design and fabricate. This investment can not be justified if the potential lifetime of the cask is limited by a regulatory revision cycle, which is proposed to be as short as 6 years. There are spent fuel casks in which have been used safely for over 20 years. The usability of these packages should not be limited by an arbitrary regulatory revision cycle.

Factor 2 - How long should “grandfathered” packages be allowed to be fabricated or used?

Comment: See above

Factor 3 - What type and magnitude of package design changes should be allowed for “grandfathered” packages, before re-certification to the current set of regulations is required?

Comment: Design and contents modifications should be allowed as specified in the current 71.13(c).

Factor 4 - IAEA has initiated a process to review and update ST-1 on a two-year frequency and does this new process raise any issues on the grandfathering limitations to the last two major revisions?

Comment: A two-year revision cycle could have a significant effect on package use. The two-year cycle would require recertification at least every 6 years. The expense of recertification is not justified since no significant increase in safety is likely.

Issue 14: Adoption of ASME Code

Factor 1 - Can other regulatory vehicles for NRC endorsement of Code be used or should this only be done by rulemaking?

Comment: Weaknesses in the oversight of vendor/fabricator activities by packaging owners during the fabrication process should not be the basis for implementing the ASME Code. Part 71 already requires the implementation of NRC approved Quality Assurance (QA) and Quality Control (QC) programs to perform activities under Part 71, including fabrication activities. Rulemaking should not be used for NRC endorsement of the ASME Code as it applies to the design, certification and fabrication of packagings. Reference to the applicability of the ASME Code for cask design currently exists in NRC Regulatory Guides. These guides include the following documents:

- 7.6 Design Criteria for the Structural Analysis of Shipping Cask Containment Vessels
- 7.10 Establishing Quality Assurance Programs for Packaging Used in the Transport of Radioactive Material (Combined Draft TP 019-4, published 6/1981, and Draft TP 020-4, published 3/1981)
- 7.11 Fracture Toughness Criteria of Base Material for Ferritic Steel Shipping Cask Containment Vessels with a Maximum Wall Thickness of 4 Inches (0.1 m) (Draft MS 144-4 published 6/1983) (Draft DG-7001 published 7/1989)

Design requirements of the ASME Section III Division 3 are based on the design of containment vessels. Invoking the requirements of this code in Part 71, which includes the shipment requirements for radioactive materials including spent fuel, will put undue burden on the industry. Section III Division 3 of the Code in its present form requires, that:

- The design owner must obtain accreditation from the ASME
- The packaging owner must obtain accreditation from the ASME
- The material organization must obtain accreditation from the ASME
- The fabricator must be a TP Certificate holder and must obtain an N-type Certification of Authorization from the ASME

Recognizing that the volume of business in the nuclear waste industry is rather small, the cost of complying with the above accreditation and certification will narrow the organizations that perform the above tasks to a very few. This increase cost will not necessarily equate to an equivalent increase in packaging safety.

In addition, for any Code requirements being invoked, a distinction must be made between the safety significance of spent-fuel casks and other Type B radioactive material casks. Regulatory Guides are the appropriate vehicle to invoke applicable parts of Section III, Division 3 or Section VIII for different categories of waste – spent-fuel, high level and low level materials.

Factor 2 - Are there other voluntary consensus standards that should be considered in addition to, or in lieu of, ASME code?

Comment: See above.

Issue 17: Double Containment of Plutonium

Factor 1 - Should NRC change any of the special requirements for the transportation of plutonium?

Comment: Yes, the NRC should change the special requirements for transportation of plutonium. The existing requirements are overly conservative. The Q-system and the A_1 and A_2 values of 10 CFR 71 can adequately address the hazards associated with plutonium shipments.

Factor 2 - Should the double containment requirement in 71.63(b) be eliminated?

Comment: Yes, the special double containment requirement conflicts with the intent to have a performance based regulatory system.

Factor 3 - Should both the solid form and the double containment requirements of 71.63(a) and (b) be eliminated?

Comment: Yes, the special requirements for plutonium are not necessary. Several radionuclides are judged to be as hazardous in transportation as plutonium. These radionuclides, e.g., Am-241, Cm-245, and Th-230, have A_2 values as restrictive as the most hazardous plutonium isotopes and more restrictive than several, e.g., Pu-237 and Pu-241. There are no "special" requirements for these radionuclides, and none are required.

Factor 4 - Is consistency with IAEA standard ST-1 important on this issue?

Comment: Consistency with ST-1 is not as important as internal consistency and consistency with the performance basis of the regulations. Special requirements for plutonium when the hazards are accounted for by the Q-system and the A_1 and A_2 values do not increase the safety of transportation.

From: Evangeline Ngbea
To: SECY
Date: Mon, Oct 2, 2000 3:18 PM
Subject: Fwd: Comment on Request for Comments on IAEA Transportation...
Place: SECY