

C-A OPERATIONS PROCEDURES MANUAL

4.44 Operation of PASS

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4.44 Operation of PASS

1. Purpose

1.1 This procedure specifies the actions to be used by MCR staff and Collider-Accelerator Support (CAS) personnel when operating the Particle Accelerator Safety System (PASS).

1.2 Introduction

1.2.1 The operator interfaces are built around Allen Bradley touchscreen displays that use standard menu choices and icons to facilitate PASS state changes. Four PASS PanelView touchscreen displays can be found in the MCR. The AGS PanelView is at MCR_2-3. The RHIC PanelView is at MCR_2-4, The NSRL PanelView is at MCR_2-5. The Remote Access PanelView at MCR_7, by design, has limited functionality. Two PanelView 550s found at MCR_2-5, are to be used only by the Access Control Group (ACG) experts, or by Operators, only under the direction of ACG personnel.

1.2.2 Buttons are used to send commands and are represented by rectangular icons with raised borders.

1.2.3 Dark blue buttons are used to change display pages and navigate through the menus.

1.2.4 Indicators report information and are represented by rectangular icons with “slightly” raised borders or “slightly” depressed borders. Indicators can take on more than two values, as evidenced by changes in their labels and colors.

1.2.5 The menu hierarchy has Operations, Accelerator Access, Interruptions, Maintenance, ODH (RHIC) and PASS Testing at the highest level.

- Selecting "Operations" gives the operator the option to change modes.
- Selecting Accelerator Access gives the operator the option to grant access to an enclosure.
- Selecting Interruptions, gives the operator the option to determine why a critical device does not have permission to be energized.
- The RHIC PanelView adds the ODH/GAS option to the hierarchy. Selecting ODH/GAS gives the operator the option to determine the state of the fans and the mode of the enclosure when an ODH/GAS alarm is received.
- PASS Testing and Maintenance are designed for ACG expert use.

- 1.2.6 In the event Beam Permit (NO Access) is lost, the AGS PanelView displays a red square adjacent to the button(s) that should be pushed in order to locate the problem(s). The RHIC PanelView will generate an audible and visual alarm.
- 1.2.7 To change the state of a sweep zone (SAFE ACCESS, CONTROLLED ACCESS, NO ACCESS, EXPERIMENTER ACCESS), the MODE PERMIT button above the PanelView must be depressed while the state selection is made.
- 1.2.8 To enter a gate under controlled access, an operator in the MCR must depress the PanelView simultaneous release button for that gate, while the person at the gate turns the Controlled Access (CA) key in the keyswitch, or else the sweep will be lost. A buzzer will sound at a gate whenever an operator in the MCR pushes the simultaneous release button for that gate. Each access gate has its own simultaneous release button that can be found on the PanelView under the ACCELERATOR_ACCESS menu.
- 1.2.9 Some special rules that are applicable for the V-target zone:
 - 1.2.9.1 The V target gate is unlike all the others in that it may only be entered in Controlled or Safe Access, both which require the Controlled Access (CA) key and simultaneous release.
 - 1.2.9.2 The V target zone sweep is unlike the sweep for other zones in that the start and end of sweep are OUTSIDE the gate (VTGE1) that bounds the zone. Also, the sweeper may exit the enclosure without waiting for the simultaneous release.
 - 1.2.9.3 Opening V target Gate while the V Primary zone is in Restricted Access will cause the sweep to be lost in the V target zone.
- 1.2.10 U downstream key tree is not satisfied until U upstream key tree key tree is satisfied.
- 1.2.11 Gate UGI1 separating U upstream and U downstream is not intended for access to U upstream from U downstream.
- 1.2.12 EVERYONE who enters a PASS controlled gate in CONTROLLED ACCESS MUST have a Controlled Access key that was signed out from the MCR. The CA key must be returned to the MCR after the access is completed. Operators/CAS performing sweeps may take credit for carrying the S/R key instead of the CA key.

