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C-A OPERATIONS PROCEDURES MANUAL

9.1.13 Procedure for Design Review of C-A Access Control Systems

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Hand Processed Changes

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

A. Etkin

9.1.13 Procedure for Design Review of C-A Access Control Systems

1. Purpose

To assure that all new designs or design revisions to parts of C-A access control systems (including chipmunks), are reviewed and approved prior to their operational use.

1.1 Definitions

1.1.1 Primary Beam - Beam direct from an accelerator that has not interacted with a thick target.

1.1.2 Secondary Beam - A beam produced by the interaction of a beam with a thick target or the decay of beam particles.

2. Responsibilities

2.1 The [C-A Radiation Safety Committee](#) (RSC) or an assigned subcommittee of the RSC is responsible to review design documentation to assure that the design provides the required level of protection.

2.2 The Chair of the Radiation Safety Committee, or designee, is responsible to determine the nature of review required.

2.3 The [Liaison Physicist](#) is responsible for providing a written description of the radiation issue to the Radiation Safety Committee (RSC).

2.4 The [Liaison Physicist](#) and/or the Access Control Cognizant Engineer are responsible to provide design documentation to the review committee.

3. Prerequisites

Trained and qualified C-A RSC members and [liaison physicists](#).

4. Precautions

Failure to review the design carefully can result in the potential of unnecessary radiation dose to personnel or incorrect response from the system (including chipmunks).

5. Procedures

5.1 The [Liaison Physicist](#) shall describe the radiation issues and protection methods to the C-A RSC in a written description.

5.1.1 Chipmunk modifications shall be described by the Access Control Cognizant Engineer.

- 5.2 The C-A RSC shall review and make recommendations on the protection system with special attention to defining the classification of the area and the associated Access Control Systems [[see C-A-OPM 9.1.11](#)].
- 5.3 The C-A RSC shall assign a subcommittee to review the final access control system, and/or chipmunk design, upon its completion.
 - 5.3.1 The subcommittee for new secondary beams shall consist of at least two member of the C-A RSC including the Access Controls Physicist. The Liaison Physicist, Access Control Cognizant Engineer, or designee, shall act as advisors.
 - 5.3.2 The subcommittee for new primary beams shall consist of a representative from operations [when appropriate per RSC], a RCD representative [when appropriate per RSC], the C-A RSC Chairman, or designee, and at least two additional members of the C-A RSC including the Access Controls Physicist. The Liaison Physicist and Access Control Cognizant Engineer shall act as advisors.
 - 5.3.3 The subcommittee for new chipmunk designs or modifications shall consist of a representative from the ACG, RCD, RSC Chair, or designee, and the Chief Electrical Engineer, or designee.
- 5.4 The Liaison Physicist shall work with the C-A Access Control Cognizant Engineer, or designee, to complete the access control system design.
- 5.5 The Liaison Physicist shall present the access control system design to the subcommittee for approval.
- 5.6 The subcommittee shall recommend approval of the access control system, and /or chipmunk design, to the C-A RSC Chairman in writing.
- 5.7 Meeting minutes, or a memorandum describing the access control system or chipmunk design, as approved by the sub-committee, will be distributed to all RSC members. A full RSC review of the design shall be performed if a RSC member finds the recommended solution to be deficient.
- 5.8 The associated wiring diagram shall be reviewed by two members of the Access Control Group for verification that it is a proper representation of the approved access control, and/or chipmunk system design.
- 5.9 At the discretion of the Chair of the RSC, the procedures in [C-A-OPM 4.91](#), [C-A-OPM 4.92](#), [C-A-OPM 13.6.1](#) and [C-A-OPM 13.6.2](#), may satisfy the requirements of 5.4 through 5.8.

- 5.10 The design documentation shall be reviewed and be signed in conformance with the requirements of [C-A-OPM 4.91](#) and [C-A-OPM 13.6.1](#).
 - 5.10.1 Revisions to released design document shall be in accordance with [C-A-OPM 4.91](#), and [C-A-OPM 13.6.2](#).
 - 5.10.2 Temporary hardware changes/bypasses shall be in accordance with [C-A-OPM 4.92](#).
- 5.11 System validation shall be per [C-A-OPM 4.91](#), and/or [C-A-OPM 4.92](#).

6. Documentation

- 6.1 The minutes of the C-A RSC meeting.
- 6.2 The written recommendation for approval by the assigned sub-committee approved drawings, and/or approved PASS/ACS Temporary Change Request.

7. References

- 7.1 [C-A-OPM 9.1.11 Guideline for C-A Radiation Security System Classification and Application](#)
- 7.2 [C-A-OPM 4.91 Configuration Management Plan for the C-A Access Controls System](#)
- 7.3 [C-A-OPM 4.92 Control of Temporary Hardware Changes/Bypasses in the Particle Accelerator Safety System \(PASS\) and the Access Control System \(ACS\)](#)
- 7.4 [C-A-OPM 13.6.1, "Preparation & Issuance of Engineering Drawing/Specifications"](#).
- 7.5 [C-A-OPM 13.6.2 "Configuration Management"](#).

8. Attachments

None