SUBJECT AREA CONTENT

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Management System: Hazardous Material Transportation Safety

Subject Area: Transportation of Hazardous and Radiological Materials Off-site

VIEW/PRINT ALL (No Exhibits and Forms)

Effective Date: **May 17, 2017** (Rev 3.4) Periodic Review Due: **May 17, 2020**	Subject Matter Expert: Michael Clancy Jr	Management System Executive: Jason Remien	Management System Steward: Gail Mattson

Introduction

The shipment of materials and waste regulated by the U.S. Department of Transportation as Hazardous Material (HAZMAT) off the Brookhaven site is limited to three groups at BNL. This subject area covers the step-by-step process that BNL staff and non-BNL staff must follow to allow hazardous and radiological materials (HAZMAT) to off-site locations and from off-site locations to BNL. Shipment of hazmat off-site must adhere to regulatory and commercial requirements, such as the International Air Transport Association (IATA) and Department of Transportation (DOT) regulations.

This subject area is divided into four areas: Materials of Trade; HAZMAT (chemical/biological non-radioactive, non-waste); Radioactive Material (non-waste); Waste (Hazardous and Radioactive).

All hazmat (non-radioactive/chemical) shipments not designated as Materials of Trade (MOT), Hazardous Waste, or regulated Medical Waste for off-site must go through the Procurement and Property Management Division (Traffic Office), and all non-waste radiological material in excess of the DOT definition of radiological material must go through the Radiological Control Division (Packaging and Transportation Group) to ensure that the shipment is made in compliance with all applicable regulations. All Hazardous and radioactive waste for off-site shipment must go through the Environmental Protection Division. All material shipped as a MOT must be evaluated by a Transportation SME before shipping. Radiological material less than the DOT definition of radiological material is not governed by this subject area; however, contact your Facility Support Representative to determine adequate radiological controls. Regulatory violations can and will result in civil and/or criminal penalties against the Laboratory and/or the individual who improperly ships the material.

Refer to SOP 460.1, Shipment of Material in the Procurement & Property Management Group S.O.P. Manual for BNL general shipping requirements.

Refer to the Transportation of Hazardous Material Off-site Flowchart or the Transportation of Radioactive Materials Off-site 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.

This subject area does not apply to

- On-site transportation activities (See the Movement by Vehicle of Hazardous and Radiological Materials On-Site Subject Area).
- Materials shipped by staff in the Environmental Protection Division Packaging and Transportation Group, Waste Management Group or Procurement and Property Management Division Distribution, Shipping and Receiving.

Contents

Section	Overview of Content (see section for full process)
1. Packaging and Shipping Materials of Trade (MOT)	• Package and ship MOT in compliance with Laboratory and regulatory requirements. • Ensure that chemical containers are inventoried and bar coded.
2. Off-site Packaging and Shipping Hazardous Material (Non-radioactive, Non-waste) to or from BNL	• Determine if chemical container is bar coded with CMS label. • Complete a DOE BNL Shipping Memo. • Ensure the material created at BNL has an MSDS. • Prepare the material for pickup and delivery to Shipping.
3. Off-site Packaging and Shipping Radioactive Materials (Non-waste) from or to BNL	• Determine if material meets the DOT definition of radiological material. • Determine who will provide DOT Certification. • Follow requirements of one of four scenarios on DOT Certification.
4. Off-site Packaging and Shipping Hazardous and/or Radioactive Waste from or to BNL	• Refer to the appropriate waste subject area to properly manage your waste stream. • Contact your ECR, WMR, or the EPD's WMG for assistance.

5. Communication and Outreach for Radioactive Waste Shipment	• All rad waste shipments go through EPD's WMG. • Use the Radioactive Waste Management Subject Area to properly handle radioactive waste. • Issue biannual schedule of planned shipments to the BNL Emergency Planning Office. • Distribute schedule to an approved set of stakeholders. • Prepare fact sheet for waste being shipped. • Notify BNL Emergency Planning Office of upcoming shipments. • For high-visibility shipments, the TSO must develop a transportation plan and submit it to BHSO for approval. • For all shipments, WMG issues an electronic notification to BNL stakeholders and BHSO that shipment departed BNL. • For Type B shipments, the WMG sends an electronic notification to the New York State Warning Points.

Definitions

Exhibits

BNL Materials of Trade (MOT) Table
DOT Materials of Trade (MOT) Hazard Classes
Transportation of Hazardous Material Off-site Flowchart
Transportation of Radioactive Materials Off-site Flowchart

Forms

P&TG PTP 002 Form

Training Requirements and Reporting Obligations

This subject area contains the following training requirements (see the BNL Training and Qualifications website):

- **JTA-WM-28-Truck Loading/Off-Loading (Non-Load Securement)**
  - JTA-GE-70D (Haz Mat Transport - DOT Haz Mat Employee) **Requalification - 3 years**
  - This JTA is for the employee that has some Haz Mat involvement, but their function is limited to ancillary activities of shipping i.e. forklift operator for loading or unloading a truck.
- **JTA-WM-29-Truck Loading with Load Securement**
  - JTA-GE-70D (Haz Mat Transport - DOT Haz Mat Employee)
  - TQ Cargo Securement **Requalification - 3 years**
  - This JTA is for the employee that loads or unloads Haz Mat onto a vehicle, and is responsible for planning and performing load sercurement.

- **JTA-WM-30-Driver Off-Site with Haz Mat Endorsement**
  - JTA-GE-70D (Haz Mat Transpor t- DOT Haz Mat Employee)
  - CDL (NYS issued) with Haz Mat Endorsement **Requalification - see NYS Law**
  - This JTA is for the employee that will drive Haz Mat to or from the BNL.
- **JTA-WM-31-RadCon Technician Radioactive Shipments**
  - JTA-GE-70D (Haz Mat Transport - DOT Haz Mat Employee)
  - RCT- JTA- RP-01
  - This JTA is for RacCon Technicians to perform contamination and radiation surveys, which are activities that effect the safety of a shipment.
- **JTA-WM-32 HAZ MAT Determinations (Non-Radioactive)**
  - JTA-GE-70D (Haz Mat Transport - DOT Haz Mat Employee)
  - DOE Modular Training (Basic)
  - DOE Advanced Hazardous Material **Requalification - 3 years**
  - This JTA is for an employee to evaluate information about material, such as MSDS, analytical reports, and other information supplied by the shipping requester to determine if the material must be shipped as a Haz Mat (non-radioactive).
- **JTA-WM-32A-HAZ MAT Shipper (Non-Radioactive) Qualified**
  - TQ-TSO-MEMO- BNL TSO Approval Memo
- **JTA- WM-33-HAZ MAT Determinations (Radioactive)**
  - JTA-GE-70D (Haz Mat Transport - DOT Haz Mat Employee)
  - DOE Modular Training (Basic)
  - DOE Advanced Radioactive or Mixed Waste **Requalification - 3 years**
  - This JTA is for an employee to evaluate information about material, such as contamination surveys, analytical reports, and other information supplied by the shipping requester to determine if the material must be shipped as a Haz Mat (radioactive).
- **JTA- WM-33A-HAZ MAT Shipper (Radioactive) Qualified**
  - TQ-TSO-MEMO- BNL TSO Approval Memo
- **JTA- WM-34-HAZ MAT Shipper (Air)**
  - JTA-GE-70D (Haz Mat Transport - DOT Haz Mat Employee)
  - DOE Modular Training
  - DOE Advanced Hazardous Material **Requalification - 3 years**
  - DOE IATA Training **Requalification - 2 years**
  - This JTA is for an employee to evaluate information about material, such as MSDS, analytical reports, and other information supplied by the shipping requester to determine if the material must be shipped as a Haz Mat (non-radioactive/radioactive) and can be shipped by air. Based on experience and written approval by the Transportation Safety Officer, this employee may sign air transportation documents for BNL.
- **JTA- WM-34A-HAZ MAT Shipper (Air)**
  - TQ-TSO-MEMO- BNL TSO Approval Memo
- **JTA- WM-35-Special Permits**
  - JTA-GE-70D (Haz Mat Transport - DOT Haz Mat Employee)
  - DOE Modular Training (Basic)
  - DOE Advanced Hazardous, Radioactive or Mixed Waste **Requalification - 3 years**
  - Specific Special Permit training **Requalification - 3 years**
  - This training is for employees who prepare for shipping and ship hazardous material under specific special permits issued by the Department of Transportation or other Competent Authorities.

