

2.6.6 Procedure for Lockout/Tagout of the AGS (Siemens) Main Magnet Power Supply

1. Purpose

This procedure instructs C-A MCR Operators, Collider-Accelerator Support (CAS), and Power Room Technicians how to perform group Lockout/Tagout of the AGS Main Magnet Power Supply (AMMPS) and the 95S Switches.

2. Responsibilities

- 2.1 C-A MCR Operators or CAS are responsible for performing steps 19-21 of the checklist and for verifying (step 12 of the checklist), that the 95S Switches are open.
- 2.2 The AMMPS operator is responsible for disconnecting the power supply from the AGS Main Magnet, performing steps 2-18 of the checklist and giving the completed checklists to the MCR Operator, or CAS for filing in the MCR.

3. Prerequisites

- 3.1 Siemens Power Room Operators are familiar with the AMMPS KIRK key interlock system.
- 3.2 One Red Tag, for the AMMPS Lock Box.
- 3.3 One Safety Lock, for the AMMPS Lock Box.
- 3.4 Blank versions for the checklist for this procedure ([C-A-OPM-ATT. 2.6.6.a](#)) are available at the Siemens Power Room.

4. Precautions

- 4.1 In order to minimize the hazards to operators and equipment when applying the LOTO, the C-A high-field powered backleg windings, and the AMMPS active filter shall be LOTO before the switches are operated.
- 4.2 The Responsible Authorization Person (RAP), (MCR Operator, or CAS), shall assume the role of SWV but need not be present while steps 2-18 of the checklist are performed.
- 4.3 To “Hi-pot” the ring magnets while the AMMPS is LOTO, the LOTO may be defeated by AMMPS personnel only if
 - 4.3.1 The Chief Electrical Engineer, and the Maintenance Coordinator, or (during operational periods) the Operations Coordinator (OC) agree.

- 4.3.2 The Maintenance Coordinator, or Operations Coordinator, gives the final permission to “Hi-pot” after the ring enclosure has been swept free of personnel and locked.
- 4.3.3 After conclusion of “Hi-potting” the Chief Electrical Engineer, or designee, the Maintenance Coordinator, or designee, shall verify that the 95S Switches are restored to the condition they were in before the “Hi-pot”.

Note:

Execute this procedure, during operational periods, before personnel enter the AGS Ring tunnel (Bldg. 913). During non operational periods, AMMPS personnel may LOTO the AMMPS using a procedure approved by the Chief Electrical Engineer and the Maintenance Coordinator.

This procedure shall be used in conjunction with [C-A-OPM 2.6.1](#) or [C-A-OPM 2.6.2](#) or [C-A-OPM 2.6.4](#). IF the special conditions of C-A-OPM 2.6.2 or [C-A-OPM 3.11](#) are in effect, THEN the Operations Coordinator (OC) shall choose a RAP and SWV to install or remove the group LOTO on the AMMPS.

5. **Procedure**

- 5.1 The Operations Coordinator shall choose a Responsible Authorized Person (RAP) to verify the 95S Switches are open, the Main Magnet Bus is grounded and LOTO the two MCR keys in the AMMPS lock box.

Note:

All * items on [2.6.1.a \(AGS Ring Lockout-Tagout Checklist\)](#) must be LOTO before performing step 10 of the checklist: [2.6.6.a](#).

When removing LOTO the * items of [2.6.1.a](#) may NOT have their LOTO removed before step 10 of the checklist [2.6.6.a](#) is performed.

- 5.2 Execute checklist given by [C-A-OPM-ATT 2.6.6.a](#) with the Siemens Operator initialing steps 2-18.
 - 5.2.1 The RAP shall initial steps 19-21.
- 5.3 When checklist is completed, MCR Operators, or CAS shall file it in the C-A MCR LOTO Book.

6. **Documentation**

- 6.1 Checklist [C-A-OPM-ATT 2.6.6.a](#) filled out and filed in the C-A MCR LOTO Book.

7. References

- 7.1 [C-A-OPM 2.6.1, "LOTO for the AGS and Booster Rings, During Accelerator Operation"](#).
- 7.2 [C-A-OPM 2.6.2, "Partial LOTO for the AGS and Booster Rings, During Accelerator Operation Under Control Access Conditions"](#).
- 7.3 [C-A-OPM 2.6.4, "LOTO for the AGS and Booster Rings for Shutdown Periods"](#).
- 7.4 [C-A-OPM 3.11, "Policy for Access to All Primary Beam Enclosures for Abnormal Situation Assessments"](#).

8. Attachments

- 8.1 [C-A-OPM-ATT 2.6.6.a, "AGS MMPS LOTO Checklist"](#).
- 8.2 Siemens Schematic Diagram 95S Switch Kirk Lock (D04-E-RD1011).