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Contents: Regulated Medical Waste Management

Effective Date: February 2003

Point of Contact: [Medical Waste Supervisor](#)

Section	Overview of Content (see section for full process)
Introduction	
1. Regulated Medical Waste Management	<ul style="list-style-type: none"> • Minimize waste generated from research to the extent practicable. • Verify that training status is up-to-date. • Collect, label, and handle regulated medical waste (RMW) as outlined. • Complete required documentation. • For disposal, contact the Medical Waste Supervisor for access to the Medical Department Receiving Room.
2. Handling and Disposal of Long-Lived Radioactive, Regulated Medical Waste	<ul style="list-style-type: none"> • Verify that training status is up-to-date. • Minimize waste generated from research to the extent practical. • Collect, label, and handle radioactive RMW as outlined. • Complete required documentation. • Obtain authorization for disposal from Medical Department ES&H Coordinator.
Definitions	
Exhibits	
RMW Safety Assessment Methodology (SAM)	
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Regulated Medical Waste Briefing Form	
Regulated Medical Waste Control Form	

Training Requirements and Reporting Obligations

This subject area contains training requirements. See the [Training and Qualifications](#) Web Site.

This subject area does not contain reporting obligations.

References

[Hazardous Waste Management](#) Subject Area

[Historic ESH Training Database](#)

[Liquid Effluents](#) Subject Area

[Process Assessment](#) Subject Area

[Radioactive Waste Management](#) Subject Area

[Training and Qualifications](#) Web Site

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

Standards of Performance

All staff and guests shall comply with applicable Laboratory policies, standards, and procedures, unless a formal variance is obtained.

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

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

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.

Before waste is generated, managers shall ensure that it has a funded and available disposition pathway. Managers shall ensure that all hazardous materials and waste have an identified owner who is accountable for its proper disposition.

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.

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

All staff and users shall ensure that environmental effluents, emissions, and wastes

associated with their work are as low as reasonably achievable (also referred to as "E-ALARA").

Management System

This subject area belongs to the **Environmental Management System** management system.

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Subject Area: **Regulated Medical Waste Management**

1. Regulated Medical Waste Management

Effective Date: **February 2003**Point of Contact: [Medical Waste Supervisor](#)

Applicability

This information applies to BNL staff and non-BNL staff who generate and handle RMW and RMW that is contaminated with short-lived isotopes (with half-life <90 days, e.g., ^{11}C , ^{18}F , ^{15}O , or P^{32}).

Required Procedure

All staff must do the following:

Step 1	Identify any wastes, including regulated medical waste (RMW) that will be generated during the planning of the project, experiment, or other work, so that they can be minimized to the extent practicable. See the Process Assessment Subject Area for information.
Step 2	Verify that your training status as a generator of RMW is up-to-date. Check the BNL Training Records and Information on the Training and Qualifications Web Site. Completion of training for hazardous waste management does not fulfill the requirements for RMW management. For further information on hazardous waste training, see the Training and Qualifications Web Site or contact your Training Coordinator .
Step 3	Collect RMW at the point-of-generation as follows: <ul style="list-style-type: none"> • Label the exterior of all RMW containers with a Biohazard Label. • Place sharps in pre-labeled, rigid, impervious, durable, hard plastic sharps containers (maximum three-quarters full). • Place solid RMW (non-sharps) in a single biohazard bag (BB) or inside a pre-labeled, BB-lined ice cream container (ICC), or inside an appropriate U.S. DOT-approved container with a RR liner