This subject area does not contain reporting obligations.

External/Internal Requirements

Requirement Number	Requirement Title
10 CFR 71	Packaging and Transportation of Radioactive Material
49 CFR 107	Transportation/Hazardous Materials Program Procedures
49 CFR 171	Transportation/General Information, Regulations, and Definitions
49 CFR 172	Transportation/Hazardous Materials Regulations/ Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements
49 CFR 173	Transportation/Shippers - General Requirements for Shipments and Packagings
49 CFR 174	Transportation/Carriage by Rail
49 CFR 175	Transportation/Carriage by Aircraft
49 CFR 176	Transportation/Carriage by Vessel
49 CFR 177	Transportation/Carriage by Public Highway
49 CFR 178	Transportation/Specifications for Packagings
49 CFR 179	Transportation/Specifications for Tank Cars
49 CFR 180	Transportation/Continuing Qualification and Maintenance of Packagings
49 CFR 383	Transportation/Commercial Drivers License Standards; Requirements and Penalties
49 CFR 390	Transportation/Federal Motor Carrier Safety Regulations; General
49 CFR 391	Transportation/Qualifications of Drivers
49 CFR 392	Transportation/Driving of Commercial Motor Vehicles
49 CFR 393	Transportation/Parts and Accessories Necessary for Safe Operation
49 CFR 395	Transportation/Hours of Service of Drivers
49 CFR 396	Transportation/Inspection, Repair, and Maintenance

49 CFR 397	Transportation/Transportation of Hazardous Materials; Driving and Parking Rules
IATA Dangerous Goods Regulations	Dangerous Goods Regulations (from the International Air Transport Association)
ICAO Technical Standards for Safe Transport of Dangerous Good By Air	Technical Standards for Safe Transport of Dangerous Good By Air (from the International Civil Aviation Organization)
IMO/IMDG	International Maritime Organization/International Maritime Dangerous Goods Code
M 460.2-1A	Radioactive Material Transportation Practices Manual
O 151.1D (Aug 11, 2016)	Comprehensive Emergency Management System
O 435.1 Change 1	CRD - Radioactive Waste Management
O 460.1D (Dec 20, 2016)	Hazardous Materials Packaging and Transportation Safety
O 460.2A	Departmental Materials Transportation and Packaging Management

References

49 CFR 172.101, Hazardous Materials Table

49 CFR173.6, Materials of Trade

BNL Training and Qualifications Website

Chemical Management System Bar-Code Label Removal Sheet

Explosives Safety Subject Area

Hazardous Material Transportation Manual Program Description

Hazardous Material Transportation Safety Management System Description

How to Transport Infectious Substances

Movement by Vehicle of Hazardous and Radiological Materials On-Site Subject Area

Procurement & Property Management Group S.O.P. Manual

Radiological Control Manual

Government Vehicles Subject Area

PeopleSoft Financials

Waste Subject Area

What Are Materials of Trade, and What Regulations Apply?

Work Planning and Control for Experiments and Operations 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.

PROCEDURE: PACKAGING AND SHIPPING MATERIALS OF TRADE (MOT)

Management System: Hazardous Material Transportation Safety		
Subject Area: Transportation of Hazardous and Radiological Materials Off-site		
1. Packaging and Shipping Materials of Trade (MOT)		
Effective Date: **May 17, 2017**	Subject Matter Expert: Michael Clancy Jr	Management System Executive: Jason Remien

Applicability

This information applies to BNL Organizations, employees, and/or subcontractors involved in any type of off-site packaging or transportation activity. In addition to off-site transportation activities performed by personnel at the BNL site, this procedure applies to

- BNL staff and non-BNL staff who package and ship Materials of Trade (MOT) from BNL to an off-site location, and from an off-site location to BNL.
  - Under Guest User Agreements;
  - By Contractors or Subcontractors;
  - As Work for Others;
  - In the field;
  - At BNL facilities located at other DOE sites;
  - While on company travel;
  - By guests transporting BNL-owned material;
  - By guests using BNL-owned vehicles to transport hazardous materials.

Required Procedure

Certain hazardous materials, when used in direct support of Brookhaven's business, may be transferred in a motor vehicle from one location to another by a staff member for his or her own use as "Materials of Trade," i.e., hazardous chemicals or other hazardous material which will be consumed by staff member's work. The regulations for transporting MOT are based on a quantity limit for specific Department of Transportation hazard classes. See the DOT Materials of Trade (MOT) Hazard Classes exhibit. Shipping of Class 6.2 infectious substances is very restrictive and in certain cases may qualify as a MOT. See How to Transport Infectious Substances for further information. For those materials that are intended to be shipped as DOT materials of trade (MOT), a Transportation Safety Department/Division Point of Contact (POC) or the Transportation Safety Officer (TSO) must be consulted to verify that the shipment meets all requirements.

Note: There are no MOT exclusions for transport of materials on aircraft.
Class 4.1 (self reacting) cannot be shipped as MOT
Class 6.1 (Poisonous by inhalation) cannot be shipped as MOT.
Class 7 (Radiological Material) cannot be shipped as a MOT.
Class 6.2 (Infectious Material) in most cases cannot be shipped as a MOT.
Class 7, 4.1, 6.1, and in most cases 6.2 materials cannot be shipped as MOT because they do not qualify as MOT as per DOT regulation

BNL staff and non-BNL staff packaging and shipping MOT to and from BNL follow the steps below.

Step 1	When packaging MOT, ensure that the following conditions are met: • Incompatible chemicals are not contained in the same outer packaging (See the exhibit on Examples of Incompatible Chemicals in theHazardous Waste in the Waste Subject Area). • Packaging is leak-tight, securely closed, secured against movement, and protected against damage. • Each material must be packaged in the manufacturer's original packaging, or a packaging of equal or greater strength and integrity. • Outer packagings are not required for receptacles (e.g., cans and bottles) that are secured against shifting in cages, carts, bins, boxes or compartments. • Outer packaging or receptacles are marked with the common name of the hazardous material. Outer packagings are not required for receptacles that are secured against movement in carts, bins, or compartments. • Compressed gas cylinders must have proper DOT markings (DOT cylinder type, inspection date, operating pressure and manufacturer's identification stamp) and be less than 220 lbs. • Manifolding of cylinders is allowed if valves are tightly closed. • If material is Class 9 (hazardous material), contact the Transportation Safety Officer (TSO). • Aggregate gross weight of all MOTs on a motor vehicle must not exceed 440 lbs. • A BNL vehicle is used whenever possible to transfer MOT associated with work at BNL. The driver of a BNL vehicle must follow the Government Vehicles Subject Area, and ◦ The driver must possess basic hazard information on the commodity being transported (e.g., Material Safety Data Sheet); ◦ The driver must read and possess a copy of the DOT Brochure (see What Are Materials of Trade, and What Regulations Apply?). If a private vehicle must be used, the Department/Division must communicate to the driver the following requirements: • The driver must have a valid state driver's license appropriate for the vehicle being operated; • The vehicle must be in good mechanical condition and have a valid state safety inspection; • The vehicle must be insured with at least the required minimum liability insurance required by the state where the vehicle is registered; • The driver must obey all state and local traffic rules and regulations;