1.3 Definitions

- 1.3.1 *"A or B" Division* - The PASS system consists of two fully redundant and independent safety systems comprised of Programmable Logic Controllers (PLCs). They are termed the "A" and the "B" Divisions. "Division" information is presented in the Maintenance, and PASS Testing branches of the Operator interface.
- 1.3.2 *Access Prohibited* (Beam Permit or NO ACCESS [NA])- a primary area is said to be in the Access Prohibited state whenever the Beam Enabled State is established. During Access Prohibited, the PASS system disables Controlled Access (CA)-key access through gates into the primary area. The interface denotes this state as NO ACCESS in the Operations menu.
- 1.3.3 *Checkpoint or Check station or Reset Station* – a series of pre-designated checkpoints that have been established in primary areas in order to conduct a thorough sweep of the area.
- 1.3.4 *Chipmunk* - an area radiation monitor that measures dose equivalent rate from neutrons and gamma radiation. The Chipmunk is an active fail-safe device used in occupied or potentially occupied areas. Once a pre-set trip radiation level is reached, the Chipmunk signals an interlock and causes protective action by a critical device. Chipmunks are designated by PASS using the following notation: C2, C5, C34, C23, etc.
- 1.3.5 *Controlled Access (CA)* - entry to primary areas under Controlled Access means that personnel entries and exits are counted by a gate-watch. The entrant must sign a log sheet when entering and exiting.
- 1.3.6 *CRASH or SAFE (SA)* – whenever the critical devices are called upon to prevent beam into a primary area, the PASS designates that area as SAFE. Critical devices may be activated/de-activated by operators to make an area safe in a controlled fashion, or an area may be SAFED by the PASS itself. For example, PASS will SAFE a primary area whenever a gate is detected as open, while an area is in Beam Permit (No Access) or when a Chipmunk radiation monitor indicates radiation above a pre-set interlock level. This state is also reached if a Crash cord is pulled or Crash button is pushed in a primary beam enclosure. SAFE is also initiated if an Oxygen Deficiency Hazard exists. Access into a SAFE zone is by key (CA or S/R) and simultaneous release from an MCR PanelView.
- 1.3.7 *Critical Device* - a device such as a beam stop that is inserted to prevent beam from entering a primary area. Critical devices are designated by the

PASS using the following notation: Beam Stop 1; UD1&2 AC, UD1&2 DC; V1D1; V1D2; etc. After BEAM PERMIT (No Access) is established for an area, ninety seconds must elapse before the *Critical Device* for that area can be enabled.

- 1.3.8 *Gate* - a barrier into a primary area that may also be used for access and egress. As a minimum, gates are locked at all times. Gates are designated by the PASS using the following notation: UGE1, UGE2, UGI1, etc. Note: GE indicates entry gate, GI indicates interior gate, GS indicates sectionalizing gate (RHIC), ED indicates Exit Door, EL indicates Exit Ladder (RHIC) and MD indicates Monitored Door (RHIC).
- 1.3.9 *Key Captured* - six sets of keys must be captured in the PASS key tree in the MCR in order to Permit Beam in the three **AGS** areas. The Controlled Access keys are EB(006) [Uup], EB(005)[Udn], and EB(003) [V1 & MuSR]. The Sweep/Reset keys are EB(007) [Uup], EB(004) [Udn], EB(002) [V1 & MuSR]. The Sweep/Reset keys must be used to perform sweeps and reset gates, and the Controlled Access keys must be used to unlock a gate's electric strike in order to make an entry under Controlled Access or SAFE Access.

