



DEPARTMENT OF TRANSPORTATION  
HAZARDOUS MATERIALS REGULATIONS BOARD  
WASHINGTON, D.C. 20590

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[ 49 CFR Part 173 ]

[Docket No. HM-98; Notice 72-2]

**RADIOACTIVE MATERIALS**

**Preparation of Packages for Shipment**

The Hazardous Materials Regulations Board is considering amending §§ 173.389 and 173.393 of the Department's Hazardous Materials Regulations to specify requirements to be fulfilled before each shipment of radioactive materials packages.

As a result of past experience arising from the very few incidents involving leakage from radioactive materials packages in transportation, it has become increasingly evident that more attention and emphasis should be placed by the shippers on the proper preparation of their packages for shipment. Although the regulatory standards are considered quite adequate in terms of the containment, radiation, and contamination limitations, the Board believes the regulatory language in the general packaging requirements, which effectively relates to quality control, is not sufficient. The reasons behind improper quality control or failure to properly prepare packages for shipment usually involve a breakdown in administrative controls, rather than a faulty design or inadequate packaging standards, per se.

The U.S. Atomic Energy Commission has recommended to the Board that certain wording be added to the general packaging requirements for radioactive materials. The Board agrees that such wording would be helpful, not only in clarifying the quality control and package preparation requirements, but also would improve the enforceability of the regulations which may be necessitated due to faulty package preparation. Further, such regulatory language is generally consistent with the present standards, as well as those proposed by the International Atomic Energy Agency (IAEA).

In consideration of the foregoing, the Board proposes to amend Part 173 as follows:

(A) In § 173.389, paragraphs (m) and (n) would be added to read as follows:

§ 173.389 Radioactive materials; definitions.

(m) Containment system—containment system of a radioactive materials package shall mean those components of the packaging, including special form encapsulation where used, which have been specified by the package designer as intended to retain the radioactive contents during transport, whether or not individual vessels in the packaging retain their integrity of containment.

(n) Maximum normal operating pressure—maximum normal operating pressure shall mean the maximum pressure above atmospheric pressure at mean sea level that would develop in the containment system in a period of 1 year, under the conditions of temperature and solar radiation corresponding to environmental conditions of transport in the absence of venting, external cooling by an ancillary system or operational controls during transport.

(B) In § 173.393, paragraphs (m) and (n) would be added to read as follows:

§ 173.393 General packaging requirements.

(m) Prior to the first shipment of any package, the shipper shall insure that:

(1) The packaging meets the specified quality of design and construction;

(2) The effectiveness of the shielding and containment, and, where necessary, the heat transfer characteristics of the package are within the limits applicable to or specified for the package design.

(n) Prior to each shipment of any package, the shipper shall insure by examination or appropriate tests that:

(1) The packaging is proper for the contents to be shipped;

(2) The packaging is in unimpaired physical condition;

(3) The closure devices of the packaging, including any required gaskets are properly installed and secured and free of defects;

(4) For fissile materials, any moderators and neutron absorbers, if required, are present in proper condition;

(5) Any special instructions for filling, closing, and preparation of the package for shipment have been followed;

(6) All closures, valves, and other openings of the containment system through which the radioactive contents might escape are properly closed and sealed;

(7) The internal pressure of the containment system will not exceed, during the anticipated period of transport, the maximum normal operating pressure;

(8) External radiation and contamination levels are within the allowable limits.

Interested persons are invited to give their views on this proposal. Communications should identify the docket number and be submitted in duplicate to the Secretary, Hazardous Materials Regulations Board, Department of Transportation, 400 Sixth Street SW., Washington, DC 20590. Communications received on or before May 23, 1972, will be considered before final action is taken on the proposal. All comments received will be available for examination by interested persons at the Office of the Secretary, Hazardous Materials Regulations Board, both before and after the closing date for comments.

This proposal is made under the authority of sections 831-835 of title 18, United States Code, section 9 of the Department of Transportation Act (49 U.S.C. 1657), and title VI and section 802(h) of the Federal Aviation Act of 1958 (49 U.S.C. 1421-1430 and 1472(h)).

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W. J. BURNS,  
Chairman, Hazardous  
Materials Regulations Board.

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