	• The driver must possess basic hazard information on the commodity being transported (e.g., Material Safety Data Sheet); • The driver must read and possess a copy of the DOT Brochure (see What Are Materials of Trade, and What Regulations Apply?); • Reportable Quantity (RQ) must be marked on the package, if required. Contact a Transportation Safety Subject Matter Expert for assistance in determining if your package needs an RQ. **Note:** Contact a Transportation Safety Subject Matter Expert for assistance in preparing MOTs.
Step 2	**For material of trade leaving site.** Determine if the chemical container is bar coded with a Chemical Management System (CMS) label. If the chemical container has a CMS bar code label and you are shipping it offsite, remove the bar code label, place it on a Chemical Management System Bar-Code Label Removal Sheet, circle the *SARA Environmental Code # 2-Sent off-site*, and send the form to the CMS Team, Building 129. **Note:** If the material will not be entirely consumed and returned to BNL within a matter of days, the CMS label may be left on the container.
Step 3	**For material of trade entering site.** If you bring manufacturer-labeled chemical containers onsite by any method other than by standard acquisition (i.e., through Web Req), notify the CMS Team to have your chemical containers inventoried and bar coded for inclusion in the Chemical Management System.

References

49 CFR173.6, Materials of Trade

Chemical Management System Bar-Code Label Removal Sheet

How to Transport Infectious Substances

Government Vehicles Subject Area

Waste Subject Area

What Are Materials of Trade, and What Regulations Apply?

https://sbms.bnl.gov/sbmsearch/subjarea/45/45_pro1.cfm

PROCEDURE: OFF-SITE PACKAGING AND SHIPPING HAZARDOUS MATERIAL (NON-RADIOACTIVE, NON-WASTE) TO OR FROM BNL

Management System: Hazardous Material Transportation Safety
Subject Area: Transportation of Hazardous and Radiological Materials Off-site
2. Off-site Packaging and Shipping Hazardous Material (Non-radioactive, Non-waste) to or from BNL

Effective Date: **May 17, 2017**	Subject Matter Expert: Michael Clancy Jr	Management System Executive: Jason Remien

Applicability

This information applies to BNL organizations, employees, and/or subcontractors involved in any type of off-site packaging or transportation activity. In addition to off-site transportation activities performed by personnel at the BNL site, this procedure applies to

- BNL staff and non-BNL staff who package and ship HAZMAT from BNL to an off-site location, and from an off-site location to BNL.
  - Under Guest User Agreements;
  - By Contractors and Subcontractors;
  - As Work for Others;
  - In the field;
  - At BNL facilities located at other DOE sites;
  - While on company travel;
  - By guests transporting BNL-owned material;
  - By guests using BNL-owned vehicles to transport hazardous materials.

The shipping and receiving of explosive material requires special consideration for both transportation safety and facility safety. Please refer to the Explosives Safety Subject Area for guidance.

Required Procedure

Refer to SOP 460.1, Shipment of Material in the Procurement & Property Management Group S.O.P. Manual for BNL general shipping requirements.

Shipping hazardous materials in quantities greater than MOT in personal vehicles is prohibited.

BNL staff and non-BNL staff packaging and shipping hazardous material (non-MOT) from BNL for delivery to off-site locations follow the steps below.

Step 1	Staff confirm that their employees, subcontractors, or guests who perform off-site packaging and transportation activities are qualified BNL HAZMAT Employee 49 CFR 172.700-704. Refer to the BNL Training and Qualifications Website.
Step 2	Determine if the chemical container is bar coded with a Chemical Management System (CMS) label. If the chemical container has a CMS bar code label and you are shipping it offsite, remove the bar code label, even if you plan to return the material to BNL at a later date, place it on a Chemical Management System Bar-Code Label Removal Sheet, circle the *SARA Environmental Code # 2-Sent off-site*, and send the form to the CMS Team, Building 120. If the material will be returned to BNL, follow the requirements in the section Off-site Packaging and Shipping Radioactive Materials (Non-waste) from or to BNL.
Step 3	All shipping must be done through the Procurement and Property Management Division (PPM) (Traffic Office), not the Upton Post Office. Complete the BNL Shipping Memo* and supply the following information: • Shipping address, including street number, receiver's name, and telephone number, if available; • Quantity per container, container description, and count; • Exact chemical composition for reagent, solution, or mixture; • Chemical form, e.g., gas, solid, or liquid; • Preferred transportation mode, e.g., air or ground charge code, and Material Safety Data Sheet (MSDS). *The BNL Shipping Memo is available through PeopleSoft Financials. You must have permission to access this system. **Note:** Air transport is considerably more restrictive than ground transport.
Step 4	Notify PPM in advance to coordinate shipment and preparation for off-site transportation. The following lead times are recommended for undelayed shipments: • Hazardous materials – 1 working day. • Hazardous materials synthesized on-site (no MSDS) – 4 working days; • Explosives – 5 working days; • Treatability samples – 5 working days; • Hazardous or mixed waste – 5 working days.
Step 5	If the material to be shipped was created at BNL, and no MSDS exists for it, contact the Chemical Management System for assistance in developing an MSDS. The Procurement and Property Management Division (Traffic Office) will not pickup material that does not have an MSDS or approval from the Transportation Safety Officer.
Step 6	

	Contact the Procurement and Property Management Division (Traffic Office), Building 98, at 344-2311 for pickup and delivery to Brookhaven's Shipping facility. To prepare the material for pickup by the Procurement and Property Management Division, package it in the original manufacturer's container (or equivalent), make sure that the material is secured and labeled, and obtain a copy of the MSDS to give to the driver. If you are delivering the material to Building 98 instead of having the Procurement and Property Management Division pick it up, fill out the On-site Transfer/Hazard Analysis Form, as described in Chapter 5 of the Hazardous Material Transportation Manual Program Description. **Note:** A Department/Division may develop its own internal hazardous material shipping program. The hazardous material shipping program must be in compliance with the Hazardous Material Transportation Manual Program Description and Department of Transportation 49 CFR. This program must be approved in writing by the Transportation Safety Officer and the Deputy Director for Operations before any shipments can be made.
Step 7	Staff needing to ship HAZMAT from off-site to BNL must contact the Procurement and Property Management Division (Traffic Office) for assistance to either • Arrange to have the hazardous materials packaged and shipped through the off-site facility's shipping department; or • Obtain the services of a qualified broker, who will package and ship the hazardous materials to Brookhaven in compliance with all DOT and other applicable regulations. **Note:** The need to ship hazardous materials from an off-site location to BNL should be anticipated during the completion of the documentation covered under Work Planning and Control for Experiments and Operations Subject Area or an existing work permit. The preparation of the documentation is used to plan for the proper shipment of hazardous materials from an off-site location to BNL.
Step 8	Ship hazardous materials to U.S. Department of Energy c/o Brookhaven National Laboratory Bldg. 98, Receiving Upton, NY 11973 ATTN: Receiver's Name/Bldg/Room **Note:** These materials include hazardous material that is shipped by overnight shipper, i.e., Federal Express, DHL. All hazardous material is to be shipped directly to this address not the location of the Department/Division using it.

