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C-A OPERATIONS PROCEDURES MANUAL

4.44.5 Procedure to Test AGS PASS Operation After Software Download

Text Pages 2 through 4

Attachments

Hand Processed Changes

<u>HPC No.</u>	<u>Date</u>	<u>Page Nos.</u>	<u>Initials</u>
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Approved: \_\_\_\_\_ *Signature on File* \_\_\_\_\_  
Collider-Accelerator Department Chairman Date

N. Williams

## 1. **Purpose**

To certify that the AGS PASS system is operational after a download of certified software, to either the PLC-5 or SLC-500 Access Control Systems. This procedure will test if opening a gate while in beam enable mode shuts off critical devices. The operation of the crash cord/button must be sensed by PLC/SLC.

### 1.1 **Definitions**

*Download* – When a software program is copied from a computer to a Programmable Controller Processor.

*Upload* – When a software program is copied from a Programmable Controller Processor computer to a computer.

*PLC-5* – Programmable Controller technology associated with PASS division B.

*SLC-500* – Programmable Controller technology associated with PASS division A.

*RS LOTO* – Radiation Safety Lockout Tagout.

*LTB* – Linac to Booster.

*TTB* - Tandem to Booster.

## 2. **Responsibilities**

None

## 3. **Prerequisites**

Each member of the ACS team shall be trained and successfully tested on Access Security System procedures in Chapter 4 of the C-A OPM, available online at [http://www.cadops.bnl.gov/AGS/Accel/SND/OPM/opm\\_chapter\\_4.htm](http://www.cadops.bnl.gov/AGS/Accel/SND/OPM/opm_chapter_4.htm).

## 4. **Precautions**

4.1 Proper Radiation Safety Lockout/Tagout (RSLOTO) procedures as defined in BNL ES&H Standard 1.5.1, and [C-A-OPM 9.1.16](#) must be followed.

## 5. Procedures

- 5.1 You must perform RS LOTO by performing the following two steps:
- If you are certifying software in peer's 3, 23 or 25, then you must RS LOTO the Booster Extraction Key Switch above MCR (located on the 21 board), in the AGS Security System (see Photo 1).
  - Place the key in the Booster Extraction lockbox as shown in Photo 2.
- 5.2 Select a zone in which the gate will be opened from the inside of the zone (while in no access mode).
- If peer 3 has been downloaded, proceed to either the V1 gate area, the Muon ring, or V1GE3.
  - If peer 23 has been downloaded, proceed to Uup.
  - If peer 25 has been downloaded, proceed to Udown
- 5.3 The zone to be checked may be swept by ACS personnel since it will be re-swept later by MCR personnel.
- 5.4 Proceed to sweep all zones for affected AGS PLC or SLC Peer.
- 5.5 The MCR operator shall reset the area after locking security personnel inside. The MCR operator shall return affected area keys to the MCR key trees.
- 5.6 The MCR operator shall bring the AGS PLC and SLC peer to beam enable mode (NA) with security personnel locked inside the selected zone.
- 5.7 After the 90-second alarm timeout, the MCR shall activate critical devices controlled by the PLC or SLC. The critical devices for each system are as listed in the table that follows.

<b>Peer 3A/3B</b>	<b>Peer 23A/23B</b>	<b>Peer 25A/25B</b>
<b>V1D1, V1D2</b>	<b>BF6, DH23</b>	<b>UD1-2, H10</b>

- 5.8 Security personnel shall now open the gate from the inside dropping the sweep and causing the affected critical devices to go off.
- 5.9 The MCR shall verify that the mode changes to safe and the critical devices turn off.

- 5.10 The MCR shall change the mode to **Controlled Access**.
- 5.11 Security personnel shall now operate the crash actuator inside the affected zone.
- 5.12 MCR shall now verify that the crash occurred by viewing the PanelView (a mode change occurred from Controlled Access to Safe Access).
- 5.13 Security personnel shall now reset the crash actuator. This completes the test procedure.
- 5.14 Proceed to remove the RS LOTO.
- 5.15 You must log all actions in the ACS Trouble Log.

