

**SBMS**    [Forms](#)    [Contact List](#)    [ES&H Instructions](#)    [Help Desk](#)

**Find Subject Areas:**    Index    Categories    Alpha

**Show Side Menu**    Search Subject Areas & Legacy Documents:

Subject Area: **Transfer of Radioactive Materials Onsite**

**Contents: Transfer of Radioactive Materials Onsite**

Effective Date: **June 2001**

Point of Contact: [Transportation Safety Officer](#)

Section	Overview of Content (see section for full process)
<a href="#">Introduction</a> <a href="#">1. Packaging and Transferring Radioactive Material Onsite</a>	<ul style="list-style-type: none"> <li>• Transfer and package material in compliance with Laboratory and regulatory requirements.</li> <li>• Determine if material's specific activity is &gt;70 Bq/g (2 nCi/g).</li> </ul>
<a href="#">Definitions</a>	
<b>Exhibits</b> <a href="#">Transfer of Radioactive Material Onsite Flowchart</a>	
<b>Forms</b> None	

## Training Requirements and Reporting Obligations

This subject area does not contain training requirements.

This subject area may or may not contain reporting obligations. See the subject area until obligations are listed here.

## References

10 CFR 835 Appendix E

49 CFR 173.421, Excepted Packages for Limited Quantities of Class 7 (Radioactive) Materials

49 CFR 173.425, Table of Activity Limits Excepted Quantities and Articles

[ES&H Standard 1.3.6, Work Planning and Control for Operations](#)

[Hazardous Material Transportation Manual](#) Program Description

[Hazardous Material Transportation Safety](#) Management System Description

[Hazardous Waste Management](#) Subject Area

[Radiological Control Manual](#) Program Description

[Release of Materials from Controlled Radiological Areas](#) Subject Area

[Transfer of Hazardous Materials Onsite](#) Subject Area

## Standards of Performance

Managers shall manage work to control risks and hazards, ensure customer satisfaction, and provide a benefit to BNL.

Managers shall analyze work for hazards, authorize work to proceed, and ensure that work is performed within established controls.

All staff and users shall identify, evaluate, and control hazards in order to ensure that work is conducted safely and in a manner that protects the environment and the public.

Managers shall ensure that work is planned to prevent pollution, minimize waste, and conserve resources, and that work is conducted in a cost-effective manner that eliminates or minimizes environmental impact.

All staff and users shall ensure that they are trained and qualified to carry out their assigned responsibilities, and inform their supervisor if they are assigned to perform work for which they are not properly trained or qualified.

All staff and guests shall promptly report accidents, injuries, ES&H deficiencies, emergencies, and off-normal events in accordance with procedures.

Managers shall establish, implement, and track appropriate actions to correct weaknesses in performance and areas for improvement.

## Management System

This subject area belongs to the management system.

[Back to Top](#)

**The only official copy of this file is the one online in SBMS. Before using a printed copy, verify that it is the most current version by checking the document effective date on the BNL SBMS website.**

1.0-062001-/standard/2z/2z00t011.htm

Send a question or comment to the [SBMS Help Desk](#)  
[Disclaimer](#)



Forms    Contact List    SBMS Instructions    Help Desk

Find Subject Areas:    Index    Categories    Alpha

Show Side Menu    Search Subject Areas & Legacy Documents:

Subject Area: **Transfer of Radioactive Materials Onsite**

### Introduction: Transfer of Radioactive Materials Onsite

Effective Date: **June 2001**

Point of Contact: [Transportation Safety Officer](#)

This subject area covers the step-by-step process that BNL staff and non-BNL staff must follow to package and transfer radioactive materials between BNL facilities onsite, except for materials transferred by staff in the Isotopes & Special Material Group, Procurement and Property Management Division (Traffic Office), and Waste Management Division. These divisions have specific Standard Operating Procedures (SOPs) to control the packaging and transferring of radioactive materials. This subject area is designed to ensure that all radioactive material required to be transferred onsite will be properly packaged, labeled, and handled to ensure the safety of the staff and in compliance with appropriate regulations as defined in the [Hazardous Material Transportation Manual](#) Program Description.