References

BNL Training and Qualifications Website

Chemical Management System Bar-Code Label Removal Sheet

Explosives Safety Subject Area

Hazardous Material Transportation Manual Program Description

PeopleSoft Financials

Procurement & Property Management Group S.O.P. Manual

Work Planning and Control for Experiments and Operations Subject Area

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Questions/Comments Disclaimer

https://sbms.bnl.gov/sbmsearch/subjarea/45/45_pro2.cfm

PROCEDURE: OFF-SITE PACKAGING AND SHIPPING RADIOACTIVE MATERIALS (NON-WASTE) FROM OR TO BNL

Management System: Hazardous Material Transportation Safety
Subject Area: Transportation of Hazardous and Radiological Materials Off-site
3. Off-site Packaging and Shipping Radioactive Materials (Non-waste) from or to BNL

Effective Date: **May 17, 2017**	Subject Matter Expert: Michael Clancy Jr	Management System Executive: Jason Remien

Applicability

This information applies to BNL Organizations, employees, and/or subcontractors involved in any type of off-site packaging or transportation activity. In addition to off-site transportation activities performed by personnel at the BNL site, this procedure applies to

- Under Guest User Agreements;
- By Contractors and Subcontractors;
- As Work for Others;
- In the field;
- At BNL facilities located at other DOE sites;
- While on company travel;
- By guests transporting BNL-owned material;
- By guests using BNL-owned vehicles to transport hazardous materials.

If you plan on shipping or receiving radioactive material in quantities equal to or greater than a Category 3 Nuclear Facility, you must contact the BNL Nuclear Safety Officer to get approval. This type of movement may require the preparation of a Documented Safety Assessment and approval from the Department of Energy.

Required Procedure

Refer to SOP 460.1, Shipment of Material in the Procurement & Property Management Group S.O.P. Manual for BNL general shipping requirements.

It is critical to contact the Packaging and Transportation Group (P&TG) early in the planning process to avoid delays in shipping and reworking cost because of packaging problems. Packaging and Shipping

Radioactive Materials to or from the BNL site is accomplished using one of the following three scenarios:

Scenario 1. Packaging and Transportation Group (P&TG) Provides DOT Certification
Scenario 2. On-site/Off-site Contractor Provides DOT Certification
Scenario 3. On-site/Off-site Contractor Provides Packaging Services with P&TG Providing DOT Certification

Shipment of hazardous materials must adhere to regulatory and/or commercial requirements, such as the International Air Transport Association (IATA) and Department of Transportation (DOT) regulations. For the purposes of Transportation Safety, radiological material is considered hazardous material.

Use of Radiological Control Division Facility Support procedure FS-SOP-1050, Radiological Survey for Radioactive Material Shipments is required for surveys of all off-site shipments of radioactive material regardless of who is providing the DOT shipping certification.

3.1 Shipping Radioactive Materials from BNL to Off-site

BNL staff and non-BNL staff packaging and shipping radioactive materials from BNL to off-site follow the steps below.

Step 1	Staff confirm that their employees, subcontractors, or guests who perform off-site packaging and transportation activities are qualified and have appropriate DOT or equivalent training per 49 CFR 172.700-704. Refer to the BNL Training and Qualifications Website.
Step 2	Determine if the material meets the DOT threshold for the definition (see note) of radioactive material. Contact a Facility Support Representative or technician, or a Transportation SME for assistance in making this determination. If the material's activity and concentration are greater, follow this subject area. If not, no further action is required by this subject area. **Note:** Radioactive Material is defined in 49 CFR 173.403, as any material containing radionuclides where both the activity concentration and the total activity in the consignment exceed the values specified in the table in paragraph 173.436 or values derived according to the instructions for mixtures in paragraph 173.433. **Note:** Items that are verified non-radioactive material as per the above DOT definition are not considered "regulated radioactive material" by DOT, and are prepared for shipment in accordance with the Radiological Control Manual Program Description. Contact a Facility Support Representative or technician for assistance.
Step 3	Determine who will provide the "DOT Certification" for the radioactive material shipped off-site. (See the note for information on DOT Certification). Then follow the requirements for that scenario. There are four scenarios. **Scenario 1.** The Packaging and Transportation Group (P&TG) provides the certification. **Scenario 2.** The on-site/off-site contractor provides the DOT Certification with oversight from P&TG. **Scenario 3.** An on-site/off-site contractor provides packaging services with P&TG providing the DOT Certification.

	Scenario 4. The Department/Division provides packaging services and their own DOT Certification. **Note:** All off-site shipments of radioactive materials that require a shipping paper must include a signed Shipper's Certification on the shipping paper. This certification is signed by the person who offers the radioactive material for transportation. The certification is a legal statement that (when signed) certifies that the radioactive materials being offered for transportation are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation, according to applicable domestic and/or international regulations. Only those staff who have been trained to the appropriate level, as described in Chapter 10 of the Hazardous Material Transportation Manual Program Description, which is in conformance with federal regulation 49 CFR 172 Subpart H - Training, (refer to Section 3.2.5 of the Hazardous Material Transportation Safety Management System Description), may sign the Shipper's Certification. Failure to provide a signed certification by an authorized and trained individual is a violation of federal law and will result in civil and/or criminal penalties against individuals and/or the Laboratory.
Step 4	Notify P&TG in advance to coordinate shipment and preparation for off-site transportation. If a commercial broker will be used provide P&TG with the brokers name and contact information. **Note:** The following lead times are recommended for undelayed shipments: • Truckload, exclusive use, or special service–5 working days written notice; • Radioactive materials requiring state notifications–12 working days; • Other radioactive materials – 3 working days; • Truckload shipments of radioactive materials of highway route controlled –quantity 45 calendar days written notice.
Step 5	Contact your Facility Support Representative to arrange a radiological survey for all radioactive material shipments going off-site. Standard Operating Procedure FS-SOP-1050, Radiological Survey for Radioactive Material Shipments must be followed for this survey.

Scenario 1. Packaging and Transportation Group (P&TG) Provides DOT Certification

Step 1	Contact P&TG and send a completed P&TG PTP 002 Form, which provides the following information, to determine packaging and shipping requirements: • Shipping address, including street number, receiver's name, and telephone number; • For each container, identify isotopes and their quantities along with a container description; • Exact chemical composition for reagent, solution, or mixture; • Chemical form, e.g., gas, solid, or liquid; • Preferred transportation mode, e.g., air or ground;

	• Client, e.g., DOE or private; • BNL account number and/or Federal Express account number. **Note:** Items that are verified to not be radioactive material as per the DOT definition of radioactive material are not regulated by DOT as a hazardous material shipment. These items, not considered "radioactive" by DOT, are prepared for shipment in accordance with the Radiological Control Manual Program Description. Contact a Facility Support Representative or technician for assistance.
Step 2	P&TG prepares the Shipping Memo for shipments for which P&TG provides DOT certification. *The BNL Shipping Memo is available through PeopleSoft Financials. You must have permission to access this system. **Note:** Air transport is considerably more restrictive than ground transport.
Step 3	P&TG will package the material for off site transport.
Step 4	P&TG will transfer the pack to Building 100 for shipment.

Scenario 2. On-site/Off-site Contractor Provides DOT Certification

Step 1	Contact the P&TG Supervisor and request their oversight at the beginning of the project or program.

Scenario 3. On-site/Off-site Contractor Provides Packaging Services with P&TG Providing DOT Certification

Step 1	As part of the work planning process, contact the P&TG Supervisor to arrange a meeting of your staff and contractor staff with P&TG before shipment at the beginning of the project or program.

3.2 Shipping Radioactive Material to BNL from Off-site

BNL staff and non-BNL staff packaging and shipping radioactive materials to BNL from off-site follow the steps below.