Ten sets of keys must be captured in the PASS key tree in the MCR and other buildings in order to Permit Beam in the three **RHIC** areas. The Controlled Access keys are EB(012) [W,X,Y], EB(010)[Rf], and EB(014) [RHIC]. The Sweep/Reset keys are EB(013) [W,X,Y], EB(011) [Rf], EB(015) [RHIC]. The Sweep/Reset keys must be used to perform sweeps and reset gates, and the Controlled Access keys must be used to unlock a gate's electric strike in order to make an entry under Controlled Access or SAFE Access. The RHIC Rf Transfer Switch key EB(016) must also be captured to run the RHIC Rf. Four key trees containing CA keys are located at STAR, Phenix, Phobos, and Brahms.

Seven sets of keys must be captured in the PASS key tree in the MCR and building 958 in order to Permit Beam in the three **NSRL** areas. The Controlled Access keys are EB(020) [experiment area], EB(022)[transport line], and EB(024) [stub tunnel]. The Sweep/Reset keys are EB(021) [experiment area], EB(023) [transport line], EB(025) [stub tunnel]. The Sweep/Reset keys must be used to perform sweeps and reset gates, and the Controlled Access keys must be used to unlock a gate's electric strike in order to make an entry under Controlled Access or SAFE Access. The seventh set is the set of Controlled Access keys remotely located in building 958 outside gate BGE1 (experimental area)

- 1.3.10 *Mode / State* - a mode is the access status of a particular primary area or zone. Allowed states for PASS are Crash (SA), Restricted Access (RA), Controlled Access (CA), Beam Permit (No Access -- NA), and Experimenter Access (XA) particular to the RHIC.
- 1.3.11 *Oxygen Deficiency Hazard (ODH)* - as a complete safety system, PASS reports the displacement of oxygen by cryogenics in the RHIC tunnel and automatically turns on fans if an ODH is detected. IF an ODH condition exists THEN Operators shall follow [C-A-OPM 3.15 "Response to Low Oxygen Alarm in Class "0" and "1" Areas"](#). ODH is not implemented in the AGS portion (Uup, Udn, V1 + Muon Storage Ring) of PASS.
- 1.3.12 *PASS* - Particle Accelerator Safety System.
- 1.3.13 *Restricted Access (RA)* - an access allowed state for the primary area in which trained persons with "zero" keys or PASS RHIC Restricted Access Cards may enter and exit any primary gate at will.
- 1.3.14 *Sweep* - a clearing of personnel from a primary area by MCR Operators or CAS technicians according to written procedure.
- 1.3.14.1 Sweeps shall be performed in CA (or XA in RHIC) only
 - 1.3.14.2 IF a gate that is part of a zone's perimeter is opened during a sweep THEN the sweep is lost.
 - 1.3.14.3 Gate resets are not required to start or end a sweep
 - 1.3.14.4 Sweeps are performed by following a prescribed sequence. The start and end of sweep check station is inside the zone being swept.
 - 1.3.14.5 Uup must be swept before Udn.
 - 1.3.14.6 Monitored Doors (RHIC), in a given zone, must be reset before a sweep is begun.
- 1.3.15 *X 7400* - (Extension) 7400 is the PASS phone number in the MCR. Persons requiring simultaneous release to enter or exit a gate must call x7400 for assistance.
- 1.3.16 *Remote Controlled Access* - is a means of allowing Controlled Access to an enclosure where the gate watchstander is stationed remotely (MCR). Persons may enter only after signing the gate log sheet and obtaining a CA key from the MCR.

1.3.17 *Resets* –

- 1.3.17.1 Gates are reset either locally or remotely. Local resets are performed on non-remote-access gates using the Sweep Reset key. Remote resets are performed on remote-access gates using the Sweep Reset (S/R) key inserted in the RESET keyswitch on the appropriate key tree.
- 1.3.17.2 Resets are performed in CA (and XA at RHIC) state only.

