

85

RECORD #85

TITLE: Rev. 1 - Clarification of Certain Requirements for
Exclusive-Use Shipments

FICHE: 38351-079

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, D.C. 20555

February 12, 1982

IE INFORMATION NOTICE NO. 80-32 Rev. 1: CLARIFICATION OF CERTAIN REQUIREMENTS
FOR EXCLUSIVE-USE SHIPMENTS OF RADIO-
ACTIVE MATERIALS

This is a supplement to IE Information Notice No. 80-32, originally issued August 29, 1980. It is intended to clarify Question/Answer Numbers 1, 5 and 6 and Appendices A and B on which there have been numerous questions and inquiries. Those paragraphs and appendices are superceded as follows:

1. Q. What radiation limits would apply to shipments being transported on an open exclusive-use transport vehicle?
 - A. The constraints of 49 CFR 173.393(j)(3) and (4) would apply; e.g., 10 mrem/hr at 2 meters from the open planes projected by the outer lateral edges of the vehicle, and 2 mrem/hr in any normally occupied area of the vehicle (cab).

Note: As a matter of clarification, it is important to point out that, in its queries to the Department of Transportation (DOT) on the correct interpretation of 173.393(i) and (j), NRC has been advised that the existing language of 173.393(j) does not clearly reflect the original intent of the regulation; i.e., to limit the radiation level at the accessible exterior surface of a package on an open exclusive-use vehicle to 200 mrem/hr (such as the same limit applied to the surface of a closed transport vehicle). DOT has stated that it is currently taking steps to revise 173.393(j). In the interim, NRC licensees are urged and cautioned to adhere to a surface radiation level limit of 200 mrem/hr on a package transported on an open exclusive-use transport vehicle, as has been the practice and interpretation of most shippers in the past.

5. Q. If "packages," such as secondary inner drums, (as contrasted to a simple personnel barrier as discussed in Q.4 above), are enclosed within an outer shield, may this shield be considered to be an integral part of the "closed transport vehicle" when such a shield provides attenuation of the vehicle radiation levels to meet the 200 mrem/hr limit of 173.393(j)(2)? Further, what other considerations are there in such a situation in determining what constitutes the "package" as opposed to the "vehicle"?
 - A. This question of defining what constitutes the "package" has arisen frequently and has created much confusion. Generally speaking, the criteria to be considered, which are illustrated in Appendix B, include the following factors:

Whether or not any single inner container, e.g., drum has a radiation level of less than 1 rem/hr at 3 feet 173.393(j)(1)

Whether or not any single inner container, if bearing LSA material, has a quantity of radioactivity exceeding Type A 10 CFR 71.7(b), 71.11(b)(1), 71.12(b) and 71.35.

Given the above considerations and the DOT definitions of "closed transport vehicle" 173.389(q) and "packaging" (171.8), each inner drum within an outer shield integrally attached to the vehicle may be considered a "package" provided that each inner drum complies with 173.393(j)(1), (1 rem/hr at 3 ft) and also provided that the content within any single inner drum does not exceed a Type A quantity of LSA material. In this configuration, the outer enclosure may be considered as the closed transport vehicle and may incorporate integral shielding to meet the vehicle limit of 173.393(j)(2) (200 mrem/hr). The inner drums would be marked as packages and the outer enclosure placarded as a vehicle.

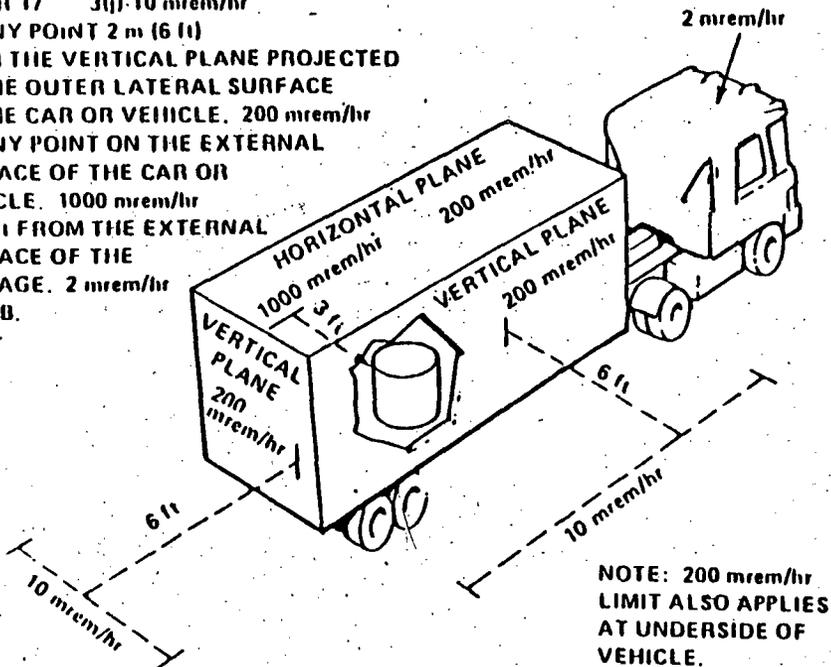
6. Q. In contrast, under what circumstances would the outer enclosure plus its secondary inner containers, taken together, be considered as the "package"?
- A. The combination of inner containers plus the outer shield are considered the "package" if any single inner container has a quantity of radioactivity as LSA exceeding Type A or if any single inner container exceeds the limit of 173.393(j)(1) 1 rem/hr at 3 ft. Such "packages" must be certified as Type A by the NRC Office of Nuclear Materials Safety and Safeguards.

