

Document Number: ANP021	<b>RADIOACTIVE CARCASS DISPOSAL</b>  <b><i>CONFIDENTIAL INFORMATION</i></b> <b>MOLECULAR MEDICINE RESEARCH INSTITUTE</b>	Effective Date: JANUARY 2005
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## 1.0 OBJECTIVE

- 1.1 The objective of the Standard Operating Procedure is to describe the proper method for disposal of radioactive animal carcasses and radioactive waste generated by the Animal Care Facility.

## 2.0 SCOPE

- 2.1 This procedure applies to radioactive carcasses and radioactive waste generated by the MMRI Animal Care Facility.

## 3.0 POLICY

- 3.1 It is the policy of MMRI to establish written and approved procedures to ensure that radioactive waste is disposed of properly. This in turn will protect the health and well being of both employees and the animals in the facility.

## 4.0 RESPONSIBILITIES

- 4.1 It is the responsibility of the Animal Research Manager or designated alternate to implement this test method and revise it whenever necessary.

## 5.0 PROCEDURE

### 5.1 Radioactive Carcasses

- 5.1.1 Store the radioactive carcasses in the freezer, designated for radioactive waste, until time for pick up. The earliest pick-up date will coincide with radiation levels having decayed to values below less than twice background levels, or the equivalent time period to allow greater than ten-half lives of a specific isotope to have passed.
- 5.1.2 Lab support will supply large barrels, lime and Superfine to pack the carcasses for disposal.
- 5.1.3 Label the barrel with the type of isotope that it contains, quantity of radioactivity, and the date of disposal.
- 5.1.4 Remove the carcasses from the plastic bags prior to placing them in the steel barrel.

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- 5.1.5 Fill the bottom of the empty barrel with two inches of Superfine. Line the barrel with a 4 mil plastic liner, draping the top of the bag over the edge of the barrel. Add 4 inches of Superfine and lime to the bottom of the bag.
- 5.1.6 Place one layer of carcasses on top of the absorbent layer. Cover them with a layer of lime and approximately 3-4 inches of Superfine. Add enough lime to prevent odor and bloating of the drum; however, leave sufficient room for absorbent to prevent standing liquid as the carcass decomposes.
- 5.1.7 Continue to alternate layers of carcasses, lime, and Superfine until the barrel is full or until all carcasses are packed. The barrel can be filled within 3 inches of the top.
- 5.1.8 Close the bag and secure the lid of the barrel with a locking ring and tighten. Pack the 32 gallon barrel into a 55 gallon drum for shipment. Pour superfine around the 32 gallon drum. Secure the lid of the larger barrel with a locking ring and tighten.
- 5.1.9 Request that the disposal company sends a Certificate of Disposal for the radioactive waste to the animal facility. Keep the certificate in the facility archives.
- 5.2 Radioactive Waste generated by the Animal Facility
  - 5.2.1 Biological Non-Carcass Waste
    - 5.2.1.1 Treat all soiled bedding from any animal given radioactivity as biological waste and place it with the radioactive carcasses in the barrel. Put the bedding material in between the layers of lime.
    - 5.2.1.2 Remove small aliquots of blood urine or other radioactive liquid waste for counting and pour remainder into a plastic container with "Floor Dry" absorbent. It is important to determine the radioactivity of these known samples, because it will be necessary to estimate the radioactivity contained in the gallon container. Enter these values into the Radioactive Ledger.

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#### 5.2.2 Dry Waste

- 5.2.2.1 Consider any non-disposable item, used in a radioactive procedure, contaminated until it is decontaminated and wipe tested to show a radioactive count that is less than 2 times background.
- 5.2.2.2 Place any solid waste generated by a radioactive procedure in a yellow bag imprinted with the lettering "Caution: Radioactive Waste."
- 5.2.2.3 Close the bag securely when it is full. Label the bag with the type of isotope that it contains, approximate amount of radioactivity, and the date it was generated. Place these values into the Radioactive Ledger.
- 5.2.2.4 Place the full bag into the waste barrel identified as Dry Radioactive Waste. Record the waste into the log taped to the drumhead.

#### 5.2.3 Liquid Radioactive Waste

- 5.2.3.1 Liquid radioactive waste is generated by cage washing, using disinfectant, or decontamination of surfaces. Remove a small aliquot from the larger volume and count the amount of radioactivity present. Use this value to estimate the amount of radioactivity in the larger volumes of liquid.
- 5.2.3.2 Absorb this liquid waste with Superfine in a bulk 1 gallon plastic jug designated as "Absorbed Liquid Waste." Once the jug is full, transport and store in 55 gallon drum. Record in log on drum head.
- 5.2.3.3 Place any used scintillation fluid or vials in the barrel designated for scintillation vials. Remember to update the tally sheet on the outside of the barrel when making an addition to the barrel.
- 5.2.3.4 It is the policy of MMRI, Inc., to use only aqueous based scintillation fluid (Beckman Ready Safe).
- 5.2.3.5 CAUTION!! Radioactive waste cannot be autoclaved.