1.3.18 *Gate Transits*

- 1.3.18.1 In CA, one may pass through a gate (transit) when a simultaneous release is given from the MCR, otherwise the sweep will be lost.
- 1.3.18.2 In RA the sweep will be preserved if no perimeter gate for that zone is opened.
- 1.3.18.3 Simultaneous release is valid while the operator in the MCR holds the button on the PanelView. There is no timer to extend this function.
- 1.3.18.4 Gate UED1 is an exit gate only for Udownstream.
- 1.3.18.5 Opening gate UGI1 will cause the sweep to be lost both in Up and Udn zones.
- 1.3.18.6 In RHIC, transits may be made through sectionalizing gates (GS) if the sweep is good in each zone on opposite sides of the gate and both zones on opposite sides of the gate are in CA. A simultaneous release from the RHIC PanelView in MCR is also required. Transits made under these conditions will not require the zones to be searched after an access.

Note 1:

3GI1 and 3GS1 are interchanged as compared to the standard configuration.

- 1.3.19 *Experimenter Access (XA)* is a mode only available on the RHIC Panel View. XA sets an interaction region (IR) to Restricted Access while setting the adjacent accelerator zones to Controlled Access.
- 1.3.20 *Tokens:* entrants to PASS enclosures are not required to give the gate watch a token, (a Lab ID card or a blue card showing proof of Rad Worker I training). Entrants shall carry the CA key, which will serve as the token.
- 1.3.21 *PASS Alarms:* PASS generates alarms, (ODH, flammable gas, door open, communication failure) and displays them on the RHIC PanelView.

2. Responsibilities

- 2.1 MCR Operators, Operations Coordinators, Collider Accelerator Support (CAS) Technicians are responsible for the execution of this procedure.
- 2.2 When granting access to Primary Beam Enclosures, the personnel in paragraph 2.1 are required to fill out the C-A Gate Security Log Sheet form ([C-A OPM ATT. 4.1.a](#)) and follow the practices set forth in [C-A-OPM 4.1 “C-A Complex Access Control Procedures for Primary Beam Enclosures”](#).
- 2.3 Each entrant during Controlled Access is responsible for obtaining and using a CA key.
 - 2.3.1 MCR/CAS shall provide CA keys to persons who come to the MCR before/during RCA.
 - 2.3.2 MCR/CAS may provide a number of keys at the gate, during an access monitored by a local gate watch, if they are informed in advance of the number of keys required.

3. Prerequisites

- 3.1 Persons that will be identified by the IRIS scanner in order to access ~~NSRL~~ must be scanned into the database before they attempt to make their first access.

4. Precautions

- 4.1 Access into a beam enclosure is to be performed according to [C-A-OPM 4.1 “C-A Complex Access Control Procedures for Primary Beam Enclosures”](#). This procedure (C-A OPM 4.44) documents the features of the PASS that facilitate accesses and only details the PASS steps required to make a Remote Controlled Access.
- 4.2 Remote Controlled Access (RCA) is limited to A MAXIMUM OF FOUR (4) GATES OPENED SIMULTANEOUSLY ~~– in one “machine” (RHIC vs. NSRL).~~
- 4.3 ~~When “GS” gate transits are operational (paragraph 1.3.16.5), THEN~~ RCA necessarily permits entrants to enter one through RHIC gate and exit from another RHIC gate in a different zone.

5. Procedure

- 5.1 Procedures executed from the MCR using the PASS Operator Interface.

Note 12:

Operators shall pay strict attention to labels that appear on push-buttons and indicators.

Note 23:

Changing states (CA, RA, etc.) **REQUIRES** that the Operator depress and hold the button for the desired state on the Panel View and then momentarily depress the Permit Option. Select push-button, on the panel above the Panel View, **WHENEVER** a state is selected.

Note 34:

From the Controlled Access (CA) mode, any other mode can be selected.

5.1.1 To Change the state (mode) of a beam enclosure:

5.1.1.1 Determine the zone from the Operations/Access Mode menu(s) where the mode change is to be made.

5.1.1.1.1 Use the Operations Menu on the AGS PanelView to make mode changes for individual zones in the AGS.

5.1.1.1.2 Use the Access/Modes Menu on the RHIC PanelView to make mode changes for individual zones in the RHIC.

5.1.1.2 Determine the state required.

5.1.1.3 IF BEAM PERMIT (NO ACCESS) is required, THEN

5.1.1.3.1 Verify that all Sweep/Reset and Controlled Access Keys are captured (no green lights for the Appropriate Key Trees).