Step 1	Staff must not package and ship radioactive material from off-site to BNL themselves. Contact P&TG for assistance to either

	• Arrange to have the radioactive materials packaged and shipped through the off-site facility's shipping department; or • Obtain the services of a qualified broker, which will package and ship the radioactive hazardous materials to BNL in compliance with all DOT and other applicable regulations. P&TG conducts shipments only under unusual conditions. **Note:** The need to ship radioactive materials from an off-site location to BNL should be anticipated during the completion of the documentation covered under Work Planning and Control for Experiments and Operations Subject Area, or an existing radiation work permit. The preparation of the documentation is used to plan for the proper shipment of hazardous materials from an off-site location to BNL.
Step 2	Contact P&TG (631-344-5241) to obtain an authorization number before shipment.
Step 3	Ship radioactive materials to U.S. Department of Energy c/o Brookhaven National Laboratory Building 801, Loading Dock 60 Rutherford Drive Upton, NY 11973-5000 UNITED STATES **ATTN:** Packaging and Transportation Group **For:** "Name of Recipient" and "Authorization Number" **Note:** These materials include radioactive material that are shipped by overnight shipper, i.e., Federal Express, DHL. Radioactive material must be shipped directly to this address not the location of the Department/Division using it. **Note:** The Radiological Control Division must survey the package before its contents are handled.

References

BNL Training and Qualifications Website

FS-SOP-1050, Radiological Survey for Radioactive Material Shipments

Hazardous Material Transportation Manual Program Description

Hazardous Material Transportation Safety Management System Description

Procurement & Property Management Group S.O.P. Manual

Radiological Control Manual Program Description

Work Planning and Control for Experiments and Operations Subject Area

| SBMS Home Page | Top of Subject Area | Instructions | Changes |

Questions/Comments Disclaimer

https://sbms.bnl.gov/sbmsearch/subjarea/45/45_pro4.cfm

PROCEDURE: OFF-SITE PACKAGING AND SHIPPING HAZARDOUS AND/OR RADIOACTIVE WASTE FROM OR TO BNL

Management System: Hazardous Material Transportation Safety		
Subject Area: Transportation of Hazardous and Radiological Materials Off-site		
4. Off-site Packaging and Shipping Hazardous and/or Radioactive Waste from or to BNL		
Effective Date: **May 17, 2017**	Subject Matter Expert: Michael Clancy Jr	Management System Executive: Jason Remien

Applicability

This information applies to BNL organizations, employees, and/or subcontractors who generate hazardous and/or radioactive wastes, or regulated medical waste.

Required Procedure

Refer to the sections on Hazardous Waste, Radioactive Waste, Mixed Waste, and Regulated Medical Waste in the Waste Subject Area.

All hazardous and radioactive waste at BNL must be shipped through the Environmental Protection Division's Waste Management Group.

Step 1	Refer to the appropriate waste subject area to properly manage your waste stream.
Step 2	If you have a question or need assistance, contact your Environmental Compliance Representative, Waste Management Representative, or the Environmental Protection Division's Waste Management Group.

References

Waste Subject Area

| SBMS Home Page | Top of Subject Area | Instructions | Changes |

Questions/Comments Disclaimer

https://sbms.bnl.gov/sbmsearch/subjarea/45/45_pro5.cfm

PROCEDURE: COMMUNICATION AND OUTREACH FOR RADIOACTIVE WASTE SHIPMENT

Management System: Hazardous Material Transportation Safety		
Subject Area: Transportation of Hazardous and Radiological Materials Off-site		
5. Communication and Outreach for Radioactive Waste Shipment		
Effective Date: **May 17, 2017**	Subject Matter Expert: Michael Clancy Jr	Management System Executive: Jason Remien

Applicability

This information applies to BNL staff and non-BNL staff who package and ship radioactive waste from BNL to off-site treatment and disposal facilities.

Required Procedure

All radioactive waste that leaves BNL must be shipped either by highway or by rail through New York City. Since the 9/11 attacks New York City has been on heightened alert and systems were put in place to detect radioactive items at bridges and tunnels into and out of the city.

In order to keep Emergency Management Organizations informed of truckload and railcar loads of radioactive waste traversing their jurisdictions, BNL developed a process that communicates shipping plans without revealing details of actual shipping dates and routes.

Step 1	All radioactive waste shipments are made through the Environmental Protection Division's Waste Management Group (WMG).
Step 2	Generators must use the section on Radioactive Waste in the Waste Subject Area to properly handle radioactive waste.
Step 3	The Transportation Safety Officer issues a biannual schedule of planned shipments to the BNL Emergency Planning Office.
Step 4	The BNL Emergency Planning Office distributes the schedule to an approved set of stakeholders.

Step 5	The WMG, with the assistance of the waste generator, prepares a fact sheet for the waste being shipped.
Step 6	One month in advance of a shipment, the TSO notifies the BNL Emergency Planning Office of the upcoming shipments. This notification includes the fact sheets on the waste being shipped.
Step 7	The BNL Emergency Planning Office distributes the schedule and fact sheets to an approved set of stakeholders.
Step 8	Two weeks before a planned Type B shipment, the TSO submits a request to BHSO for approval.
Step 9	For high-visibility shipments, as defined in DOE M 460.2-1A, the TSO must develop a transportation plan and submit it to BHSO for approval.
Step 10	One week prior of routine shipments the WMG notifies BHSO of upcoming shipments.
Step 11	For all shipments, the WMG issues an electronic notification to BNL stakeholders and BHSO that the shipment has departed BNL.
Step 12	For Type B shipments, the WMG sends an electronic notification to the New York State Warning Points that the shipment has departed BNL.

References

Waste Subject Area

| SBMS Home Page | Top of Subject Area | Instructions | Changes |

Questions/Comments Disclaimer

https://sbms.bnl.gov/sbmsearch/subjarea/45/45_Pro6.cfm

EXHIBIT: BNL MATERIALS OF TRADE (MOT) TABLE

Management System: ***Hazardous Material Transportation Safety***

Subject Area: ***Transportation of Hazardous and Radiological Materials Off-site***

BNL Materials of Trade (MOT) Table

Effective Date:**May 17, 2017**

The BNL Materials of Trade (MOT) Table is provided as a Word file.

The only official copy of this file is the one on-line in SBMS.

Before using a printed copy, verify that it is the most current version by checking the *effective date*.

Questions/Comments Disclaimer

https://sbms.bnl.gov/SBMSearch/subjarea/45/45_Exh2.cfm

Brookhaven National Laboratory Materials of Trade (MOT's)*

Material Name	Hazard Class/Package Group	Maximum Quantity Per Package** (container)	Packaging Requirements	Reportable Quantity lbs
1,1,1-Trichloroethane	6.1/III	66 lbs/8gal		
AC-500	8/II	66lbs/8gal		
Acetone	3/II	66lbs/8gal		
Acetonitrile	3/II	66 lbs/8gal		
Flammable Compressed Gasses including: Acetylene (dissolved), Butane, Hydrogen, compressed, Propane	2.1	Cylinder <220 lbs or permanently mounted tank < 70 gallons	Must be in government vehicle secured upright with cylinder cap on.	
Non Flammable Compressed Gasses including: Air gas, compressed, Argon gas, compressed, Helium gas, compressed, Nitrogen gas, compressed, Nitrous Oxide, Oxygen, compressed, Rare gases and nitrogen mixtures, compressed, Rare gases, mixtures, compressed, Freon 22	2.2	Cylinder <220 lbs or permanently mounted tank < 70 gallons	Must be in government vehicle secured upright with cylinder cap on.	
Ammonium Hydroxide (not more than 35% ammonia)	8/III	66 lbs / 8 gal		
Asana XL Insecticide	6.1/III	66 lbs/8gal		
Avid 0.15 Emulsifiable Concentrate	6.1/III	66 lbs/8gal		
Banzel Herbicide	9/III if >250 gallons, if < 250 gallons not regulated	66 lbs/8gal		
Battery (lead sealed)	8/III	66 lbs/ 8 gal		
Benlate Fungicide	4.1/III	66 lbs/8gal		
Benzene	3/II	66 lbs/8gal		
Biosperse 231	5.1/II	66 lbs/ 8 gal		
Biosperse 254	8/III	66 lbs/ 8 gal		
Biosperse 261T	5.1/II	66 lbs/ 8 gal		
Biosperse 3001	8/III	66 lbs/ 8 gal		
Bromine or Bromine Solutions	8/I	2lb/1pt		
Chloroform	6.1/III	66 lbs/8gal		
Chloroform	6.1/III	66 lbs/8gal		
Diesel Fuel	3/III	66 lbs/8gal		
Drew 11-625 Cooling Water Treatment	8/III	66 lbs/8gal		
Drew 2215 Cooling Water	8/III	66 lbs/8gal		

