

# Advanced Medical Systems, Inc.

Procedure: RSP-014

Revision No.: 000

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Date: January 3, 1996

## RECEIPT, HANDLING AND IDENTIFICATION OF RADIOACTIVE MATERIALS

Approved by (Vice President):

Approved by (RSO):

Approved by (RSC Chair):

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# RADIATION SAFETY PROCEDURE

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## 1 PURPOSE

This procedure contains the methodology for receiving, handling, and identifying incoming shipments at Advanced Medical Systems, Inc. (AMS) that are known or suspected to be radioactive or to contain radioactive material.

## 2 SCOPE

This procedure applies to all functions pertaining to receipt, handling, and identification of incoming shipments known or suspected to be radioactive or to contain radioactive material. Shipments that are known or suspected to contain only radiologically stable (inert) materials are exempt from the provisions of this procedure.

## 3 REFERENCES

- 3.1 U. S. Nuclear Regulatory Commission Radioactive Material License Number 34-19089-01.
- 3.2 Title 10, Code of Federal Regulations, Part 20, "Standards for Protection Against Radiation".
- 3.3 Title 10, Code of Federal Regulations, Part 71, "Packing and Transportation of Radioactive Material".
- 3.4 Advanced Medical Systems, Inc., Radiation Safety Procedure No. RSP-001, "Radiation Protection Program Plan".
- 3.5 Advanced Medical Systems, Inc. Standard Operating Procedure No. RSP-008, "Instrumentation and Surveillance".
- 3.6 Advanced Medical Systems, Inc. Standard Operating Procedure No. RSP-009, "Contamination Control".
- 3.7 Advanced Medical Systems, Inc. Standard Operating Procedure No. RSP-010, "Exposure Control".

## 4 DEFINITIONS

The definition of terms used in this RSP that may not be commonly understood shall be found in RSP-002, "Definitions".

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### 5 PROCEDURE

#### 5.1 Responsibilities

5.1.1 The Vice President shall supply adequate resources to ensure compliance with this procedure.

5.1.2 The Radiation Safety Officer (RSO) shall:

5.1.2.1 Verify that only Radiation Protection Technicians conduct receiving surveys.

5.1.2.2 Verify that radiation surveys are completed on incoming shipments known or suspected to be radioactive.

5.1.2.3 Evaluate radiation survey results from incoming shipments.

5.1.2.4 Assure that all Radiation Protection Technicians are trained in the provisions of this procedure.

5.1.2.5 Provide direction in any remediation of receiving incidents involving radioactive materials.

5.1.2.6 Assure that the requirements of this procedure are met.

5.1.3 Radiation Protection Technicians shall:

5.1.3.1 Comply with all applicable requirements of this procedure when receiving radioactive materials.

5.1.3.2 Periodically review the contents of this procedure.

#### 5.2 General information

5.2.1 While it is anticipated that all shipments will be clearly marked concerning the type and quantities of radioactive material, it is possible for packages containing radioactivity to arrive unmarked and unannounced.

5.2.2 Prior to handling radioactive material, all personnel shall be familiar with accompanying paperwork.

**Note:** This information can be critical to planning the safe handling of contaminated material.

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5.2.3 If the information on these forms is unclear or incomplete:

5.2.3.1 Work shall be stopped.

5.2.3.2 Clarification shall be obtained from the RSO.

5.2.3.3 The RSO shall authorize work to proceed.

5.2.4 Incoming packages shall be inspected for visible defects, and all package defects shall be noted on the receiving papers.

5.2.5 Radiological survey instruments shall be selected and operationally checked in accordance with RSP-008 prior to use.

5.2.6 This survey procedure shall be considered useful only for detecting ionizing radiation that can penetrate packages (i.e., gamma radiation) or radioactive contamination (i.e., alpha, beta, and/or gamma radiation) on the outside of the shipment.

### 5.3 Purchase of Radioactive Materials or Radiation-Producing Machines

5.3.1 The RSO shall maintain a record of acquisitions pending their addition to the radioactive materials inventory log.

5.3.2 When the materials are received, they shall be added to the radioactive materials inventory log.

### 5.4 Scheduling

5.4.1 Shipments shall be surveyed for exposure rate and removable contamination within three (3) hours of arrival.

5.4.2 The documentation accompanying the shipment and radioactive shipping labels shall be reviewed in order to obtain information regarding the activity of its contents.