5.1.1.3.2 Push the pushbutton for the required state on the PanelView display.

5.1.1.3.3 Depress and release the Mode Permit Push-button above the PanelView.

5.1.1.3.4 Confirm your choice by observing command (pushbutton) and readback (indicator) agreement.

5.1.1.4 IF you have problems selecting BEAM PERMIT THEN determine what may be wrong by:

5.1.1.4.1 Selecting and pushing Main Menu button.

5.1.1.4.2 Selecting the Interruptions pushbutton.

5.1.1.4.3 Selecting the subsystem(s) suspected of giving problems from the subsystem buttons in the Interruptions Menu.

5.1.1.4.4 Finding the problem in a submenu and correcting it or resetting it.

5.1.1.5 IF a zone is in the BEAM PERMIT (no access) state, AND you want to change state, THEN,

5.1.1.5.1 IF the critical devices for the area being switched to Controlled Access are on, THEN turn off critical devices Or else a CRASH will result.

5.1.1.5.2 Press the required option on the PanelView display.

5.1.1.5.3 Momentarily depress the Mode Permit Push-button above the PanelView.

5.1.1.5.4 Confirm your choice by observing command (pushbutton) and readback (indicator) agreement. IF a zone's Status indicator displays SA (SAFE MODE) THEN you must restart the option selection process with the RESTRICTED ACCESS state.

5.1.1.6 IF you want to select any other mode THEN,

5.1.1.6.1 Select (Operations/Access & Zone menus) the zone where you want to make the mode change.

5.1.1.6.2 Press and hold the mode (RA, SA, CA, XA) button on the PanelView.

5.1.1.6.3 Press and release the mode change “permit” button above the PanelView.

5.1.1.6.4 Release the mode button on the PanelView.

5.1.2 To open a primary gate under Controlled Access conditions (local gate watch):

Note 5:

The Operations Coordinator is authorized to permit a *locally controlled* Controlled Access at any PASS monitored gate including Remote Access gates.

5.1.2.1 Select Accelerator Access from the PanelView Main Menu.

Note 6:

An Operator in the MCR MUST hold the appropriate PanelView gate button for the duration of an individual(s) entry or exit.

5.1.2.2 Select the zone you want to enter from the Accelerator Access menu.

5.1.2.3 IF the primary area containing the gate you want to open is in Beam Permit, THEN follow paragraph 5.1.1.5 in order to change the state from Beam Permit (No Access).

Note 7:

IF the Critical Devices are ON for the area/beam enclosure you wish to change to Controlled Access, THEN a SAFE will result when the Controlled Access state is selected.

TURN OFF CRITICAL DEVICES FIRST.

5.1.2.4 Select the Controlled Access state.

5.1.2.5 Operator at the gate fills out C-A Gate Security Log Sheet Form [C-A-OPM-ATT 4.1.a](#), and person entering signs in.

5.1.2.6 Each entrant at the gate phones MCR.

5.1.2.7 Each entrant at the gate turns the Controlled Access key (gotten from the MCR key tree) in the Controlled Access keyswitch, while the Operator in the MCR holds the button for the gate (simultaneous release).

5.1.2.8 After the last person has entered and the gate has closed, the operator at the gate informs the Operator in the MCR to release the gate button on the PanelView.

5.1.2.9 Before an entrant may exit the gate, they, or the Operator at the gate, must contact the MCR to get a simultaneous release.

5.1.2.10 Upon hearing the audible sound of the simultaneous release, the person exiting shall quickly pass through and close the gate.