	<p>USE DOT approved container with a BB mark.</p> <ul style="list-style-type: none"> • Segregate and place individual containers of liquid waste (i.e., vials, bottles containing more than 20 ml) into rigid, pre-labeled, leak-proof secondary containers (wide-mouth, plastic screw-capped jars or larger plastic screw-topped pails). • Ensure all RMW is properly identified and segregated from general trash so as to avoid improper disposal. • If you need to dispose of large quantities of RMW, contact the Medical Waste Supervisor. <p>Note: The following materials are stock items:</p> <ul style="list-style-type: none"> • Biohazard bag, #I-79862 • Plastic screw-capped jars, #C-05400 (50 ml), #C-05402 (100 ml), #C-05404 (250 ml), #C-05406 (500 ml) • Pail, Screw-Top, white, #K-60632 (5 gallon) • Receptacle, Infectious Waste (Sharps), #K-60597 (8 gallon), #K-60601 (1 gallon), #K-60599 (1 quart)
Step 4	<p>Seal all filled (maximum of three-quarters full) BBs with a J-Seal (see the J-Seal for Bags exhibit in the Radioactive Waste Management Subject Area). Seal all ICCs with 2" masking tape (or equivalent); and seal all sharps containers with a snap lid. Place sealed ICCs (maximum of three) into a BB using a J-Seal and secure the lid on all containers used for transferring liquid RMW.</p>
Step 5	<p>Complete the following documentation:</p> <ul style="list-style-type: none"> • Regulated Medical Waste Control Form (RMWCF) with the type and total number of waste containers. One form can be used for multiple containers. • An orange Waste Tag (available from Central Stock) for each RMW container and affix it to the container securely. • Transcribe the controlled number listed on the RMWCF onto the orange Waste Tag and verify that it matches. • Ensure a Facility Support Representative (FSR) verifies that at least 10-half lives have occurred for RMW containing short-lived isotopes and that an FSR signs the RMWCF.
Step 6	<p>Contact the Medical Waste Supervisor or the ES&H Coordinator for access to the Medical Department's designated storage area before transferring containers from your building to the Medical Department.</p> <p>Do not abandon bags, sharps containers, or any RMW containers in the hall or anywhere on-site.</p> <p>Note: The generator is responsible for properly transporting the RMW from their respective building to the Medical Department in a Laboratory vehicle only. See the Transfer of Hazardous Materials Onsite Subject Area and the completed RMW Safety Assessment Methodology (SAM) exhibit for more information.</p>
Step 7	<p>Tape the Regulated Medical Waste Control Form to the exterior RMW package.</p>
Step 8	<p>Secure the orange Waste Tag onto the RMW exterior package and ensure that the corresponding RMWCF tracking number is listed</p>

	the corresponding RMW tracking number is listed.
Step 9	<p>Contact the Medical Waste Supervisor or ES&H Coordinator, if there are questions on the following:</p> <ul style="list-style-type: none">• Proper packaging;• Proper documentation;• Access to the Medical Department RMW Receiving Area. <p>Note: Improper packaging of RMW must be corrected or the waste may not be accepted by Medical Department staff and could be returned to the generator.</p>

References

[Process Assessment](#) Subject Area

[Radioactive Waste Management](#) Subject Area

[Training and Qualifications](#) Web Site

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

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2. Handling and Disposal of Long-Lived Radioactive, Regulated Medical Waste

Effective Date: **February 2003**Point of Contact: [ES&H Coordinator](#)

Applicability

This information applies to BNL staff and non-BNL staff who generate and handle Radioactive, Regulated Medical Waste with isotopes having a half-life greater than 90 days.

Required Procedure

Radioactive, Regulated Medical Waste (R-RMW) must be handled within a controlled area.

For Departments/Divisions other than Medical, contact your [Facility Support Representative](#), [Environmental Compliance Representative](#), and the Medical Department's [ES&H Coordinator](#) if you intend to generate or require the disposal of long-lived R-RMW.

All staff must take the following actions:

Step 1	Verify that your training status as a generator of Radioactive, Regulated Medical Waste (R-RMW) is up-to-date. Check the BNL Training Records and Information on the Training and Qualifications Web Site and the Historic ESH Training Database , or contact your Training Coordinator for information.
Step 2	Identify any wastes that will be generated during the planning of the project, experiment, or other work so that they can be minimized to the extent practicable. See the Process Assessment Subject Area for information.
Step 3	Collect R-RWM at the point-of-generation in accordance with the Radioactive Waste Management Subject Area and additionally follow all requirements relating to storage, documentation, transferring of RMW listed in the section Regulated Medical Waste Management .

	<p>Note: The following additional material is a stock item:</p> <ul style="list-style-type: none"> • Radioactive Waste Label (from the Radioactive Waste Management Subject Area).
<p>Step 4</p>	<p>Contact the Medical Department's ES&H Coordinator and the Medical Department's Facility Support Representative to do the following:</p> <ul style="list-style-type: none"> • Ensure proper packaging; • Verify the proper documentation has been submitted; • Gain access to the Medical Department R-RMW Receiving Area. <p>Note: Improper packaging of R-RMW must be corrected or the waste may be returned to the generator.</p>

References

[Historic ESH Training Database](#)

[Process Assessment](#) Subject Area

[Radioactive Waste Management](#) Subject Area

[Training and Qualifications](#) Web Site

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RMW Safety Assessment Methodology (SAM)

Requested By: S. Ferrone/B. Pyatt
Department/Division: Medical
Principal Investigator: N/A

Date of Transfer: Open From Building/Area:
Time of Transfer: To Building or Area: 490

Safety Assessment (Chapter 5 of the HMTM provides detailed guidance).