Treatment				
Dry Ice (carbon dioxide solid)	9/III	66 lbs/8 gal		
Epoxies (resins & hardeners) see table 1 for specific epoxies				
Ethanol/Ethyl alcohol or Ethanol solutions or Ethyl Alcohol solutions	3/II	66 lbs/8gal		
Gasoline	3/II	66lbs/8gal	Metal or Plastic as per 29CFR 1910.106(d)(2) or 1926.152(a)(1)	
Herbicides	6.1 need MSDS	Same as pesticides		
Hexane	3/II	66 lbs/8gal		
HTH (dry chlorine)	5.1/II or III	66 lbs/ 8 gal		
Hydraulic Oil if flash point >141 degrees F.	3/II or III	66 lbs/ 8 gal		
Hydrochloric Acid	8/II	66 lbs/8 gal		
Hydrofluoric Acid <60 % strength	8/II	66 lbs/ 8 gal		10
Hydrofluoric Acid >60% strength	8/I	2 lbs/ 1 pt		10
Hydrogen Peroxide < 60 %	5.1/II	66 lbs/8 gal		
Hydrogen Peroxide >60 %	5.1/I	1 lb/1 pt		
Isopropanol or Isopropyl alcohol	3/II	66 lbs/8gal		
Kerosene	3/III	66 lbs/8gal		
Knox Out Insecticide	9/III	66 lbs/8gal		1
KOH, solid	8/II	66 lbs/8gal		
KOH, solution	8/II	66 lbs/8gal		
Lime – A- Way	8/III	66lbs/8gal		
Methanol	3/II	66 lbs/8gal		
Methanol	3/II	66 lbs/8gal		
Nitric Acid, <70%	8/II	66 lbs/ 8 gal		
Nitric Acid, > 70%	8/I	2 lbs/ 1 pt		
Nitric Acid, Red Fuming	8/1	2 lbs/ 1 pt		
Paint *including paint, lacquer, enamel, stain, shellac solutions, varnish, polish, liquid filler, and liquid lacquer base*	3/I	1 lb/1pt		
Paint *or* Paint related material (latex)	8/II	66 lbs/8gal		
Paint related material *including paint thinning, drying, removing, or reducing compound*	3/I	1 lb/1pt		
Perchlorates, inorganic, n.o.s.	5.1/II	66 lbs/ 8gal		
Perchloric acid <50% acid by mass	8/II	66 lbs/8 gal		
Perchloric acid >50% but < 72% acid by mass	5.1/1	1 lb/1 pt		

Pesticides	6.1? need MSDS	Typical: concentrated < 2.5 gal moved; dilute = 125-160 gal moved.		
Potassium Hydroxide	8/II	66 lbs/ 8 gal		
Propylene Glycol (see antifreeze)				
Sodium Hydroxide	8/II	66 lbs/ 8 gal		
Sodium Hyprochlorite Solution	8/II	66lbs/8gal		
Spray/Aerosol cans	2.1	Max 12 cans /vehicle	Includes WD-40, Zep, etc.	
Sulfuric Acid, Fuming	8/I	2lbs/1pt		
Sulfuric Acid, spent	8/II	66lbs/8gal		
Toluene	3/II	66 lbs/8gal		
Traffic Marking Paint	3/I	1 lb/ 1 pt		

*This list is a subset of those materials found in 49CFR 172.101 Hazardous Materials Tables, that are commonly transferred at BNL. To have a material added to this list contact your Department/Division POC or the Transportation Safety Officer.

** Quantities are based on per package weights/volumes, the total gross weight (includes package) of all MOTs on any one vehicle cannot exceed 440 pounds.

Example 1) If you had (9) five gallon buckets of latex paint, that each bucket weighed 45 pounds and (6) one pint cans of paint thinner each weighing 1 lb. This would be a MOT, your total weight would be 405 lbs for the paint and 6 lbs for the thinner or 411 pounds which is less than the 440. You would have 29 additional pounds of MOTs you could carry on that vehicle.

Example 2) If you had 10 gallons of hydrogen peroxide (<60% solution) in 5 gallon containers, one gallon of hydrofluoric acid (>60%), and one cylinder (1A) of nitrogen gas. You total weights would be 90 lbs for the hydrogen peroxide, 10 lbs for the hydrofluoric acid and 200 lbs for the cylinder of nitrogen for a total weight of 300 lbs. You could not MOT this due to the hydrofluoric acid which the limit is 2 lbs/1 pt. If however the solution of hydrofluoric was <60% it could be MOT.

Epoxies Table 1.

Material Name	Hazard Class/Package Group	Maximum Quantity Per Package** (container)	Packaging Requirements
EA 934 NA System Part A	Not Regulated		
EA 934 NA System Part B	8/II	66lbs/8gal	
EA-40 Part A Resin	Not Regulated		
EA-40 Part B (hardener)	Not Regulated		
Epolite 5313 Epoxy Adhesive Hardener	8/I	2 lb/1 pt	
Epolite 5313 Epoxy Adhesive Resin	Not Regulated		
Epolite 5313 Epoxy Adhesive Resin	Not Regulated		
Epon Curing Agent	8/I	2 lb/ 1 pt	
Epon Resin	Not Regulated if < 119		

	gallons		
Epon Resin 826	Not Regulated		
Epon Resin 828	Not Regulated		
Epon Resin 871	Not Regulated		
Epon Resin SU-8	Not Regulated		
Epo-Thin Resin	3/1	1 lb/ 1 pt	
E-Z Lam A	Not Regulated		

Non DOTRegulated Items

Anti-freeze	
Benlate 50 DF Fungicide	Marine Pollutant
Biosperse 240	
Biosperse 255	
Biosperse 288 Algistat	
Biosperse 3204	
Drax Ant Kill Gell	
Drew 2200 Cooling Water Treatment	
Hydraulic Oil	If flashpoint is > 141 degrees F
Maxiforce Professional Insect Control Roach Killer Bait	
Motor Oil	If flashpoint is > 141 degrees F
Roundup Herbicide	
Transformer Oil	If flashpoint is > 141 degrees F
Vacuum Oil	If flashpoint is > 141 degrees F

EXHIBIT: DOT MATERIALS OF TRADE (MOT) HAZARD CLASSES

Management System: ***Hazardous Material Transportation Safety***

Subject Area: ***Transportation of Hazardous and Radiological Materials Off-site***

DOT Materials of Trade (MOT) Hazard Classes

Effective Date:**May 17, 2017**

MOT includes materials that fall into the following DOT hazard classes:*	**MOT excludes materials that fall into the following DOT hazard classes:***
Below quantities established in 49 CFR 173.6 Hazardous Material Table (see the BNL Materials of Trade [MOT] Exhibit). • Flammable and combustible materials • Corrosive materials • Flammable solids • Oxidizers • Organic peroxides • Poisonous materials At BNL certain "samples" may be considered MOT; contact your Hazardous Materials Subject Matter Expert for assistance.	In any quantity, • Explosives • Poisonous gasses (no poison by inhalation) • Spontaneously combustible material • Dangerous when wet material • Infectious substance (Etiologic agent) • Radiological Material • Hazardous Waste

Shipping hazardous materials in quantities greater than MOT in personal vehicles is prohibited.

