UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF FEDERAL AND STATE MATERIALS AND
ENVIRONMENTAL MANAGEMENT PROGRAMS
WASHINGTON, DC 20555-0001

April 5, 2007

NRC REGULATORY ISSUE SUMMARY 2007-07
CLARIFICATION OF INCREASED CONTROLS FOR LICENSEES THAT POSSESS COLLOCATED RADIOACTIVE MATERIAL DURING TRANSPORTATION ACTIVITIES

ADDRESSEES

All U.S. Nuclear Regulatory Commission (NRC) licensees issued NRC's Order Imposing Increased Controls and all Radiation Control Program Directors and State Liaison Officers.

INTENT

NRC is issuing this Regulatory Issue Summary (RIS) to clarify the issue of licensed material collocation in or on vehicles and trailers during domestic highway and rail transportation activities. This document does not transmit any new requirements or new staff positions. No specific action or written response is required.

BACKGROUND

On November 14, 2005, and December 22, 2005, the NRC issued Order (EA-05-90) for Increased Controls (IC). The IC apply to licensees who possess radioactive material quantities of concern as identified by Table 1 (Enclosure) of the Order. The footnotes of Table 1 indicate that the aggregate quantity (activity) of collocated sources be calculated for determining whether the IC must be implemented.

SUMMARY OF ISSUE

In order to achieve a consistent level of security of licensed material, the application of collocation varies for fixed facilities and domestic highway and rail transportation activities. Fixed facilities include permanent use or storage locations, field offices, and structures at temporary job sites. Transportation activities include the physical movement of licensed material during transport, as well as the storage of this material in or on vehicles and trailers.

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At fixed facilities, licensed material is considered collocated if breaching a common physical security barrier would allow access to radioactive material or devices containing the radioactive material. Regarding transportation activities, licensees have inquired whether the placement of additional physical barriers during transportation activities is acceptable to prevent licensed material from being collocated; and thus, avoid the need to implement all or some of the IC.

For purposes of transportation activities of radioactive material and devices containing the radioactive material, barriers may be used to meet the access and physical control requirements of IC 1 and IC 4. However, these barriers do not apply in preventing the collocation of radioactive material or devices to avoid an aggregated quantity which meets or exceeds the limits of Table 1 of the Order. For a physical barrier to be effective, the licensee must ensure that the barrier cannot be bypassed or easily defeated. As with any system, a barrier is only as strong as its weakest component. In most cases, the ability to render an immobilized vehicle or trailer mobile can become the weakest aspect of a system. Doing so can render even the most robust and complex physical barriers ineffective by eliminating their ability to provide delay. The ability to move a vehicle and/or trailer off-site may give an unauthorized individual unlimited time to breach associated barriers and gain access to the licensed materials, and evade apprehension by local law enforcement.

Therefore, radioactive material and devices containing the radioactive material are automatically considered collocated during transportation activities. This applies whether or not the vehicle and/or trailer have been immobilized, regardless of the position of radioactive material or devices in or on the vehicle and/or trailer, or number and configuration of physical barriers between them. Additionally, radioactive material and devices in or on separate vehicles and/or trailers, within close physical proximity at a site or location, are also considered to be collocated. Therefore, the unity sum of all radioactive material and devices in or on a vehicle and/or trailer must be considered in determining whether the aggregate quantity (activity) exceeds Table 1 values.

BACKFIT DISCUSSION

This RIS requires no action nor written response and is, therefore, not a backfit under 10 CFR §§ 70.76, 72.62, or 76.76. Consequently, the staff did not perform a backfit analysis.

***FEDERAL REGISTER* NOTIFICATION**

A notice of opportunity for public comment on this RIS was not published in the *Federal Register* because this RIS is informational, and does not represent a departure from current regulatory requirements.

CONGRESSIONAL REVIEW ACT

This RIS is not a rule as designated by the Congressional Review Act (5 U.S.C §§ 801-886) and therefore, is not subject to the Act.

PAPERWORK REDUCTION ACT STATEMENT

This RIS does not contain information collection requirements and, therefore, is not subject to the requirements of the Paperwork Reduction Act of 1995 (44 U.S.C 3501 et seq.).

CONTACT

This RIS requires no specific action or written response. If you have any questions about this summary, please contact one of the individuals listed below or the appropriate regional office.

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Enclosures:
1. Table 1 - Radionuclides of Concern
2. List of Recently Issued Generic Communications

Table 1. Radionuclides of Concern

Radionuclide	Quantity of Concern[1] (TBq)	Quantity of Concern[2] (Ci)
Am-241	0.6	16
Am-241/Be	0.6	16
Cf-252	0.2	5.4
Cm-244	0.5	14
Co-60	0.3	8.1
Cs-137	1	27
Gd-153	10	270
Ir-192	0.8	22
Pm-147	400	11,000
Pu-238	0.6	16
Pu-239/Be	0.6	16
Se-75	2	54
Sr-90 (Y-90)	10	270
Tm-170	200	5,400
Yb-169	3	81
Combinations of radioactive materials listed above[3]		

Footnotes

1 The aggregate activity of multiple, collocated sources of the same radionuclide should be included when the total activity equals or exceeds the quantity of concern.

2 The primary values used for compliance with this Order are TBq. The curie (Ci) values are rounded to two significant figures for informational purposes only.

3 Radioactive materials are to be considered aggregated or collocated if breaching a common physical security barrier (e.g., a locked door at the entrance to a storage room) would allow access to the radioactive material or devices containing the radioactive material.

4 If several radionuclides are aggregated, the sum of the ratios of the activity of each source, *i* of radionuclide, *n*, $\mathbf{A}_{(i,n)}$, to the quantity of concern for radionuclide *n*, $\mathbf{Q}_{(n)}$, listed for that radionuclide equals or exceeds one. [(aggregated source activity for radionuclide A) ÷ (quantity of concern for radionuclide A)] + [(aggregated source activity for radionuclide B) ÷ (quantity of concern for radionuclide B)] + etc..... >1

Recently Issued FSME/NMSS Generic Communications

Date	GC No.	Subject	Addressees
02/02/07	IN-07-03	Reportable Medical Events Involving Patients Receiving Dosages of Sodium Iodide Iodine-131 less than the Prescribed Dosage Because of Capsules Remaining in Vials after Administration	All U.S. Nuclear Regulatory Commission (NRC) medical use licensees and NRC Master Materials Licensees. All Agreement State Radiation Control Program Directors and State Liaison Officers.
02/28/07	IN-07-08	Potential Vulnerabilities of Time-reliant Computer-based Systems Due to Change in Daylight Saving Time Dates	All NRC licensees and all Agreement State Radiation Control Program Directors and State Liaison Officers.
03/15/07	IN-07-10	Yttrium-90 Theraspheres® and Sirspheres® Impurities	All NRC Medical Licensees and NRC Master Materials Licensees. All Agreement State Radiation Control Program Directors and State Liaison Officers.
03/01/07	RIS-07-03	Ionizing Radiation Warning Symbol	All NRC licensees and certificate holders. All Radiation Control Program Directors and State Liaison Officers.
03/09/07	RIS-07-04	Personally Identifiable Information Submitted to the U.S. Nuclear Regulatory Commission	All holders of operating licenses for nuclear power reactors and holders of and applicants for certificates for reactor designs. All licensees, certificate holders, applicants, and other entities subject to regulation by the NRC of the use of source, byproduct, and special nuclear material.

Note: NRC generic communications may be found on the NRC public website at http://www.nrc.gov, under Electronic Reading Room/Document Collections.