

ACCELERATOR DIVISION ES&H PROCEDURE

ADSP-10-0103

RADIATION INTERLOCK MODIFICATION PROCEDURE

RESPONSIBLE DEPARTMENT ES&H

PREPARED BY *Gary Laster* DATE 9/5/13
AD Operational RSO

REVIEWED BY *C Wood* DATE 9/6/2013
AD Interlock Group Leader

REVIEWED BY *JL E...* DATE 9/6/13
AD ES&H Dept. Head

APPROVED BY *Robert L. Dillman* DATE 9-6-13
AD Head

REVISION NO. 0 REVISION ISSUE DATE _____

1.0 APPLICABILITY

1.1 This procedure applies to all established safety systems that are considered a Radiation Safety Interlock System (RSIS) as defined in the Fermilab Radiological Control Manual (FRCM) Chapter 10.

1.2 The requirements of this procedure apply to the AD RSO, AD Interlock Engineer, AD ES&H Department Head, and the AD Interlock Group.

2.0 PURPOSE OF THIS PROCEDURE

2.1 The purpose of this procedure is to provide instructions for how to request a modification to an existing and approved RSIS.

3.0 RESPONSIBILITIES

3.1 AD RSO

3.1.1 The AD RSO is responsible for initiating the request to modify an RSIS. The AD RSO must use the form: "Radiation Interlock Modification Request Form." See Attachment 1.

3.2 AD INTERLOCK ENGINEER

3.2.1 The AD Interlock Engineer is responsible for reviewing the request to modify an RSIS and to concur with the request by signature on the form.

3.3 AD ES&H DEPARTMENT HEAD

3.3.1 The AD ES&H Department Head is responsible for:

- a. Reviewing the request to modify an RSIS,
- b. Concur with the request by signature,
- c. Decide if an Unreviewed Safety Issue (USI) form needs to be filled out,

- d. Complete USI determination form and submit for review if required.

3.4 AD INTERLOCK GROUP

- 3.4.1 The AD Interlock Group is responsible for implementing the modifications as per the form, and for submitting FRCM Form no. 19 if necessary.

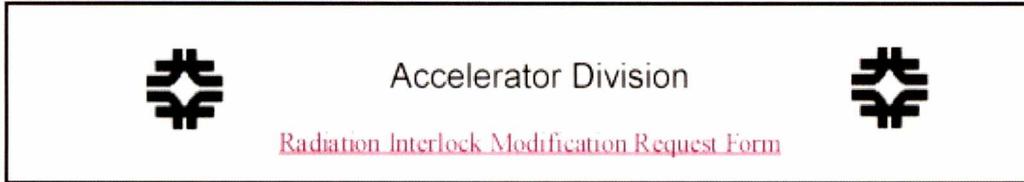
4.0 INITIATING A RADIATION INTERLOCK MODIFICATION REQUEST

- 4.1 The AD RSO initiates a request to modify an RSIS by accessing the interlock change request database within the "RSO" folder of the AD Radiation Safety Group shared area network drive. Access to the RSO folder is restricted to the AD RSOs and the AD SSO/ES&H Department Head.
- 4.2 The AD RSO enters the "proposed change or addition" information in the form text box. This information should provide specific instructions regarding the modification(s) needed.
- 4.3 The AD RSO enters the "reason for change or addition" in the form text box. This information should provide enough information to understand the reason for the change, and include additional pertinent information.
- 4.4 The AD RSO determines if "ES&H Section Approval Required" by typing "YES" or "NO" in the text box. See section 5.0 "ESH&Q Section Approval Required," for the review elements of this determination.
- 4.5 The AD RSO prints out the request form, signs the R.S.O. Approval signature line, and submits the form to the Interlock Engineer.
- 4.6 The Interlock Engineer reviews, signs, and submits the form to the AD ES&H Department Head.
- 4.7 The AD ES&H Department Head reviews, signs, and submits the form to the Interlock Group for implementation of the proposed modifications.

- 4.8 The Interlock Group completes the form for the "Installation, Testing, & Removal section by signature and date in the "Completed by" lines of this section.
- 4.9 The Interlock Group returns the completed form to the AD RSO for records retention.
- 5.0 ESH&Q SECTION APPROVAL REQUIRED DETERMINATION
- 5.1 RSIS designs are reviewed and approved by the ESH&Q Section. Design drawings, test procedures, logic diagrams and permit inputs are written by the Interlock Group and are submitted for review to the ESH&Q Section for all new RSISs.
- 5.2 Modification requests are reviewed by the AD RSO and a determination is made whether the modification request is minor or major.
- 5.3 Minor changes to an established RSIS do not fundamentally change how the RSIS operates. Minor changes include but are not limited to: additions or removals of radiation detectors, additions or removal of power supply inputs, additions or removals of magnet current windows, additions or removals of beam line extensions to the permit system.
- 5.4 If the AD RSO determines that the proposed modifications are minor, then the text box on the Radiation Interlock Modification Request Form for "ESH&Q Section Approval Required" must be completed as "NO," and FRCM Form no. 19 does not need to be completed as stated in FRCM Chapter 10.
- 5.5 Major changes to the RSIS include but are not limited to: fundamental changes to the design of the system, such as changes to the critical device designations, access controls, changes to the permit system that fundamentally change the design of the RSIS.
- 5.6 If the AD RSO determines that proposed modifications are major, then the text box on the Radiation interlock Modification request form for "ESH&Q Section Approval Required" must be completed as "YES," and FRCM Form no. 19 must also be completed by the Interlock Group as stated in FRCM Chapter 10.

- 5.7 The AD Interlock Group is responsible for submitting Form no.19 to the Fermilab ESH&Q section for review.
- 5.8 The AD Interlock Group will provide any additional documentation as needed to support the modification request, such as drawings, logic diagrams, or similar upon request of the ESH&Q section.
- 5.9 The AD Interlock Group will await the ESH&Q section's review and "Preliminary Approval, Final Approval, or Not Approved" determination as per Form no.19.
- 5.10 If the ESH&Q determination is Preliminary Approval or Final Approval, the AD Interlock Group will proceed with the modifications.
- 5.11 If the ESH&Q section's determination is Not Approved, the AD Interlock Group will discuss the Not Approved determination with the AD RSO, AD Interlock Engineer, and the AD ES&H Department Head. The AD RSO will re-assess the modification request.

ATTACHMENT 1 - EXAMPLE OF AD RADIATION INTERLOCK
MODIFICATION REQUEST FORM



Date of Request _____
Proposed Change or Addition _____

Reason for Change or Addition _____

Work Performed to Facilitate Request _____

Drawing # : _____
Modification to Drawings Completed ? Yes _____ No _____

Approvals: "ES&H Section Approval Required"

R.S.O. _____ Date: _____

Interlock Engineer: _____ Date: _____

ES&H Dept. Head: _____ Date: _____

Installation, Testing, & Removal:

Installation Completed by: _____ Date: _____

Removal Completed by: _____ Date: _____

Testing Completed by: _____ Date: _____

Return Completed Form to Accelerator Division RSO [Attachment 1]