Note 18:

IF a worker wishes to exit the gate, THEN a release must be given FROM THE MCR by pushing the gate Simultaneous Release push-button on the menu for that gate, OR ELSE the SWEEP will be lost.

Note 29:

Use of a local key is not required for exit.

5.1.2.11 The operator at the gate will have each person that exits, complete the gate log sheet and return the CA key to the MCR.

- 5.1.2.12 When all persons have exited the enclosure, the operator shall:
 - 5.1.2.12.1 Reset the gate using the sweep reset key.
 - 5.1.2.12.2 IF the gate is a "remote access gate", THEN it shall be reset remotely when the operator returns to the MCR.
 - 5.1.2.12.3 Verify on the gate box that the AREA SECURED light is lit indicating the sweep for the appropriate zone is good.

5.1.3 To Open a primary gate under Restricted Access conditions:

- 5.1.3.1 Select Accelerator Access from the PanelView Main Menu.
- 5.1.3.2 Select the zone you want to enter from the Accelerator Access Menu.
- 5.1.3.3 Select the **RA** state then momentarily press the Mode Permit pushbutton above the PanelView.
- 5.1.3.4 IF the primary area containing the gate you want to open is in Beam Permit, THEN follow paragraph 5.1.1.5 to set the state/mode of the enclosure to Restricted Access.
- 5.1.3.5 Entrants use a "0" (zero) key (U,V lines) or an "S" key (RHIC) in the Restricted Access keyswitch to open the door. A RHIC entrant may also unlock the door using the RHIC PASS Restricted Access Card in the card reader adjacent to the door.

5.1.4 Responding to Chipmunk Interlocks (Trouble).

- 5.1.4.1 IF a Chipmunk interrupts the program by turning off a critical device, THEN,
 - 5.1.4.1.1 Follow the instructions of [C-A OPM 6.1.2 "Responding to Chipmunk Interlocks"](#), or any Temporary Procedure used to modify OPM 6.1.2.
 - 5.1.4.1.2 Reset the Chipmunk by selecting/Interruptions/Chipmunks from the Main Menu and press the red Chipmunk Interlock button (AGS PanelView) or RESET button (RHIC PanelView).
 - 5.1.4.1.3 IF the Reset button does not change the "Trip or Fail-safe" indication, THEN (from the Interruption menu) select the Hardware menu, then HardWare Reset. The RHIC PanelView requires that you push the RESET button for the appropriate PLC (peer).
 - 5.1.4.1.4 IF the HardwareReset push-button does not change the "Trip and Fail-safe" indication to "OK", THEN the Chipmunk may be in the Fail-safe state and will require a System Specialist from the ACG to fix it.
- 5.1.4.2 IF a Chipmunk goes into a fail-safe state, THEN reset a fail-safe

indication the same way you would reset a Chipmunk interlock, follow paragraph 5.1.4.

5.1.5 Responding to a CRASH Actuator indication

5.1.5.1 IF a CRASH Actuator is activated in a beam enclosure AND manually reset, THEN a PanelView reset is still required to clear the fault.

5.1.5.1.2 To clear a CRASH Actuator from the AGS PanelView, select INTERRUPTIONS from the Main Menu and select the CRASH push-button at the bottom to reset.

5.1.5.1.3 To clear a CRASH Actuator from the RHIC PanelView, select INTERRUPTIONS from the Main Menu, then select CRASH. Push the RESET button for the appropriate PLC (peer) to reset the CRASH.

5.1.5.2 IF a primary beam enclosure is in SAFE Mode and access is required, THEN a simultaneous release is required from the MCR while an operator turns the CA or S/R (sweep reset) key in the appropriate keyswitch at the gate (see paragraph 5.2.1) as in Controlled Access.

5.1.6 Use of the Key Tree(s)

Note 10:

IF a Captured key for a particular primary area is not captured in the appropriate key tree at MCR_2, THEN PASS will not permit the beam enable state for this primary area.