* See the MSDS for information on the DOT hazard classification of the material being transferred, or contact either the Procurement and Property Management Division (Traffic Office) or the Transportation Safety Officer.

https://sbms.bnl.gov/SBMSearch/subjarea/45/45_Exh1.cfm

EXHIBIT: TRANSPORTATION OF HAZARDOUS MATERIAL OFF-SITE FLOWCHART

Management System: ***Hazardous Material Transportation Safety***

Subject Area: ***Transportation of Hazardous and Radiological Materials Off-site***

Transportation of Hazardous Material Off-site Flowchart

Effective Date:**May 17, 2017**

The Transportation of Hazardous Material Off-site Flowchart is provided as a PDF.

The only official copy of this file is the one on-line in SBMS.

Before using a printed copy, verify that it is the most current version by checking the *effective date*.

Questions/Comments Disclaimer

https://sbms.bnl.gov/SBMSearch/subjarea/45/45_Exh3.cfm

Transportation of Hazardous Materials Off-site Flowchart

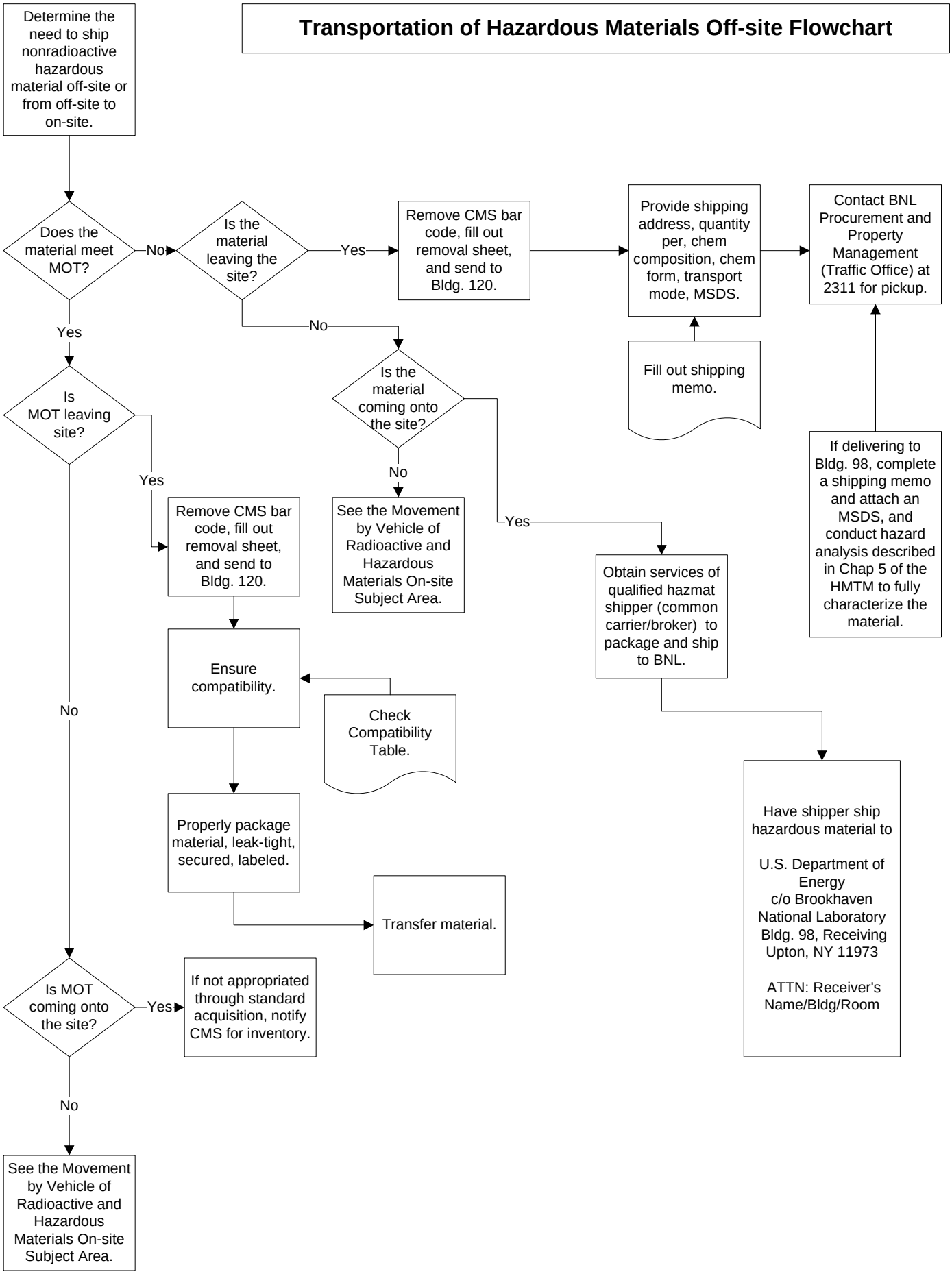

EXHIBIT: TRANSPORTATION OF RADIOACTIVE MATERIALS OFF-SITE FLOWCHART

Management System: ***Hazardous Material Transportation Safety***

Subject Area: ***Transportation of Hazardous and Radiological Materials Off-site***

Transportation of Radioactive Materials Off-site Flowchart

Effective Date:**May 17, 2017**

The Transportation of Radioactive Materials Off-site Flowchart is provided as a PDF.