No written response to this notice is required. If you need additional information regarding this subject, contact the Regional Administrator of the appropriate NRC Regional Office.

Attachments:

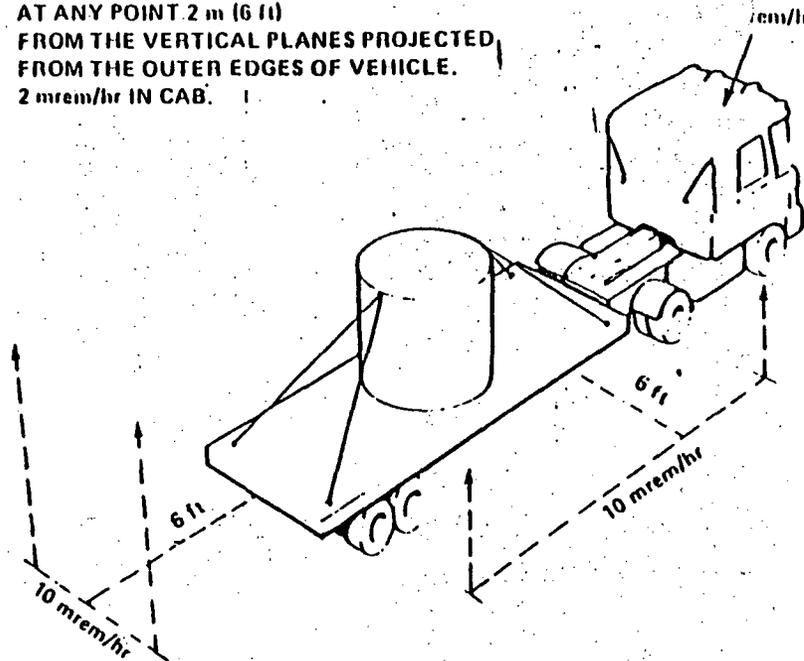
1. Appendices A and B
2. Recently Issued IE Information Notice

49 CFR 173.393(j)-10 mrem/hr
 AT ANY POINT 2 m (6 ft)
 FROM THE VERTICAL PLANE PROJECTED
 BY THE OUTER LATERAL SURFACE
 OF THE CAR OR VEHICLE. 200 mrem/hr
 AT ANY POINT ON THE EXTERNAL
 SURFACE OF THE CAR OR
 VEHICLE. 1000 mrem/hr
 AT 3 ft FROM THE EXTERNAL
 SURFACE OF THE
 PACKAGE. 2 mrem/hr
 IN CAB.



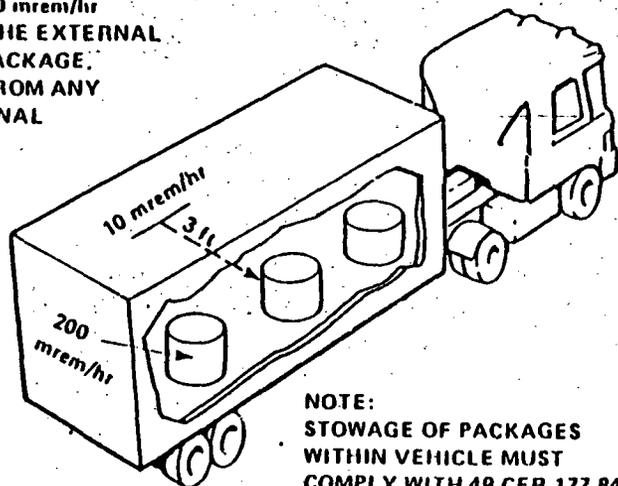
EXCLUSIVE-USE CLOSED TRANSPORT

49 CFR 173.393(j)-10 mrem/hr
 AT ANY POINT 2 m (6 ft)
 FROM THE VERTICAL PLANES PROJECTED
 FROM THE OUTER EDGES OF VEHICLE.
 2 mrem/hr IN CAB.



EXCLUSIVE-USE OPEN TRANSPORT

49 CFR 173.393(i)-200 mrem/hr
 AT ANY POINT ON THE EXTERNAL
 SURFACE OF THE PACKAGE.
 10 mrem/hr AT 3 ft FROM ANY
 ACCESSIBLE EXTERNAL
 SURFACE OF THE
 PACKAGE.