5.1.6.1 For each Key Tree, the top row of keys are the Sweep Reset (S/R) keys. S/R keys shall be used only by trained individuals (MCR, CAS) in order to conduct search and secure (sweep) of an enclosure, and to open a non-remote-access gate. ALL gates that require resetting are reset using the S/R key.

5.1.6.2 For each Key Tree, the second (third etc.) row of keys are the Controlled Access (CA) keys. CA keys are also required to enter a zone in the SAFE (SA) state and may be used to enter a zone in the Restricted Access (RA) state. Use of the CA key, when a zone is in CA or SA and the zone is swept, requires simultaneous release from either of the PanelViews in the MCR.

5.1.6.3 Indicator Lights

5.1.6.3.1 Green light indicates a key is not captured.

5.1.6.3.2 Red light indicates all the keys are captured.

5.1.6.3.3 Yellow (momentary) light indicates that a gate reset signal was sent to a remote PLC.

5.1.6.4 Resetting a Gate

- 5.1.6.4.1 Non-remote-access gates are reset locally by trained operations personnel by inserting the S/R key in the RESET keyswitch on the gate box OUTSIDE the gate to be reset.
- 5.1.6.4.2 Remote access gates are reset AFTER all the keys are returned to the key tree.
 - 5.1.6.4.2.1 Remove the S/R key labeled RESET (in general the leftmost S/R key).
 - 5.1.6.4.2.2 place it in the RESET keyswitch at far left side of the key tree.
 - 5.1.6.4.2.3 press and hold the PanelView button for the remote gate to be reset (remote gates are delineated on the PanelView by a lighter shade of cyan).
 - 5.1.6.4.2.4 turn the key in the keyswitch and observe the momentary yellow light.
 - 5.1.6.4.2.5 Release the key.
 - 5.1.6.4.2.6 Release the pushbutton on PanelView.
 - 5.1.6.4.2.7 Observe the gate reset indicator (above the gate pushbutton) indicates RESET.
 - 5.1.6.4.2.8 Return the S/R key to its home position.
- 5.1.6.5 Coupling -- the Up and Udn key trees are coupled. Beam is not permitted in Udn unless the Uup keytree is complete. The red indicator will go out in Udn if a captured key is removed from Uup.

5.1.7 PLC (Allen Bradley) Alarms

- 5.1.7.1 To silence a PLC alarm received by the PanelView 1400, acknowledge the alarm by pressing the button that appears with the alarm. CONTACT AN ACG member.
- 5.1.7.2 IF an alarm cannot be cleared by acknowledging it, then contact an ACG systems specialist for help.

5.1.8 Responding to ODH (Oxygen Deficiency Hazard) & GAS Alarms

- 5.1.8.1 IF an ODH alarm is received on the RHIC panelview, or by other means, THEN,
 - 5.1.8.1.1 Use the alarm information or the RHIC PanelView ODH/Gas menu to determine which sector is alarming.
 - 5.1.8.1.2 Use the RHIC PanelView to determine what state/mode the alarming sector is in.
 - 5.1.8.1.3 IF the alarming zone is in the NA state, THEN contact the Cryogenic Control Room AND inform them of the

location of the alarm and the state of the fans and vents.

5.1.8.1.4 IF the alarming zone was not in the NA state, then PASS will set the zone to the SA state.

- Contact the Cryogenic Control room and inform them of the location of the alarm and the state of the fans and vents.
- Prepare to allow the Cryogenic Group Technicians to make a Controlled Access entry into the alarming zone to investigate.
- Contact work group leaders to determine whether all personnel are accounted for. (See [C-A OPM 3.15 "Response to Low Oxygen Alarm in ODH Class O and I Areas"](#)).

Note 11:

IF the “alarm condition has cleared” AND the fans have not turned off, THEN MCR Operators shall turn off the exhaust fans in the tunnel using the pushbutton at MCR_2-4.
Fans shall be turned off to reduce risk of damage to equipment belonging to experiments.