**6. Documentation**

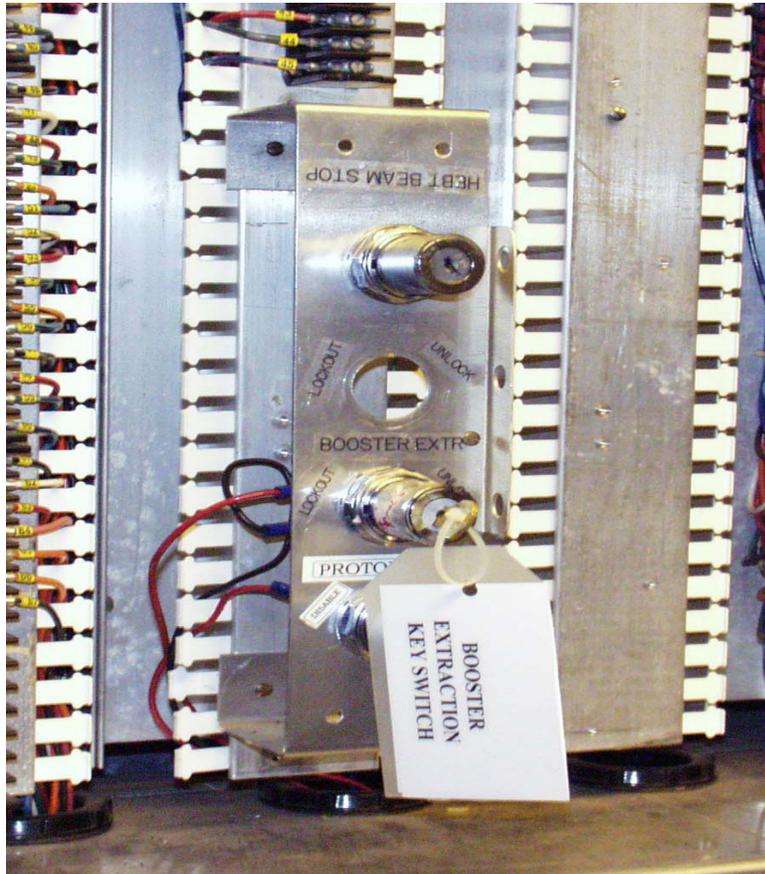
ACS Trouble Log.

**7. References**

- 7.1 BNL ES&H Standard 1.5.1.
- 7.2 [C-A-OPM 1.1 “Authorization”](#).
- 7.3 [C-A-OPM 9.1.16 “Lockout/Tagout for Radiation Safety \(RS LOTO\)”](#).

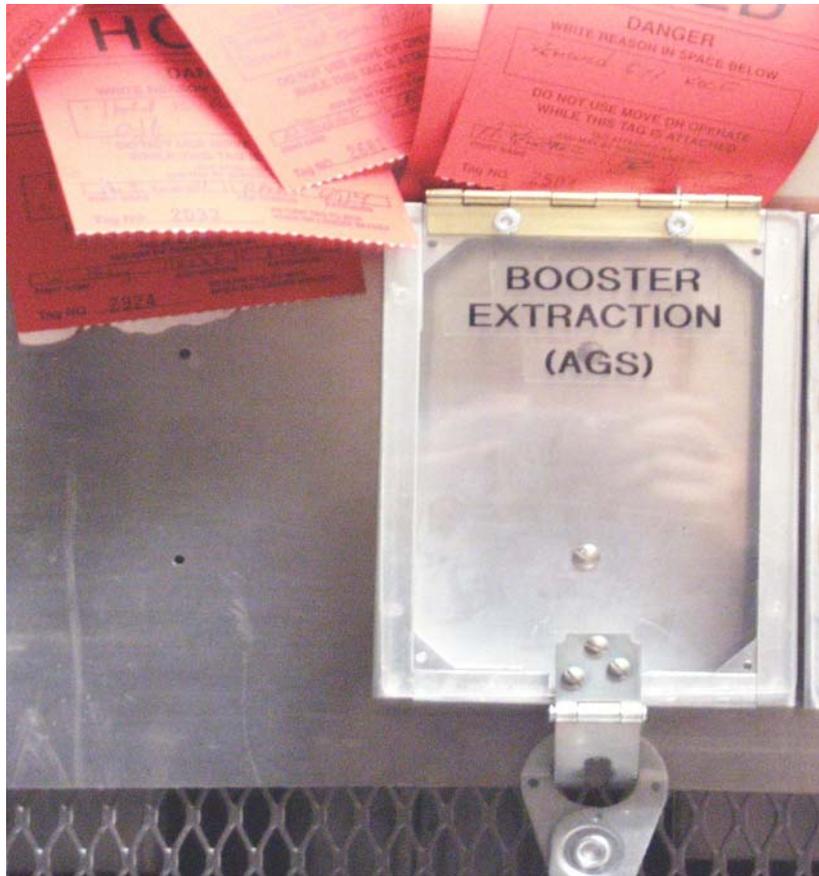
**8. Attachments**

- 8.1 Booster Extraction Keyswitch.
- 8.2 LOTO Box.



Attachment 8.1

This Key Should be Locked Out.



Attachment 8.2

Lockout Booster Extraction Key in This Box Located Above MCR.