Refer to the [Transfer of Radioactive Material Onsite Flowchart](#) for an overview of the procedures described in this subject area. See the [Hazardous Material Transportation Safety](#) Management System Description for an overview of the Transportation Safety Program.

**The only official copy of this file is the one online in SBMS. Before using a printed copy, verify that it is the most current version by checking the document effective date on the BNL SBMS website.**

1.0-062001/standard/2z/2z00i011.htm

Send a question or comment to the [SBMS Help Desk](#)  
[Disclaimer](#)



Forms
Contact List
SBMS Instructions
Help Desk

**Find Subject Areas:**  Categories

**Show Side Menu** Search Subject Areas & Legacy Documents:

Subject Area: **Transfer of Radioactive Materials Onsite**

## 1. Packaging and Transferring Radioactive Material Onsite

Effective Date: **June 2001**

Point of Contact: [Transportation Safety Officer](#)

## Applicability

This information applies to BNL staff and non-BNL staff who package and transfer radioactive material between BNL facilities onsite in a Laboratory vehicle. It does not apply to materials transferred by staff in the Isotopes & Special Material Group, Procurement and Property Management Division (Traffic Office), and Waste Management Division. These divisions have specific Standard Operating Procedures (SOPs) to control the packaging and transferring of radioactive material.

## Required Procedure

This subject area is designed to ensure that all radioactive material that is required to be transferred onsite will be properly packaged, labeled, and handled to ensure the safety of the staff and in compliance with appropriate regulations.

BNL staff and non-BNL staff transferring radioactive material follow the steps below.

<b>Step 1</b>	<p>Work with the <a href="#">Transportation Safety Subject Matter Expert (SME)</a> (if needed) to package and transfer radioactive material using one of the following methods when the material is being transferred by a motorized vehicle.</p> <ul style="list-style-type: none"> <li>• Compliance with DOT regulations (go to the <a href="#">Transportation of Radioactive Materials Offsite Subject Area</a>) or</li> <li>• Compliance with the BNL <a href="#">Hazardous Material Transportation Manual (HMTM)</a> Program Description</li> </ul> <p><b>Note:</b> Following this subject area ensures compliance with the HMTM Program Description).</p> <p><b>Note:</b> If you plan to hand-carry the radioactive material, contact a <a href="#">Facility Support Representative</a>.</p> <p><b>Note:</b> You have the option to call the Isotopes &amp; Special Material Group (I&amp;SM) to package and transfer the radioactive material for you.</p> <p><b>Note:</b> If the material is accountable nuclear and/or fissile, contact I&amp;SM. <b>Do not proceed further.</b></p>
<b>Step 2</b>	<p>With the assistance of a Facility Support Representative or technician, determine if the material's specific activity &gt;70 Bq/g (2 nCi/g), or is considered limited quantity (contact the Transportation Safety SME or I&amp;SM to assist in the determination of limited quantity).</p>
<b>Step 3</b>	<p>If the material's specific activity is &lt;=70 Bq/g (2 nCi/g), or is considered limited quantity, contact your Facility Support Representative or technician, who will follow the BNL <a href="#">Radiological Control</a></p>