5.4.3 The shipment shall be marked and labeled as containing radioactive material and that it has no physical evidence of possible contamination (e.g., crushed, wet, or damaged).

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### 5.5 Initial Survey of Items Known or Suspected to Contain Radioactive Materials

5.5.1 Upon receipt, packages containing radioactive material shall be surveyed if there is evidence of degradation of the package integrity.

5.5.2 Exposure rate surveys shall be performed on contact and at a distance of approximately 1 meter from accessible surfaces of the shipment pursuant to RSP-008, "Instrumentation and Surveillance".

5.5.2.1 A gamma dose rate instrument shall be used to perform the surveys.

5.5.2.2 If the contact exposure rate exceeds 200 mR/hr:

5.5.2.2.1 The item shall be secured within the vehicle;

5.5.2.2.2 The RSO shall be notified;

5.5.2.2.3 The RSO shall inform the driver, prevent the vehicle from leaving, and contact the USNRC (Region III) for additional instructions.

**Note:** For "exclusive use" shipments, the contact exposure rate cannot exceed 1000 mR per hour.

5.5.2.3 If the one (1) meter exposure rate exceeds the Transport Index marked on the Radioactive Shipping Label:

5.5.2.3.1 The item shall be secured within the vehicle;

5.5.2.3.2 The RSO shall be notified;

5.5.2.3.3 The RSO shall inform the driver, prevent the vehicle from leaving, and contact the USNRC (Region III) for additional instructions.

5.5.3 A removable contamination survey shall be performed pursuant to RSP-008, "Instrumentation and Surveillance".

**Note:** A removable contamination survey is not required for special form materials pursuant to 10 CFR 20.1906(b)(1).

5.5.3.1 Dry disk smears shall be used to perform the survey, with smears analyzed using a smear counter.

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5.5.3.2 If removable activity in excess of 1,500 dpm  $\beta/\gamma$  per 100 cm<sup>2</sup> is identified:

5.5.3.2.1 The item shall be secured within the vehicle;

5.5.3.2.2 The RSO shall be notified;

5.5.3.2.3 The RSO shall inform the driver, prevent the vehicle from leaving, and contact the USNRC (Region III) for additional instructions.

5.5.4 At the completion of receiving surveys:

5.5.4.1 The package shall be removed from the truck to the loading dock

5.5.4.2 The Transport Index for previously inaccessible surfaces shall be confirmed.

**Note: Unaccessible surfaces means the bottom of heavy packages that require a forklift to raise.**

5.5.4.3 The bill of lading shall be signed.

5.5.4.4 The vehicle may be released.

5.5.4.5 The package shall be transported to a designated Radioactive Material Storage Area.

5.5.4.6 The Radioactive Shipment Receiving Record shall be completed and forwarded to the RSO.

#### 5.6 Receiving New Sealed Sources

5.6.1 The package containing the new sealed source shall be opened in the designated Radioactive Material Storage Area and inspected for damage.

5.6.2 The contents of the package shall be checked to ensure that it corresponds with the items listed on the bill of lading.

5.6.3 The bill of lading, the leak test certificate and the test report shall be forwarded to the RSO.

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5.6.4 The package shall be closed and secured in the designated Radioactive Material Storage Area

#### 5.7 Receiving Used Sealed Sources

5.7.1 The package containing the new sealed source shall be opened in the designated Radioactive Material Storage Area and inspected for damage.

5.7.2 A leak test on accessible surfaces of the source shall be performed pursuant to RSP-019.

5.7.3 If leak test results exceed 0.005 microcurie:

5.7.3.1 The RSO shall be notified;

5.7.3.2 The source, housing and all packaging shall be secured.

5.7.3.3 The RSO shall contact the USNRC for additional instructions.

5.7.4 The contents of the package shall be checked to ensure that it contains the items on the bill of lading.

5.7.5 The bill of lading, the leak test certificate and the test report shall be forwarded to the RSO.

5.7.6 The package shall be closed and secured in the designated Radioactive Material Storage Area

#### 5.8 Contamination Control

At the completion of receiving activities, Radiation Protection Technicians shall perform a contamination survey of their hands pursuant to RSP-008 and RSP-009.

