

4.49 Procedure for Generating and Using CAS Sweep, Clearance, and Access Procedures for Non-Primary-Beam Enclosures

1. Purpose

1.1 The secondary beams and areas external to the primary shielding present reduced levels of radiation hazard compared to the interior of the primary shielding enclosures. In addition, the precise arrangement of walkways, gates, etc. are often fixed quite late in the experimental schedule. For these reasons a flexible process for establishing sweep procedures is necessary and appropriate. This documents to serve as a guide for the preparation, review, approval, and execution of radiation area sweep procedures not governed by other Collider-Accelerator Procedures.

2. Responsibilities

2.1 The Collider-Accelerator Support (CAS) Group Supervisor shall enter each procedure as a file on a dedicated disk(s) and will have the authority to originate or amend the files as changes are approved by the Radiation Safety Committee (RSC), and liaison physicist.

2.2 This disk, along with a back-up disk, shall be kept in a secure location.

2.3 Liaison Physicists are responsible to review procedures, and are expected to walk through the procedure to assure no ambiguities exist. The Liaison Physicists shall be responsible for development of the sweep procedure and seek the assistance of the CAS Group Supervisor in the generation of the procedure.

2.4 The CAS Group Supervisor/designee is responsible for training at least one CAS Watch Supervisor plus the Radiological Control Technician (RCT) Supervisor. He/she is expected to walk through the procedure with these individuals in order to ensure no ambiguities exist.

2.5 Each procedure shall be reviewed by the RSC member appointed by the RSC Chair, to assure compliance with C-A and BNL requirements, and consistency with similar procedures.

2.6 With exception of the Watch Supervisor trained by the CAS Group Supervisor, or designee, CAS Watch Supervisor are responsible for training each other and the CAS Watch Technicians.

2.7 The RCT Supervisor or the ESH Representative for C-A is responsible for Training RCT's for each procedure.

- 2.8 The Liaison Physicist is responsible to train Users, and to document that training, whenever a secondary beam line may be swept by Users alone. This training may be done by the CAS Watch Supervisor, a RCT, or the Liaison Physicist.
- 2.9 RCT, or the CAS Watch Supervisor, shall train a User in the Users' limited duties as a second sweep team member for any sweep requiring a second person.
- 2.10 During the first few times a sweep is performed for a new area, RCT/CAS Watch Personnel shall carry a controlled copy of the sweep procedure.
- 2.11 CAS Group Supervisor shall maintain controlled copies of the sweep procedures in three locations: the CAS Watch Station, the MCR and the RCT Trailer.
- 2.12 The CAS Group Supervisor shall ensure that all logs of sweep procedures have an attached listing of all personnel trained in their use, i.e. RCT personnel listed in their controlled copy and CAS personnel listed in their controlled copy. The MCR personnel will not be trained in the use of secondary beam area sweep procedures, and shall not contain a listing.

3. Prerequisites

None

4. Precautions

None

5. Procedures

Writing and Approving Procedures

- 5.1 The CAS Group Leader shall originate and issue all subject procedures.
- 5.2 Each procedure shall be reviewed by the pertinent Liaison Physicist.
- 5.3 Each procedure shall be reviewed by a member of the Radiation Safety Committee appointed by the RSC Chairperson.
- 5.4 Each procedure will be entered in the network directory after being assigned a file name, in PC format, descriptive of the application.
 - 5.4.1 Each file will include a date of origin and a version number. A change to a file shall result in incrementing the version number, and may change the origination date.

5.5 Each procedure will list and include pertinent documents and diagrams associated with the procedure.

5.5.1 Maps of the sweep procedure shall be explicit with regard to checkpoints,

Training

5.6 Supervisors will ensure their personnel are trained on CAS Sweep Procedure 4.7 which allows personnel to self-train on area-specific secondary sweep procedures.

5.6.1 Self-trained personnel must bring the written procedure, with them when they perform a self-trained sweep for the first time.

Note:

Self-training is not allowed for at least one Watch Supervisor and for the RCT Supervisor. The one Watch Supervisor who is trained by walk-through may allow the next Watch Supervisor(s) on duty to self-train. The first Watch Supervisor to train on a new procedure plus the RCT Supervisor shall always walk-through the procedure with the CAS Group Supervisor, or designee. The walk-through training must be done prior to allowing other Watch Supervisors, the Watch or the RCT to self-train. Self-trained personnel must rely on accurate maps and procedural details. By walking through a new procedure, the first Watch Supervisor and the RCT Supervisor must validate the procedure to ensure that flawless self-training will follow.

5.7 The names of trained personnel for each current procedure will be maintained at the location for the log that contains the up-to-date sweep procedures.

5.8 IF a secondary beam line is of low enough radiation hazard that it may be swept solely by Users, THEN the Liaison Physicist shall train the Users.

5.8.1 The pertinent Liaison Physicist shall ensure a log of trained Users is maintained in the C-A Main Control Room.

5.9 IF a secondary beam-line sweep employs a User as the second sweep-team member, THEN the lead person, who is normally the CAS or RCT's, shall train that User in the Users' limited sweep duties just prior to performing the sweep.

Updating the Procedure Logs

5.10 The Collider-Accelerator Support (CAS) Group shall update the sweep procedure logs prior to the heavy ion program and prior to the proton program.

5.10.1 IF a sweep procedure remains unchanged for subsequent running periods, THEN the CAS Group Supervisor shall initial and re-date the cover of the existing procedure in each of the sweep logs.

5.11 The CAS Group Supervisor shall update the logs each time a change to a procedure is approved.

5.11.1 IF the experimental schedule demands immediate changes to a procedure, THEN the changes may be handwritten, reviewed, and approved by any two for the following:

CAS Group Supervisor,
RSC member,
pertinent Liaison Physicist, or
ESH Representative for C-A.

5.11.2 ALL signed copies with the date and time of origin of the change shall be available at the location of ALL the sweep logs. The names of personnel trained in these changes shall be entered on these handwritten-changed procedures.

5.11.3 The handwritten changes shall expire after 96 hours at which time new typewritten procedures that undergo approval as outlined in steps 5.2 and 5.3 shall be made available.

6. Documentation

None

7. References

7.1 [CAS Sweep Procedure C-A-OPM 4.7 “Secondary Beam Line Sweep, Access and Clearance Procedures”](#).

8. Attachments

None