	<a href="#">Manual</a> Program Description for transfer of this material.
<b>Step 4</b>	If the material's specific activity >70 Bq/g (2 nCi/g), or is not considered limited quantity, follow the remaining steps of this subject area.
<b>Step 5</b>	<p>Radioactive material &gt;70 Bq/g (2 nCi/g) may be transferred under the supervision of a Facility Support Representative or technician, using the established Facility Support Services' procedures ( e.g., Radiological Work Permit, <a href="#">ES&amp;H Standard 1.3.6, Work Planning and Control for Operations</a>, <a href="#">Release of Materials from Controlled Radiological Areas</a> Subject Area) provided all the following criteria are met:</p> <ul style="list-style-type: none"> <li>• Dose rate is &lt;100 mrem/hr on contact;</li> <li>• Activity does not exceed the dispersible limits established in Appendix E of 10 CFR 835;</li> <li>• No smearable contamination on the outside of the package greater than the release criteria;</li> <li>• The material is not accountable nuclear and/or fissile.</li> </ul> <p>If the material &gt;70 Bq/g (2 nCi/g) and any of the above criteria, it must go through a Safety Assessment.</p>
<b>Step 6</b>	If material has been previously evaluated and there are no significant changes (within the bounds evaluated), package and transfer it using the <a href="#">BNL On-site Transfer/Safety Assessment Form</a> exhibit in the <a href="#">Transfer of Hazardous Materials Onsite</a> Subject Area. This material would then qualify as a repetitive transfer. If the material is listed as a moderate to high hazard transfer, a copy of the form (with new transfer date) must accompany the material and be located in the transfer vehicle as identified on the form. If the material is a low hazard, only the Radioactive Label/Tag is necessary. Go to step 8.
<b>Step 7</b>	If material has not been previously evaluated, complete the BNL On-site Transfer/Safety Assessment Form in the Transfer of Hazardous Materials Onsite Subject Area. For guidance regarding the completion of this form, read Chapter 5 of the HMTM Program Description and notify a Transportation Safety SME.
<b>Step 8</b>	<p>When packaging radioactive materials, make sure that the following conditions are met:</p> <ul style="list-style-type: none"> <li>• Incompatible materials are not contained in the same outer packaging (See the exhibit on <a href="#">Incompatible Chemicals</a> in the <a href="#">Hazardous Waste Management</a> Subject Area).</li> <li>• Packaging is leak-tight, securely closed, secured against movement in the vehicle, and protected against damage.</li> <li>• Packaging is as good as manufacturer's original packaging, or receptacles are secured against movement inside cages, bins, boxes, or compartments.</li> </ul> <p><b>Note:</b> In some conditions, due to the configuration and type of material, no additional packaging may be necessary. The material itself may serve as the package ( e.g., certain magnets, piping materials), if the material meets the criteria of bulk packaging.</p> <ul style="list-style-type: none"> <li>• No smearable contamination on the outside of the package.</li> <li>• Affix a properly filled out Radioactive Label/Tag.</li> <li>• Dose rate from the outer lateral surfaces or vertically projected planes of the transfer vehicle (excluding top and bottom) is not greater than 5 mrem/hr.</li> <li>• All packaging and transfers should be done while trying to keep the dose to the workers and/or public As Low as Reasonably Achievable (ALARA).</li> </ul> <p><b>Note:</b> Contact a Transportation Safety SME for assistance with packaging if necessary.</p>
<b>Step 9</b>	<p>Transfer material according to the requirements on the BNL On-site Transfer/Safety Assessment Form in the Transfer of Hazardous Materials Onsite Subject Area.</p> <p>Transferring radioactive materials in personal vehicles is normally prohibited. Under certain extenuating circumstances, such as an emergency, or unavailability of a government vehicle, permission may be granted by your Facility Support Representative to use a private vehicle.</p>

**Note:** If there are any injuries/spills of this material during transfer, call 911 or 2222 and follow the [Spill Response](#) Subject Area.

**Note:** The most expedient route should be utilized for radioactive material transfers, with no unnecessary stopovers.

## References

[ES&H Standard 1.3.6, Work Planning and Control for Operations](#)