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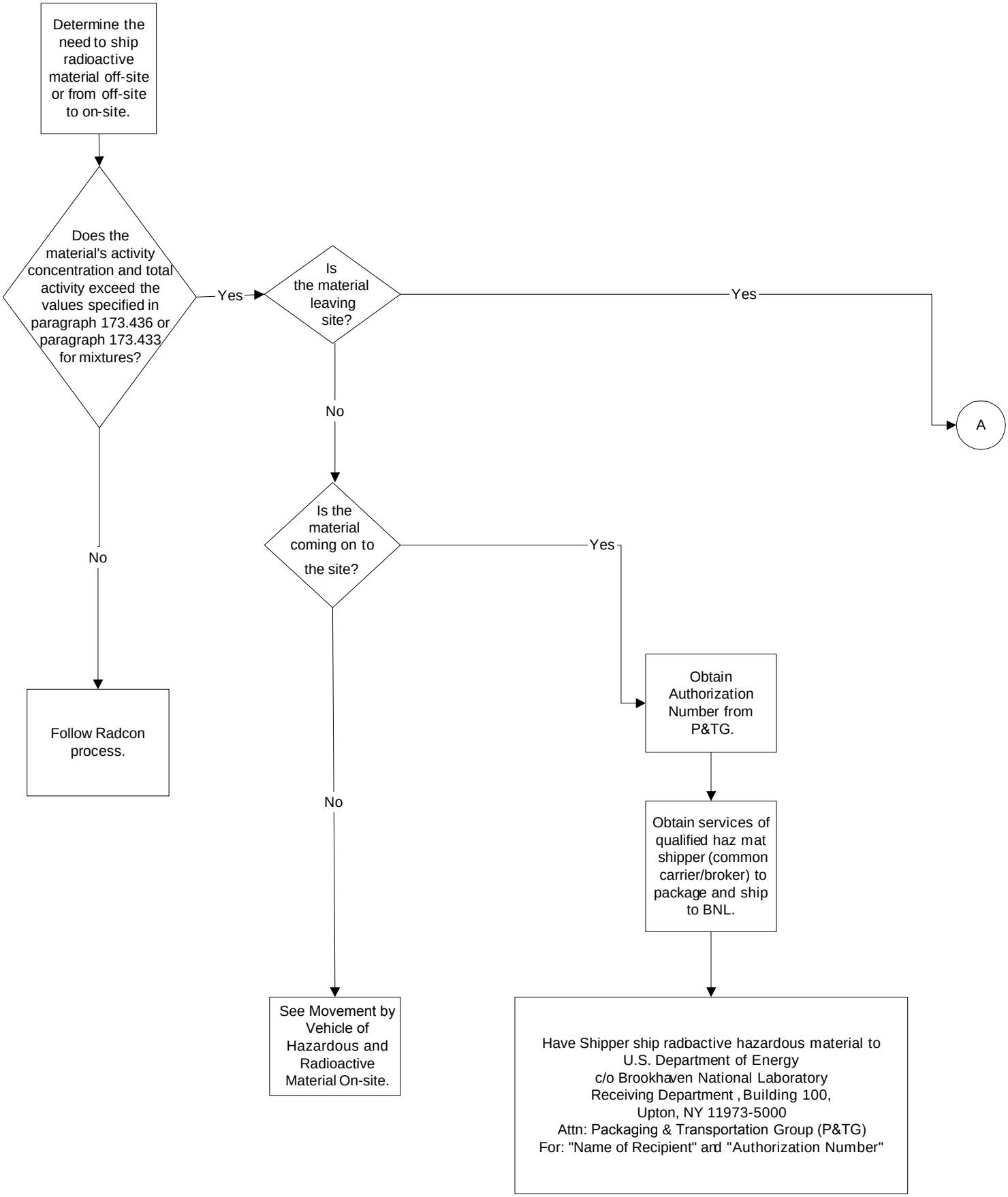
Transportation of Radioactive Materials Off-site Flowchart



FORM: P&TG PTP 002 FORM

Management System: ***Hazardous Material Transportation Safety***

Subject Area: ***Transportation of Hazardous and Radiological Materials Off-site***

P&TG PTP 002 Form

Effective Date:**May 17, 2017**

The P&TG PTP 002 Form is provided as a Word file.

The only official copy of this file is the one on-line in SBMS.

Before using a printed copy, verify that it is the most current version by checking the *effective date*.

Questions/Comments Disclaimer

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Brookhaven National Laboratory

M E M O R A N D U M

Date: _____

To: Packaging and Transportation Group (Bldg. 801, Fax 8121)

From (Name & Dept): _____

Subject: Request Shipment of Radioactive Material

Please arrange for the proper packaging and shipment of the following RADIOACTIVE MATERIAL:

A. Description of Material

1. Item _____ Quantity

2. Radioisotope(s)						
3. Activity						

4. Physical Form [ ] Solid [ ] Liquid [ ] Gas (Check One)

5. Chemical Form _____

6. Net Weight _____ gms or Volume _____ ml

7. Does this material have any other hazardous characteristics? [ ] Yes [ ] No

(i.e., Explosives, Flammable Liquid, Corrosive) If Yes, give details:

_____

8. Brief description of packaging (i.e., box, bagged, canned, Pb shield. Wet Ice required?: Yes__ or No__):

_____

9. Location of Material Bldg. No. _____ Room No. _____

10. Person to contact _____ Extension _____

B. RADIOLOGICAL SURVEY INFORMATION

11. Radiation at contact with item unshielded _____ mRem / hr

12. Radiation at contact with item shielded _____ mRem / hr

13. Contamination level on primary container _____ dpm / 100 cm^2

14. FACILITY SUPPORT GROUP - COGNIZANCE

Name _____ Signature _____ Ext. _____ Date _____

C. **NOTE:** Shipping Address can not be a Post Office Box. Item shipped should be addressed to Radiation Safety Office.

Ship To _____

_____

_____

Attention _____ Telephone No. _____

NRC or State License No. _____ BNL PROJECT & ACTIVITY NUMBER (Required) _____

Please Call P&T at Ext. 5241 for any Questions or concerns. Request Ship Date _____ Federal Express Account Number _____

Signature of Requestor: _____

DEFINITIONS

Definition: Transportation of Hazardous and Radiological Materials Off-site

Term	Definition
DOT Certification	All off-site shipments of radioactive materials that require a shipping paper must include a signed Shipper's Certification on the shipping paper. This certification is signed by the person who offers the radioactive material for transportation. The certification is a legal statement that (when signed) certifies that the radioactive materials being offered for transportation are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation, according to applicable domestic and/or international regulations. Only those staff who have been trained to the appropriate level, as described in Chapter 10 of the Hazardous Material Transportation Manual Program Description, which is in conformance with federal regulation 49CFR172 Subpart H - Training, (refer to Section 3.2.5 of the Hazardous Material Transportation Safety Management System Description), may sign the Shipper's Certification. Failure to provide a signed certification by an authorized and trained individual is a violation of federal law and will result in civil and/or criminal penalties against individuals and/or the Laboratory.
hazardous material	As defined by 49 CFR 171.8, a substance or material, which has been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and which has been so designed. The term includes hazardous substances, hazardous wastes, marine pollutants, and elevated temperature materials as defined in this section, materials designated as hazardous under the provisions of § 172.101 and materials that meet the defining criteria for hazard classes and divisions in Part 173.
hazardous wastes	Any material that is subject to the Hazardous Waste Manifest Requirements of the U.S. Environmental Protection Agency specified in 40 CFR Part 262.
Materials of Trade (MOT)	Certain hazardous materials, when used in direct support of Brookhaven's business, may be transferred from one location to another by a staff member for his or her own use as Materials of Trade, i.e., hazardous chemicals or other hazardous material that will be consumed by a staff member's work. The regulations for transporting MOT are much less restrictive and are based on a quantity limit for specific Department of Transportation hazard classes. The BNL Materials of

	Trade (MOT) Exhibit provides the quantity limits for MOT commonly used at BNL that can be transported.
nonhazardous material	Any material not meeting the definition of hazardous materials per 49 CFR 171.8.
radioactive material	As defined in 49 CFR 173.403, any material containing radionuclides where both the activity concentration and the total activity in the consignment exceed the values specified in the table in paragraph 173.436 or values derived according to the instructions for mixtures in paragraph 173.433.
reportable quantity	The quantity specified in Table 1 of Appendix A to 49 CFR 172.101.
Transportation Safety Department/Division Point of Contact (POC)	Each Department/Division that has a need to ship or receive any radiological and/or hazardous material will have an established point of contact for transportation safety matters. The TSO or designee, TSWG members, and SMEs normally interact with organizational points of contact. The Department/Division management designates these contacts. Usually one of the following is identified as the contact: ESH&Q Representative or ES&H Coordinator. (The contact may also be an SME if training is obtained and maintained). The contact assists in determining transport requirements. If further clarification is needed, the TSO or a Transportation Safety SME is consulted.
Transportation Safety Subject Matter Experts (SME)	Staff designated as SMEs for transportation safety are trained and qualified in a specific area of expertise (e.g., radiological, hazmat, air transport). The TSO or designee, TSWG members, and POCs normally interact with Transportation Safety Subject Matter Experts. The SMEs are designated by the Department/Division management and approved by the TSO. The SMEs are expected to work in compliance with work planning and BNL transportation safety requirements.