#### 5.9 Radioactive Materials Inventory

5.9.1 Radioactive materials received pursuant to this procedure shall be entered onto the radioactive materials inventory log (Attachment 1, "Amount Acquired").

5.9.2 The log shall be maintained by the RSO and shall be updated at least quarterly to reflect usage and new acquisitions.



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5.9.3 The log shall contain, as applicable:

- 5.9.3.1 The capsule serial number
- 5.9.3.2 The radionuclide.
- 5.9.3.3 The activity of the source (millicuries or microcuries)
- 5.9.3.4 The date of activity calibration
- 5.9.3.5 The location where the source will be stored at the London Road facility.
- 5.9.3.6 The date of arrival.

## 6 EXEMPTION PROVISIONS

Variances and exceptions to the requirements of this RSP shall be permitted pursuant to the written authorization of the RSO and the Vice President.

## 7 DOCUMENTATION

- 7.1 All Records pertinent to this procedure shall be maintained pursuant to RSP-004, "Radiation Protection Records".
- 7.2 The RSO shall maintain the records necessary to demonstrate the current inventory of radioactive materials at the London Road facility.
- 7.3 The RSO shall submit a copy of AMS's current USNRC license as requested by the vendor supplying the radioactive material.
- 7.4 All personnel receiving or opening packages containing radioactivity shall forward pertinent records and information to the RSO.

## 8 ATTACHMENTS

Attachment 1 - Radioactive Materials Inventory Log



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ATTACHMENT 1  
RADIOACTIVE MATERIALS INVENTORY LOG

Radionuclide: ☐ Cs-137 ☐ Co-60 ☐ DU ☐ Other \_\_\_\_\_

[illegible]

NRC response to AMS' response to DFI

change to High Priority:

- recovery of hot cell *int. priority, BUT ALREADY COMPLETED*
- reduction of inventory *no*

inventory reduction - provide estimated completion dates *yes - NPI no - other*

describe the actions taken to date and planned, to identify a market for the sealed and bulk sources *general*

change to High Priority:

- training of the offsite emergency response personnel in EP *yes*
- complete EP exercise (within 2 months after training is completed) *yes*

change to High Priority:

- offsite disposal of wastes *no*

amend license (LC 14) - new completion date for the physical inventory must not extend past June 30, 1998, the date of the next required physical inventory *mentioned*

describe your plan of action for the decommissioning/decontamination of the WHUT room *no*

decontamination of the facility - re-address this issue and describe your plan of action for the decontamination of the AMS facility *no*

provide information regarding the expected long term (3-5 years) integrity of the collapsible storage tanks *yes*

address the issues discussed in the structural integrity inspection report. *N/A*

*1/15/96 update to Strategic Plan*

*C/S*

JAN 08 1996

David Cesar, Vice President  
Advanced Medical Systems, Inc.  
121 North Eagle Street  
Geneva, OH 44041

Dear Mr. Cesar:

We have completed our review of your decommissioning financial assurance submittal dated January 27, 1995 and subsequent submittals dated March 31, 1995, July 27, 1995, and December 14, 1995. Within the scope of our review, no further deficiencies were identified. A copy of this information will be placed in your license file.

Please note, however, that we are still in the process of reviewing your cost estimate and conceptual decommissioning plan. A letter addressing these issues will be mailed to you in the near future. In the event that the cost estimate to decommission the facility changes, it will be necessary for you to amend your existing financial assurance documents, or submit a new financial assurance instrument for the new amount. Our acceptance of your letter of credit dated January 27, 1995 does not imply acceptance of your cost estimate of 1.8 million dollars.

If you have any questions or require clarification on any of the information stated above, you may contact us at (708) 829-9887.

Sincerely,

Original Signed By  
Kevin G. Null  
Nuclear Materials Licensing Branch

License No. 34-19089-01  
Docket No. 030-16055

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