[Hazardous Material Transportation Manual](#) Program Description

[Hazardous Waste Management](#) Subject Area

[Radiological Control Manual](#) Program Description

[Release of Materials from Controlled Radiological Areas](#) Subject Area

[Transfer of Hazardous Materials Onsite](#) Subject Area

[Transportation of Radioactive Materials Offsite](#) Subject Area

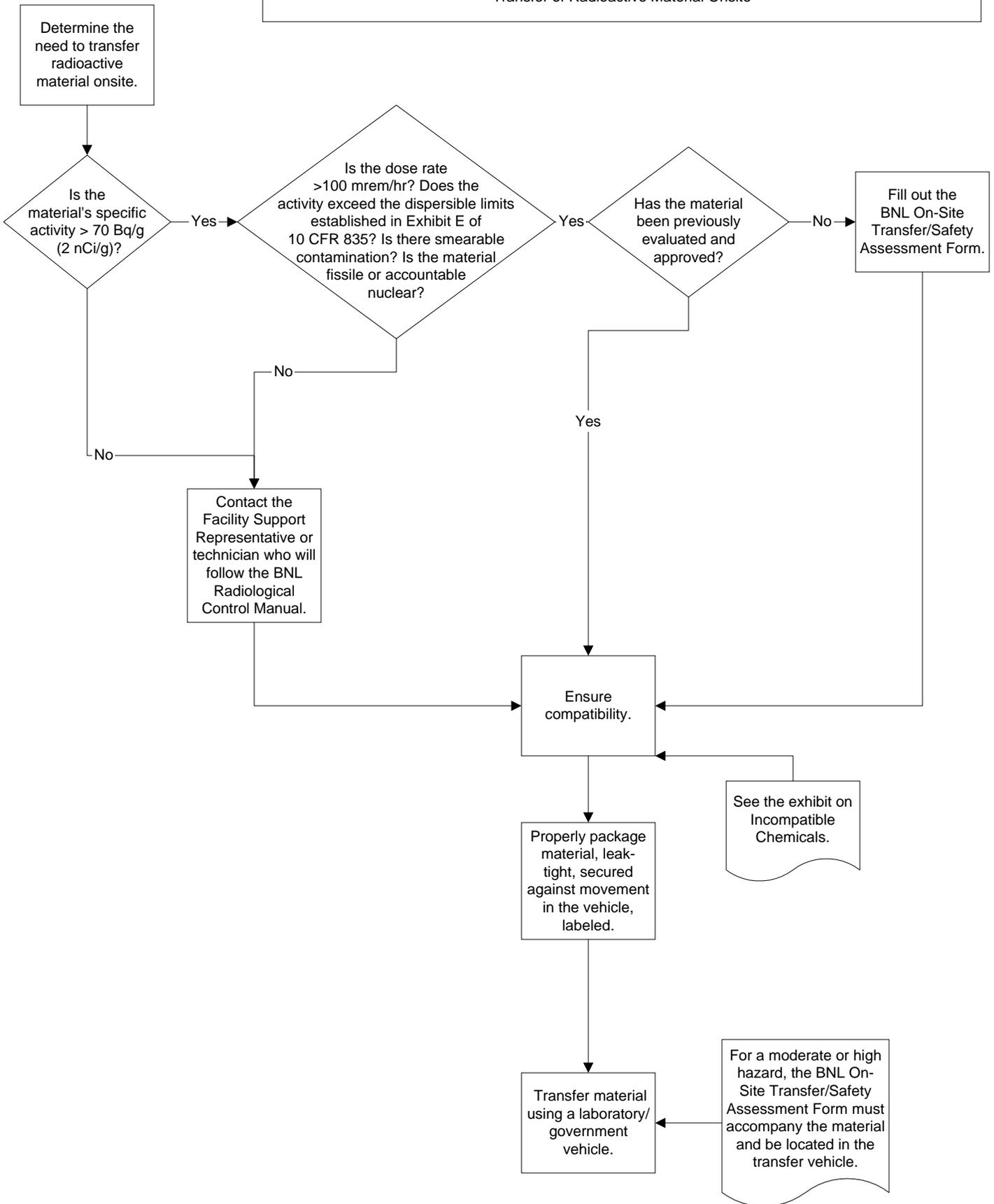
[Spill Response](#) Subject Area

**The only official copy of this file is the one online in SBMS. Before using a printed copy, verify that it is the most current version by checking the document effective date on the BNL SBMS website.**

1.0-062001/standard/2z/2z01d011.htm

Send a question or comment to the [SBMS Help Desk](#)  
[Disclaimer](#)

Transfer of Radioactive Material Onsite





Forms
Contact List
SBMS Instructions
Help Desk

**Find Subject Areas:**  Categories

**Show Side Menu**      **Search Subject Areas & Legacy Documents:**

Subject Area: **Transfer of Radioactive Materials Onsite**

**Definitions: Transfer of Radioactive Materials Onsite**

Effective Date: **June 2001**

Point of Contact: [Transportation Safety Officer](#)