1. Material Characteristics/Classification

Name: (e.g., Commercial, CAS): Regulated Medical Waste

Quantity: (usually 2-3 sharps boxes, 2-BB's, 3 ICC's)

Type of Container: Sharps containers, biohazard bags, Ice Cream Containers, Boxes

Radioactive: Yes No

Isotopes of Concern and Estimated Level of Activity:

Does the material contain fissile isotopes in excess of 125 g U-235, 80 g U-233, 80 g Pu, or in combination such that $g\ U-235/125 + g\ U-233/80 + g\ Pu/80 > 1$? Yes No

If yes, the BNL Criticality Safety Officer must evaluate the material for criticality safety measures and controls.

Is the material hazardous, as defined in 49 CFR 172.101, Chapter 6 or Chapter 7 of the HMTM? Yes No

If yes, then you are required to continue this safety assessment analysis unless the material meets one of the following criteria:

- The transfer is covered by Subject Areas and has previously been evaluated for transfer by the Isotopes and Special Materials Group, Shipping and Receiving, Waste Management Division, or the Transportation Safety Officer (TSO).
- The transfer is routine and has been previously evaluated for transfer.
- Material is defined as a Material of Trade or is a Small Quantity Exempted.

What is the materials classification: Hazard Class: 6.2 UN #: 3291

2. Material Hazard Assessment

What hazard does your material pose? (See Chapter 6 of the HMTM for guidance).

Low	(PG III)	<input type="checkbox"/>
Medium	(PG II)	<input checked="" type="checkbox"/>
High	(PG I)	<input type="checkbox"/>
No Packing Group		<input type="checkbox"/>

3. Material Hazard Level

What hazard does transferring your material pose? What hazard would your material pose to personnel, equipment, and environment should containment be lost during transfer?

(See Chapters 5, 6, and 7 of the HMTM).

Low
Medium
High

4. Transfer Category

What type of transfer is this?

Routine
Nonroutine

If more than one hazardous material is being transferred on the transport vehicle, check compatibility of lading with packaging materials and compatibility during transport of multiple hazardous materials.

5. Package Hazard Assessment

What type of package is your material in?

DOT
DOT-E
TSO-approved DOT-NE
DOT-NE

If your package is DOT-NE, it must be evaluated in accordance with Chapter 5 of the HMTM, and you must acquire approval from the TSO before transferring your material in this package.

6. Transportation System Assessment and Evaluation

Using the information gathered in steps 1 through 5, determine the minimum requirements that your transportation system must have to transfer your material.

Your material transfer has been rated as low moderate high

Therefore, your transportation system must meet the requirements for that level stated in Chapter 5 of the HMTM.

7. Transportation System Documentation

For transfers rated as a moderate or high, the documentation must accompany the transfer and be located in the glove box or the driver's side door pocket. See the applicable Subject Area for specific transportation requirements.

8. Packaging and Transfer Details

Identify any specific requirements for this transfer* (e.g., the specific type of package, labeling requirements, hazard communication requirements, transport routes).

* See continuation of section 8

Transportation Safety Officer or SME Approval

Date

BNL On-site Transfer/SAM Form

New York State Dept. of Environmental Conservation (NYSDEC) - Regulated Medical Waste (RMW) may be transferred within the BNL Complex under the following conditions:

