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C-A OPERATIONS PROCEDURES MANUAL

2.11 Conduct of Operations for Accelerator Physicists and Systems Specialists

Text Pages 2 through 5

Attachments

Hand Processed Changes

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

P. Ingrassia, E. Lessard

2.11 Conduct of Operations for Accelerator Physicists and Systems Specialists

1. Purpose

To provide instructions to Accelerator Physicists and System Specialists concerning directly making changes to the state of the accelerator (performing a “study” as defined below).

Definitions: Two levels of study activity are defined

Dedicated Study or APEXperiment-- a study which explores new ways to configure parts of the accelerator. These studies are scheduled in advance by the Scheduling Physicist and announced to Users since the studies are usually not parasitic to the Physics Program. These studies require Accelerator Physicists and Systems Specialists to follow this procedure and to complete the “[Beam Experiment Proposal Form](#)”.

Study -- a study in which the Accelerator Physicist or System Specialist actively participates in the adjustment of machine parameters. Typical examples are calibrating BPMs or checking if a Tune Meter is working properly. These studies do not require notification of the Scheduling Physicist since these studies shall not impact the Physics program. These studies require Accelerator Physicists and Systems Specialists to follow this procedure, but they DO NOT complete the “[Beam Experiment Proposal Form](#)” unless the study is **intended** to generate beam loss.

2. Responsibilities

- 2.1 It is the responsibility of Accelerator Physicists and Systems Specialists to request permission from the on-duty Operations Coordinator (OC) prior to using the controls of the C-A Complex. It is the responsibility of the Accelerator Physicist or System Specialist to see that appropriate work planning is done prior to access into a High Radiation Area.
- 2.2 It is the responsibility of the on-duty Operations Coordinator to authorize use of the accelerator controls after he/she determines that the work will not exceed the appropriate accelerator safety envelope. The beginning and end of Dedicated Accelerator Studies shall be logged in the “Operations Journal”.
- 2.3 It is the responsibility of the Accelerator Physics Experiment (APEX) coordinator or designee to review all dedicated studies to determine if additional training, design review, formal safety review or written procedures are required.

3. Prerequisites

- 3.1 Permission by Operations Coordinator is required in order for Accelerator Physicists and Systems Specialists to make changes to the state of the accelerator.
 - 3.1.1 Accelerator Physicists and Systems Specialists shall be familiar with Sec. 2.3.2 and 2.3.2.1 of [C-A-OPM 2.1](#) and the lines of authority shown in attachment 8.1 of that OPM.
- 3.2 Permission is to be granted only to persons who have completed the appropriate training program.

4. Precautions

Accelerator Physicists or Systems Specialists, **may not** exercise control of the security system components at the MCR_2 control console.

5. Procedure

- 5.1 The Accelerator Physicist or Systems Specialist shall make the on-duty Operations Coordinator, or his designate, aware of any test or work plan that he wishes to execute at the controls of the accelerator.
 - 5.1.1 IF the test or work plan qualifies as a Dedicated Study, THEN the Accelerator Physicist or Systems Specialist shall complete the [Beam Experiment Proposal Form](#).
 - 5.1.2 Hazard analysis will be reviewed by a physicist designated by the Associate Chair for Accelerators.
 - 5.1.3 The APEX coordinator, or designee, shall review the form and give final approval for the experiment.
 - 5.1.4 IF the experiment involves Intentional Beam Loss, THEN the RSC chairperson, or designee, must approve the experiment as well.
- 5.2 The on-duty Operations Coordinator, or designee, will grant trained Systems Specialists or Accelerator Physicists access to the controls.
- 5.3 The MCR Group leader, or designee, (the on-duty Operations Coordinator), will verify that the proposed test or work plan is within the Safety Envelope of the C-A Complex by reviewing the **approved** [Beam Experiment Proposal Form](#).
 - 5.3.1 If there is no approved [Beam Experiment Proposal](#), THEN the experiment may not proceed.

5.4 IF the study qualifies as a Dedicated Study, THEN the APEX coordinator shall review the study to determine if additional training, design review, formal safety review or written procedures are required.

5.4.1 IF additional training, design review, formal safety review or written procedures are needed, THEN the APEX coordinator shall ensure these reviews or procedures are initiated by informing the Head of the C-A ESSHQ Division, or C-A ES&H Coordinator.

5.5 For a Dedicated Study

5.5.1 The APEX coordinator shall make an entry into the e-log for the appropriate accelerator:

- The study to be performed
- The study start and stop times
- The form “Safety Review for Dedicated Accelerator Studies” has been filled out.

5.7 Studies Involving Intentional Beam Loss

Warning:

Beam loss has implications for ground water activation. Every attempt must be made to restrict beam loss to the period of the study and short periods during setup.

5.7.1 Before conducting an experiment that involves INTENTIONAL beam loss

5.7.1.1 The experiment spokesperson will determine a means to account for the number of ions intentionally dumped during the study.

5.7.1.2 The experiment spokesperson fills out the [Beam Experiment Proposal Form](#).

5.7.1.3 The Radiation Safety Chairman, or designee, approves and electronically signs the [Beam Experiment Proposal Form](#).

5.7.1.4 The APEX coordinator permits the study to take place after the RSC representative electronically signs the [Beam Experiment Proposal Form](#), and any special instructions from the RSC chairperson have been followed.

5.7.2 After the Experiment

5.7.2.1 The experiment spokesperson shall record the number of ions/protons dumped during the study on the [Beam Experiment Proposal Form](#) and shall electronically sign and date the form.

5.7.3 Repeating the Experiment

5.7.3.1 Repeating the experiment requires the experiment spokesperson to fill out a new [Beam Experiment Proposal Form](#) and get RSC approval if the conditions of the [experiment](#) are changed from the original proposal.

6. **Documentation**

6.1 Accelerator Physicists, or Systems Specialists, will summarize their work in the appropriate accelerator e-log.

7. **References**

7.1 [C-A-OPM 2.1 “C-A Operation and Organization & Administration”](#)

8. **Attachments**

8.1 [Beam Experiment Proposal Form](#)

Attachment 8.1

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Beam Experiment Proposal Form

BE Number Beam Experiment Title: Spokesperson(s): Status:

Team:

Experiment Goal:

Benefits: (performance, operations, upgrade, general accelerator physics)

Experiment Description:

Resources:

Instrumentation

Applications

Time

Personnel

Does this study involve INTENTIONAL Beam loss? Yes No

Plan for Data Analysis:

<http://www.c-ad.bnl.gov/beamex/scripts/beform.pl> (1 of 2) 10/23/2006 1:20:12 PM

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Results:

Intentional Beam Loss Required Fields:

Affected Machine:

Intended Beam Loss Point(s):

Limit on the number of dumped particles:

Special Instructions/Requirements from the RSC Chairperson:

RSC Chairperson:

RSC Date:

Number of particles ACTUALLY Dumped:

Responsible Physicist:

Date:

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