NOTE:
 TOTAL TI IS NOT
 TO EXCEED 50 PER
 49 CFR 177.842(a).

NOTE:
 STOWAGE OF PACKAGES
 WITHIN VEHICLE MUST
 COMPLY WITH 49 CFR 177.842(b).

**NON-EXCLUSIVE-USE OPEN OR CLOSED
 TRANSPORT**

Appendix A

IE Information Notice 80-32, Rev 1

**RADIATION
 LIMITS**

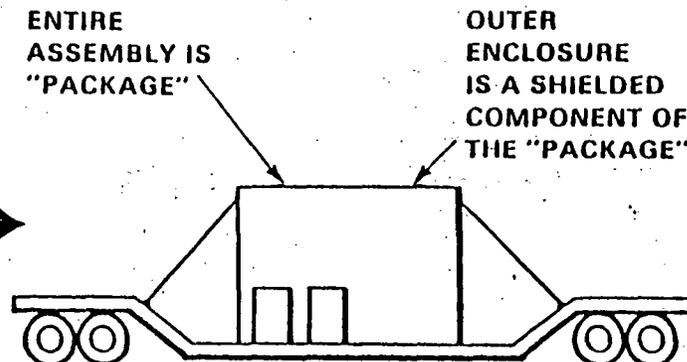
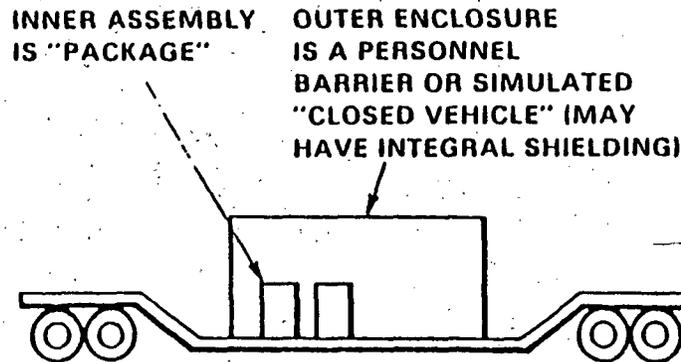
49 CFR 173.393(i) AND (j)

WHAT COMPRISES THE PACKAGE?

PERTINENT CONSIDERATIONS:

- The Definition of a "closed transport vehicle" - see 49 CFR 173.389(g)
- 49 CFR 171.8 Defines packaging such that you must consider the ...assembly of one or more containers and any other components necessary to achieve compliance with the minimum packaging requirements...
- The NRC general license requirements of 10 CFR 71.7(b) , 71.11(b)(1), 71.12(b), and 71.35 require that any "package" used to ship LSA in quantity exceeding Type A must be designed to withstand standards for normal conditions of transport

THEREFORE:



OR

IF

- radiation level at 3' from any secondary inner "package" does not exceed 1 rem/hr (See 173.393(j)(1); and
- radiation level at exterior surface of outer enclosure does not exceed 200 mrem/hr (See 173.393(j)(2); and
- Activity content within any single secondary inner "package" does not exceed a Type A quantity as LSA;

THEN

- Each secondary inner container is marked as a "package"
- The exterior of the outer enclosure is placarded as a vehicle

IF

- radiation level at 3' from any single inner container exceeds 1 rem/hr (See 173.393(j)(1); or
- Activity content within any single inner container exceeds a Type A quantity as LSA;

THEN

- The exterior of the outer enclosure is marked as a "package"
- The entire assembly must be certified by NRC as Type A, if LSA material is involved.

RECENTLY ISSUED
IE INFORMATION NOTICES

Information Notice No.	Subject	Date of Issue	Issued to
82-02	Westinghouse Nbfd Relay Failures in Reactor Protection Systems at Certain Nuclear Power Plants	01/27/82	All power reactor facilities holding an OL or CP
82-01	Auxiliary Feedwater Pump Lockout Resulting from Westinghouse W-2 Switch Circuit Modification	01/22/82	All power reactor facilities holding an OL or CP
81-39	EPA Crosscheck Program - Low Level Radioiodine in Water Test Program	12/23/81	All power reactor facilities holding an OL or CP
81-38	Potentially Significant Equipment Failures Resulting from Contamination of Air-Operated Systems	12/16/81	All power reactor facilities holding an OL or CP
81-37	Unnecessary Radiation Exposure to the Public and Workers During Events Involving Thickness and Level Measuring Devices	12/15/81	All power reactor facilities holding byproduct material licenses
81-36	Replacement Diaphragms for Robertshaw Valve (Model No. VC-210)	12/3/81	All power reactor facilities holding an OL or CP
81-35	Check Valve Failures	12/2/81	All power reactor facilities holding an OL or CP
81-34	Accidental Actuation of Prompt Public Notification System	11/16/81	All power reactor facilities holding an OL or CP

OL = Operating License

CP = Construction Permit

Recently issued IE Information Notice will be included when IN No. and issued date are assigned.