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C-A OPERATIONS PROCEDURES MANUAL

5.29 AGS, BOOSTER Ring, and Beam Transport Shutdown

Text Pages 2 through 4

Hand Processed Changes

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

P. Ingrassia

5.29 AGS, Booster Ring, and Beam Transport Shutdown

1. Purpose

To provide instructions to MCR operators to shut down the AGS and Booster ring equipment. This procedure will be followed at the end of a scheduled AGS running period or prior to a scheduled AGS Maintenance Period.

2. Responsibilities

2.1 The MCR operators are responsible for the execution of this procedure at the end of an AGS running period or prior to a scheduled AGS Maintenance Period.

2.2 The Head of Operations will inform the MCR when to begin the shutdown.

3. Prerequisites

3.1 LOTO Training

4. Precautions

Computer controlled equipment that is secured by opening an energy disconnect switch should be turned off either via the computer or locally before opening the switch.

5. Procedures

For each of the following tasks, carry out each step and check the item off on the attached checklist under the MAIN CONTROL ROOM area:

5.1 Close the AGS Beam stops.

5.2 Cancel ASEB clearances” and maintain primary beam enclosures in the Access Prohibited state unless instructed otherwise.

5.3 Notify the Power Room to open the new Siemens/Westinghouse 95 switches and contact the MMPS operator to verify that they are open.

5.4 LOTO

5.4.1 The C-A ([C-A-OPM 2.6.1](#) attachments a OR b)

5.4.2 The Booster (OPM 2.6.1 attachments c OR d)

5.4.3 The AGS Main Magnet Power Supply ([C-A-OPM 2.6.6](#))

5.4.4 The Booster Main Magnet Power Supply ([C-A-OPM 2.6.3](#))

- 5.5 IF appropriate, THEN notify Mechanical Services (Pump Room) when equipment is turned off.
- 5.6 Execute Steps 5.6.1 through 5.6.6 DURING an AGS Shutdown Period.
- 5.6.1 Lock “Security /ACS/PASS” keys in MCR key locker.
- 5.6.2 Turn off all non essential MCR equipment.
- 5.6.3 Request that the ESHQ Division Head notify BNL Police when MCR shall remain un-staffed.
- 5.6.4 LOTO equipment listed in C-A-OPM 2.6.4 attachments.
- 5.6.5 After step 5.4 has been carried out (using [C-A OPM 2.6.1](#) attachments b and d), and after an HP survey of the AGS ring has been completed, THEN the AGS Ring may be placed on “Restricted Access” with the concurrence of the Maintenance Supervisor.
- 5.6.6 The OC shall ensure Radiation Safety LOTO is applied to the key switches.
- In the terminal room above the MCR for the A, B, C, and D line clearances, and
 - In Building 914 for the Tandem to Booster (TTB) and Linac to Booster (LTB) beam stops.
- 5.7 Idle Beam Transport/Beam Lines
- 5.7.1 IF during accelerator operation, some beam lines (A,B,C,D,V) are expected to remain idle for four or more weeks, THEN the MCR Group Leader or Deputy Group Leader shall contact the appropriate Liaison Physicist and ask them to apply RS LOTO to disable the beam line.
- 5.7.2 IF during accelerator operation, some beam transport lines (LtB, U) are expected to remain idle for four or more weeks, THEN the MCR Group Leader or Deputy Group Leader shall contact the appropriate Liaison Physicist and ask them to apply RS LOTO to disable the beam transport line.

6. Documentation

6.1 LOTO Checklists from C-A-OPM [2.6.1](#), [2.6.3](#), [2.6.4](#), [2.6.6](#).

6.2 [C-A-OPM 9.1.16.b RS LOTO Log Sheet](#)”

7. References

7.1 [C-A-OPM 2.6.1, "Lockout/Tagout for the AGS and Booster Rings, During Accelerator Operations"](#).

7.2 [C-A-OPM 2.6.3, "Lockout/Tagout for the Booster Main Magnet Power Supply"](#).

7.3 [C-A-OPM 2.6.4, "Lockout/Tagout for the AGS and Booster Rings for Shutdown Periods"](#).

7.4 [C-A-OPM 2.6.6, "Lockout/Tagout for the AGS Main Magnet Power Supply"](#).

7.5 [C-A-OPM ATT 9.1.16.b "RS LOTO Log Sheet"](#)

8. Attachments

None