ACCELERATOR DIVISION ES&H PROCEDURE

ADSP-10-0102

UNINTERLOCKED BEAM ENCLOSURE EQUIPMENT ACCESS HATCH ADMINISTRATIVE CONTROL LOCKOUT

RESPONSIBLE DEPARTMENT ES&H

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1.0 PURPOSE AND SCOPE

There are a number of beam enclosure equipment hatches which when opened allow the transfer of equipment to and from the enclosure. Personnel access is not permitted through equipment hatches, though hypothetically possible. In many cases equipment hatches also are filled with concrete blocks, poly beads, or other shielding material that is required for shielding purposes. These hatches are usually not interlocked by the Radiation Safety System or the Electrical Safety System. These hatches must be opened and closed in a controlled manner to prevent inadvertent personnel access to a beam enclosure while interlocked power supplies and/or beam is possible, and to prevent beam operation while the shielding from the hatch has been removed. The Fermilab Radiological Control Manual requires that these hatches be controlled with a written procedure. This procedure applies to these equipment hatches. This procedure does not apply to penetrations in shielding through which personnel access is impossible.

Many equipment access hatches also contain shielding materials such as polyethylene beads or concrete blocks. The shielding materials in these hatches must be controlled to ensure that dose rates outside the hatches remain within the limits of the Radiological Control Manual. It is the responsibility of the appropriate systems department to restore shielding materials which have been removed upon completion of work. It is the responsibility of the AD RSO or his designee to verify that the shielding is in place prior to locking up equipment access hatches.

2.0 INTRODUCTION

Accelerator Division hatches are secured with two padlocks. One of the padlocks is cored with an enclosure entry core, that is, the core that is used in the enclosure door locks. The keys to open enclosure doors are interlocked and are not available to unlock a hatch unless the RSS and ESS permits are disabled. The second lock is cored with a configuration control series, which is utilized exclusively by members of the AD Radiation Safety Group. The use of this second lock requires AD/ES&H involvement in opening hatches. The procedures below give the steps required to ensure that AD Radiation Safety Group controls over hatches that are not interlocked are maintained in a safe and effective manner.

3.0 CONFIGURATION CONTROL OF ENCLOSURES

3.1 Configuration control of an appropriate critical device to ensure that beam cannot inadvertently be transported through the affected enclosure(s) while a hatch is open must be performed prior to unlocking hatches to beam enclosure(s).

3.2 Exceptions to this requirement are at the discretion of the AD RSO or his designee, for example, the AP0 vault is controlled by a separate procedure, and for short durations

(e.g., within a shift) the option of locking up an interlocked enclosure key in the MCR RSO lockbox with an RSO padlock may be used by the AD RSO or his designee during the time a hatch is open to the affected enclosure.

3.3 The option of locking up an enclosure key is at the discretion of the AD RSO or designee, however the key must remain in the MCR RSO lockbox and the key must not leave the site.

3.4 The AD RSO or designee is responsible for performing the configuration control for the affected enclosure, except for the AP0 vault for which there is a separate procedure.

3.5 The AD RSO or designee is responsible for documenting the configuration control in the database established for this purpose. Include the RSO Lock number, the device locked out, the reason for the lockout, the conditions that must be met before removing the RSO lock from the device, and any additional clarifying information.

4.0 PROCEDURE TO UNLOCK EQUIPMENT HATCHES

4.1 Obtain the appropriate enclosure key from the MCR key tree and the configuration control key.

4.2 Unlock and remove the enclosure key cored padlock and configuration control cored padlock, and any chains from the hatch lock assembly. In general, leave the unlocked padlocks and chains (if any) in the immediate area unless directed otherwise by the AD RSO or designee. In some cases there is a risk of damage to the padlocks and chains from crane operations, possible loss of these items during long shutdowns, or they could be in the way.

5.0 PROCEDURE TO LOCK UP AN EQUIPMENT ACCESS HATCH

NOTE: Only the RSO or designee, or personnel as directed by the AD RSO or designee may secure equipment access hatches with configuration control padlocks and enclosure key cored padlocks

NOTE: Under some conditions, it may be desirable to secure an equipment access hatch without replacing shielding. For example, power testing of equipment may be necessary but no beam is to be run. In such a case, Configuration Control to prevent beam to the affected enclosure must be performed by the AD RSO or designee.

5.1 Normally the padlocks (and chains) for the hatch are left unlocked in the area of the hatch, unless directed otherwise by the AD RSO or designee.

5.2 Ensure by inspection that any shielding removed has been restored and if there is a hatch cover that it has been closed.

5.3 Install the chain(s) (if any), then the Configuration Control cored padlock and enclosure key cored padlock to secure the hatch.

5.4 Return the enclosure key to the MCR.

5.5 Inform the AD RSO or designee that the hatch has been restored to its normal configuration and has been locked.

5.6 The AD RSO or designee will also inspect the hatch at their discretion to ensure the requirements for removing the Configuration Control as documented in the configuration control database have been met before removing the RSO lock from the locked out device.

5.7 The AD RSO or designee will document the removal of the configuration control in the Configuration Control database.

6.0 Extra Divisional Distribution

None