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C-A OPERATIONS PROCEDURES MANUAL

8.13.2 C-A Procedure for Radioactive Material Control

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Attachments

Hand Processed Changes

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Approved: \_\_\_\_\_ *Signature on File* \_\_\_\_\_  
Collider-Accelerator Department Chairman Date

P. Cirnigliaro

## 8.13.2 C-A Procedure for Radioactive Material Control

### 1. Purpose

To provide guidance in the identification (including survey), transport, and use of, radioactive equipment and shielding.

#### 1.1 Definitions:

- 1.1.1 Activation Check: a posting for areas where materials can be made radioactive by beams of particles. Examples are AGS Ring, Primary Caves, and selected secondary beam lines. Activation Check may also be posted on RMAs (see Definition 1.1.3). The Facility Support Representative designates these postings.
- 1.1.2 In-Use Radioactive Materials: radioactive materials that are fixed in-place or are structures in Activation Areas and that are activated (10 CFR 835.604(b)(3)). The radioactive material can be an actual physical part of a system (e.g. installed beam line, magnets, etc.), or support the operation of a system (e.g. shielding, rebuilt equipment, etc.). Such “in-use” materials are exempt from the labeling requirements of Reference 7.2. These areas do not need RMA custodians assigned or material inventories, and have concurrence of the C-A FS Representative.
- 1.1.3 Radioactive Materials Areas: any area within a controlled area, accessible to individuals, in which items or containers of radioactive material are used or stored. Examples are Buildings 912, 922, 923, the Steel Yard, and the Block Yard. These areas are to be designated by the C-A Radiological Control Coordinators and C-A FS Representative.

### 2. Responsibilities

**Note:**

See Attachment 8.1 BNL Memorandum by P. Bergh for the basis for clarification of “activation **check**” survey requirements. Attachment 8.2 summarizes these requirements and is attached to the Annual C-AD RWP-01 each year as a reminder to all who enter C-AD radiological posted areas

2.1 It is the responsibility of any individual removing C-A equipment from areas posted “Activation Check,” to have these items surveyed as per Attachment 8.2.

2.2 It is the responsibility of the supervisor or Work Control Coordinator to help ensure that any equipment which is activated, and is located in his area, or worked upon, or moved by individuals reporting to him, is properly surveyed and labeled by Radiological Control Technicians (RCTs).

2.3 RCTs are responsible for providing routine surveys of Radioactive Materials Areas and shall perform the monitoring and labeling of items from areas posted “Activation Check.”

### **3 Prerequisites**

3.1 Monitoring of Radioactive Materials Areas shall be performed by RCTs using properly calibrated and source checked instruments.

3.2 Boundary requirements for Radioactive Materials Areas are established by the use of signs, shielding, rope and fences in order to properly contain and work with activated equipment or shield blocks.

3.3 RMA responsible persons shall be trained on their responsibilities as outlined in Reference 7.2.

3.4 Individuals who enter or remove radioactive materials from a posted Radioactive Material Area shall be appropriately trained radiation workers.

### **4 Precautions**

4.1 Failure to follow survey and labeling requirements, unless an exception applies (see step 5.2), can result in unnecessary exposure to workers and violation of radiological rules.

### **5 Procedures**

5.1 Materials removed from Radioactive Materials Areas shall be monitored and labeled by a RCT (see C-A-OPM-ATT 8.13.2.b for information on labeling shield blocks at C-AD).

5.2 Three exceptions to Step 5.1 are as follows (see Attachment 8.2):

5.2.1 Items under your control at all times after removal from an area posted “activation check” that are being moved to a low-background area for radiation monitoring

5.2.2 Items that are labeled, under your control at all times and that are moving from an area posted “activation check” to a Radiation Area, High Radiation Area, RMA or Controlled Area

5.2.3 Items that you carried into the area that you know not to be activated

5.3 When a large activated item is to be broken down into component parts, the Radioactive Materials Area where the item is broken down must be monitored and posted by RCTs. Rope, stanchions, and signs, are appropriate to control a temporary area of this type.

## **6 Documentation**

None

## **7 References**

7.1 C-A-OPM 8.20.2 "Radioactive Waste Disposal".

7.2 C-A-OPM 9.5.16, Labeling, Documentation and Handling of Radioactive Materials

7.3 C-A RMA Custodian Listing.

7.4 C-A-OPM-ATT 8.13.2.b, "Activated Material Rules"

## **8 Attachments**

8.1 BNL Memorandum, P. Bergh to D. Passarello and J. Maraviglia, dated 11/19/04 (revised 6/2/08), Clarification of Survey Requirements for Items Exiting Radiological Areas or Areas posted Activation Check.

8.2 Summary of Survey Requirements for Items Exiting Radiological Areas or Areas posted Activation Check.

Attachement 8.1



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**Memo**

*Date:* 11/19/04 (Revised 6/2/08)

*To:* D. Passarello & J. Maraviglia

*From:* P. Bergh

**Subject:** Clarification of Survey Requirements for Items Exiting Radiological Areas or Areas posted Activation Check.

This morning you brought to my attention that on occasion, while presenting Collider-Accelerator access training, questions have been asked in regard to release of items from areas posted "Activation Check." The following guidance is provided to assist you during these training sessions.

The following pertains to items being removed from areas posted as "RADIOACTIVE MATERIAL AREAS" and/or "Activation Check." BNL policy requires that in order to avoid performing radiological surveys of unlabeled items entering then exiting the above posted areas during shutdown periods, information needs to exist indicating that there was no potential of the items to become contaminated or activated while in the above posted areas.

This policy applies to the Collider-Accelerator as follows:

- Items carried into the above posted areas may be removed without survey by the same person upon immediate exit from that area. *This guidance has always been given at C-A and is permissible because the owner knows the item has not been activated.*
- Items carried into the above posted areas and left unattended for a period of time may be removed by the owner without survey if the owner possesses the knowledge the item was not exposed to beam (activation of the item is not possible) and the item being removed is the exact item taken in.

- For all other items removed from the above posted areas notify the Facilities Support Group at ext. 4660 for evaluation/survey.
- As always, if there are any questions regarding the release of items from any posted radiological area, please notify Health Physics at ext. 4660.

Cc R. Karol  
D. Ryan

## **SUMMARY OF “ACTIVATION CHECK” RULES**

**Items that REQUIRE an RCT survey before removal from an area posted “activation check” are:**

- ✓ **Floor sweepings**
- ✓ **Fixed structures**
- ✓ **Installed components**
- ✓ **Shielding**
- ✓ **Items of unknown origin**

**Items that DO NOT REQUIRE an RCT survey before removal from the area posted “activation check” are:**

- ✓ **Items under your control at all times after removal from the posted area that are being moved to a low-background area for radiation monitoring**
- ✓ **Items that are labeled, under your control at all times and that are moving from the posted area to a Radiation Area, High Radiation Area, RMA or Controlled Area**
- ✓ **Items that you carried into the area that you know not to be activated**