1. DOE vehicle is utilized,
2. Medical Waste Control Form is carried along with the RMW [*Note: RMW with short-lived isotopes that have decayed >10 half lives must have the above form signed by an FSR*]
3. Waste tag is affixed to the RMW container w/ corresponding tracking no.,
4. Arrangements are made with Medical Dept. personnel for drop-off,
5. Sharps must be contained within a rigid/puncture and leak resistant sharps container(s) (no more than $\frac{3}{4}$ full) and placed inside a Biohazard Bag (BB). [*Note: No more than 1 large sharps box/BB*],
6. Ice Cream Containers (ICC) must have a BB liner and be securely covered with an ICC top cover using suitable tape and be contained inside another BB,
7. U.S. DOT-approved cardboard box(es) with a BB liner, a covered ICC lined with a BB and then placed inside an outer BB, or a single BB may be utilized for non-sharp transfers (e.g., contaminated gloves, wipes, pads, etc.),
8. Vials/test tubes/large pipettes placed inside leak-proof, secondary plastic container(s) with secure tops (e.g., sharps box, 5-gallon pail) may be utilized for liquid RMW exceeding 20 mls.
9. Package(s) must be secured in vehicle
10. Take most direct route

**Regulated Medical Waste Briefing Form
MO-003**

1. The BNL Subject Area Regulated Medical Waste Management explains how Regulated Medical Waste must be handled. Please read it carefully, and refer to the Standards Based Management System for the current, controlled version of it in the future. If you have any questions, or you wish to discuss this Subject Area further, please contact the Medical Waste Supervisor.

2. These instructions are considered “read-and-sign” training and will be tracked in a database. Please sign and date the statement below and return the form to the Training Coordinator, Building 490.

I read the BNL Subject Area Regulated Medical Waste Management, effective date _____, and I understand my responsibilities for complying with the steps in this procedure.

(Signature/date)

(Name)

(Life/guest #)

REGULATED MEDICAL WASTE CONTROL FORM

Medical Waste Control No. _____

MINIMIZE WASTES! ASSURE THAT MATERIALS TURNED IN AS REGULATED MEDICAL WASTE MEET THE DEFINITIONS LISTED IN DEPARTMENT INSTRUCTIONS.

1. GENERATOR'S INFORMATION

Name: _____ BNL Life #: _____

Ext: _____ Date: _____

Circle the area or group where waste originated:

CRC Nuc. Medicine RTF PETBNCT OMC

Other (Specify):

2. CONTAINER INFORMATION

The container must be labeled as a BIOHAZARD. If you answer "yes" to #3, label it with a yellow radioactive waste label. If your answer was "no" use the orange hazardous waste tag.

Enter number of each container type:

ICC ____ Sharps ____ Other (Specify):

3. RADIOACTIVITY

Did or does this waste contain any radioactive material, including short-lived isotopes? (i.e., Tc-99m, ¹⁸F, ¹¹C, ¹⁵O).

(circle one) YES NO

If yes, specify isotope and amount as of a given date, and enter total volume and total weight. A Radioactive Waste Inventory Sheet must be attached except if the short-lived isotopes above were used.

	<u>Isotope</u>	<u>Amount μCi</u>	<u>As of Date</u>
1.	_____	_____	_____
2.	_____	_____	_____

Total Cubic Ft: _____ Total Weight: _____

Generator's Signature: _____ Date: _____

----- DO NOT WRITE BELOW THIS LINE-----

Medical waste containers were surveyed prior to pickup by the contractor. No detectable radioactive material was found.

S&EP Representative

Date Surveyed



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Definitions: Regulated Medical Waste Management

Effective Date: **February 2003**Point of Contact: [Medical Waste Supervisor](#)

Term	Definition
biohazard bag (BB)	Bag, red in color, which may have the biohazard symbol on it, defining the contents as infectious.
biologicals	Preparations made from living organisms and their products, including vaccines and cultures.
blood products	Any product derived from human or non-human primate blood, for example, blood plasma, platelets, red or white blood cells.
body fluids	Liquid emanating or derived from humans and non-human primates and limited to blood, cerebrospinal, synovial, pleural, peritoneal, and pericardial fluids, semen and vaginal secretions.
contractor	The vendor holding the contract for transporting and disposing of BNL RWM and R-RMW to off-site disposal facilities.
infectious agent	Any organism, such as a virus or bacteria, that is capable of being communicated by invasion and multiplication in body tissues and capable of causing disease or adverse health effects in humans.
medical waste generator (generator)	Any individual producing or packaging medical waste for intra-site shipments.
Medical Waste Supervisor	The Department Infection Control Practitioner designated by the Medical Department as responsible for overseeing the RMW Program.
non-medical sharps	Epoxy applicators, 'Exacto'-blades, medicine droppers, razor blades, needles and other sharp objects used for typical industrial applications are not considered RMW at the point-of-generation. However, these items must be stored in rigid and durable containers to prevent personal injuries. Wastes of this type are to be taken to the Medical Department for disposal as RMW to ensure safe handling.
Regulated Medical Waste (RMW)	Any waste generated in the diagnosis, treatment (e.g., provision of medical services), or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals.
sharps	Hypodermic needles, syringes (with or without attached needle), Pasteur pipettes, scalpel blades, microscope slides, blood vials, needles with attached tubing, glass or plastic culture vessels, and all other types of broken or unbroken glassware, which were used in work as defined in the waste categories below, are considered RMW (See the definitions under "waste categories"). In addition, the following items are considered sharps: All broken tissue culture vessels that were used as defined in the waste