Term	Definition
accountable nuclear material	Depleted uranium, enriched uranium, americium-241, americium-243, curium, berkelium, californium-252, plutonium-238, plutonium-239, plutonium-240, plutonium-241, plutonium-242, lithium-6, uranium-233, normal (i.e., natural) uranium, neptunium-237, deuterium, tritium, and thorium.
bulk packaging	Packaging including a transport vehicle or freight container, in which hazardous material is loaded with no intermediate form of containment and which has: (1) A maximum capacity greater than 450 liters (119 gallons) as a receptacle for liquid; (2) A maximum net mass greater than 400 kg (882 pounds) and a maximum capacity greater than 450 liters (119 gallons) as a receptacle for a solid; or (3) A water capacity greater than 454 kg (1000 pounds) as a receptacle for a gas.
fissile material	Plutonium-238, plutonium-239, plutonium-241, uranium-233, uranium-235, or any combination of these radionuclides. It does not apply to unirradiated natural uranium and depleted uranium, and natural uranium or depleted uranium that has been irradiated in a thermal reactor.
high hazard	Material that, if containment is lost, has been determined to pose an extreme danger or health hazard to the emergency response personnel (e.g., regulatory limits could be exceeded), and significant damage to the environment or equipment will result.
limited quantity	A radioactive material not exceeding the limits specified in 49 CFR 173.425 and conforming with the requirements specified in 49 CFR 173.421.
low hazard	Material that, if containment is lost (e.g., the package breaks), has been determined to pose little danger or health hazard to emergency response personnel, and little or no damage to the environment or equipment will result.
medium hazard	Material that, if containment is lost, has been determined to pose a moderate danger or health hazard to the emergency response personnel (e.g., no regulatory exposure limit would be exceeded for radiological or chemical controls), and moderate damage to the environment or equipment will result.
on-site transfer	Transfer of radiological material between facilities using motorized transport within the confines of the BNL-site boundary.
packaging	For radioactive material, the assembly of components necessary to ensure compliance with this subject area. It may consist of one or more receptacles, absorbent materials, spacing structures, thermal insulation, radiation shielding, service equipment for filling, emptying, venting and pressure relief, and devices for cooling or absorbing mechanical shock. The conveyance, tie-down system, and auxiliary equipment may sometimes be designated as part of the packaging.

radioactive material	Radioactive material is defined in 49 CFR 173.403 as any material having a specific activity >70 Bq/g (2 nCi/g).
repetitive transfers	Hazardous material that is routinely transferred in similar quantity under the same conditions. Staff transferring hazardous material that has undergone a Safety Assessments Methodology (SAM) process would not need to repeat the SAM each time a similar transfer is made.
specific activity	Specific activity of a radionuclide means the activity of the radionuclide per unit mass of that radionuclide. The specific activity of a material in which the radionuclide is essentially uniformly distributed is the activity per unit mass of the material.

[Back to Top](#)

**The only official copy of this file is the one online in SBMS. Before using a printed copy, verify that it is the most current version by checking the document effective date on the BNL SBMS website.**

1.0-062001/standard/2z/2z00I011.htm

Send a question or comment to the [SBMS Help Desk](#)  
[Disclaimer](#)



Forms
Contact List
SBMS Instructions
Help Desk

**Find Subject Areas:**  Categories

**Show Side Menu** Search Subject Areas & Legacy Documents:

Subject Area: **Transfer of Radioactive Materials Onsite**

Revision History: Transfer of Radioactive Materials Onsite

Point of Contact: [Transportation Safety Officer](#)

## Revision History of this Subject Area

Date	Description	Management System
June 2001	This new subject area describes the procedures and guidelines for ensuring that all radioactive material transferred onsite between BNL facilities is properly packaged, labeled, and handled to ensure the safety of the staff, and is in compliance with the appropriate regulations as defined in the Hazardous Material Transportation Manual Program Description. The Facility Support Group must be contacted for all transfers of radiological material to assure compliance with the Radiological Control Manual, Hazardous Material Transportation Manual and other internal procedures.	Hazardous Material Transportation Safety

**The only official copy of this file is the one online in SBMS. Before using a printed copy, verify that it is the most current version by checking the document effective date on the BNL SBMS website.**

1.0-062001/standard/2z/2z00a011.htm

Send a question or comment to the [SBMS Help Desk](#)  
[Disclaimer](#)