	<ul style="list-style-type: none"> All broken tissue culture vessels that were used as defined in the waste categories; All unused, discarded hypodermic needles, suture needles, syringes, and scalpel blades. <p>The following items are not considered sharps:</p> <ul style="list-style-type: none"> Pasteur pipettes used for chemicals only; Unused microscopic slides; Microscope slides fixed with alcohol and therefore not infectious; See the Hazardous Waste Management Subject Area for additional information, if the non-medical sharps are contaminated with hazardous wastes.
short half-life isotopes	Radionuclides with a half-life of less than 90 days.
treated RMW	Liquid RMW that has been thoroughly disinfected through the use of a bleach solution or equivalent material for an adequate time so as to ensure that no disease-causing agents are present and may potentially be discharged to the BNL sanitary sewer system. See the Liquid Effluents Subject Area for details.
Waste Categories	
<ul style="list-style-type: none"> animal waste 	Animal carcasses, body parts, and bedding of animals.
<ul style="list-style-type: none"> contact waste 	Wastes from surgery that were in contact with infectious agents, including soiled dressings, sponges, drapes, lavage tubes, drainage sets, underpads, and surgical gloves.
<ul style="list-style-type: none"> cultures/stocks waste 	<p>Cultures and stocks of infectious agents and associated biologicals, including cultures from medical, pathological, and research laboratories, wastes from the production of biologicals, discarded live and attenuated vaccines, and culture dishes and devices used to transfer, inoculate, and mix cultures.</p> <p>(See also the definition of sharps). Vessels (i.e., petri dishes) containing fixed cells (i.e., treated with formaldehyde, alcohol, or an equivalent disinfectant) are exempt. Tissues in paraffin blocks are exempt. Cultures include all human cell lines, all non-human primate cell lines, and all impure animal cell lines. Impure cell lines are those which cannot be certified as free of infectious agents (i.e., any American Type Culture Collection (ATCC) cell line that was not tested for viruses). Culture flasks or petri dishes containing a pure cell line are not RMW.</p>
<ul style="list-style-type: none"> blood and blood products waste 	<p>Blood, items saturated and dripping with blood, or such items that are now caked with dried blood, including serum, plasma, and other components, and their containers. Intravenous bags, which contained blood or were contaminated with blood.</p> <p>Blood refers to human or non-human primate blood or blood from any animal known to have been exposed to infectious agents.</p>
<ul style="list-style-type: none"> laboratory wastes 	Disposable gloves, laboratory coats, aprons, and other personal protection equipment (PPE) that have been in contact with infectious agents.
<ul style="list-style-type: none"> tissue wastes 	<p>Human and non-human primate pathological wastes, including tissues, organs, body parts, and body fluids that are removed during surgery, or other medical procedures and specimens of body fluids and their containers.</p> <p>Urine is not considered RMW unless it is submitted as a clinical specimen for</p>

laboratory tests.

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Revision History: Regulated Medical Waste Management

Point of Contact: [Medical Waste Supervisor](#)

Revision History of this Subject Area

Date	Description	Management System
February 2003	<p>This subject area was revised to incorporate clarifications on the proper handling of non-medical sharps. The following revisions were also made:</p> <ul style="list-style-type: none"> • The Radioactive Waste Management Subject Area for handling of Radioactive-RMW was cross-referenced; • The definition of long-lived Radioactive-RMW was changed to be consistent with the Radiological Control Division's definition (change from 30-day half life to 90-day half life); • A definition for non-medical sharps was added; • An RMW Safety Assessment Methodology (SAM) for intra-site transfer of RMW was added as an exhibit; • A definition for allowable, conditional, on-site RMW treatment was added. 	Environmental Management System
March 1999	This is a new subject area.	Environmental Management System

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