Note 12:

Experiment fans in six and eight o’clock turn on and give EVAC indications if the flammable gas detectors sense a flammable gas concentration of 25% or more of the Lower Explosive Limit (LEL).

5.1.8.2 IF GAS alarm, or 6XEF or 8XEF fan alarm, is received on the RHIC PanelView, or by other means, THEN,

- 5.1.8.2.1 Alert the experiment of the alarm and the state of the fans and vents.
- 5.1.8.2.2 Verify that the experiment orders all personnel to evacuate the enclosure if the enclosure is in a state other than NA
- 5.1.8.2.3 Account for all personnel in the enclosure.
- 5.1.8.2.4 Verify that the fans turn off when the alarm condition clears.
- 5.1.8.2.5 Contact an ACG technician to turn fans off if they do not turn off when the alarm condition is cleared.

5.1.9 RHIC Rf (28 and 197 MHz systems)

Note 13:

Operation of the RHIC Rf system presents an X-ray hazard to persons in the enclosure.

Note 214:

PASS uses separate key tree to control the Rf enclosure in order to permit the Rf group to operate the system while adjacent zones are in an accessible state.

5.1.9.1 In order to control the PASS critical devices for the Rf zone (4z1) from the MCR, the "Transfer Switch", an EB016 key in the RF S/R keytree in the MCR, must be captured. This allows "remote" operation of the Rf system.

5.1.9.2 "Stand alone" Rf operation requires control of the PASS critical devices from the RHIC Rf Control Room. The EB016 key must be captured in the keytree in the Rf Control Room in building 1004A in order to run the Rf system "locally".

5.1.9.3 IF the Rf Critical Devices FAIL to readback SAFE when commanded to turn off by PASS, THEN the OC shall apply RS LOTO to ALL Rf ANODE power supplies in building 1004A, and contact Rf and ACG systems specialists. The indication will be a "HARDWARE NG" readback for critical devices RF1 and RF2 in either Division A and/or Division B on the RHIC critical devices page.

5.1.9.3.1 The 14 Fused Disconnect Switches to be RSLOTO in building 1004A are:

YO4-CAVA3.1	B14-CAVA3.1
YO4-CAVA3.2	B14-CAVA3.2
YO4-CAVS3.1	B14-CAVS3.1
YO4-CAVS3.2	B14-CAVS3.2
YO3-CAVS3.3	B14-CAVS3.3
G4-CAVSX1	G4-CAVSX2
G4-CAVSX3	G4-CAVSX4

5.1.10 **REMOTE CONTROL ACCESS** – Gates BGE1, 2GE1, 6GE2, 8GE1, 10GE1, 2GE2, 1GI1, 7GE1, 12GE1, A3Primary ONLY

CAUTION:

~~An RCT survey is required before A3/NSRL access whenever intensity is increased significantly from a previous access.
RCT Survey at RHIC will be according to the instructions given by the Facility Representative or the RSC Chairperson.~~

Note 15:

IF one of the two cameras at a gate fails, OR another critical component of the RCA video system fails, THEN a conventional access following [C-A-OPM 4.1](#) shall be used instead.

Note 216:

Experimenters who are not enrolled in the Iris scan System, or experimenters who need to enter when all of the local CA keys are in service, may come to the MCR to sign out a CA key (EB01). The PASS operator shall remove the required number of C-A keys from MCR_2. The Operator shall have the experimenter sign the gat log sheet, [C-A-OPM-ATT 4.1.f](#), and the Operator will put an X in the last column indicating the key was taken from MCR. Each time the experimenter enters the Operator shall fill out the sheet as if the experimenter was using a local CA key. At the end of the access, the experimenter will return the EB014 key and **sign out on the line they signed in on.**

Note 17:

~~Remote Access Gate log sheets come in two forms. The new form, [C-A-OPM-ATT 4.1.g](#) will be used for remote access at RHIC and NSRL. The form is computerized and writes the entrants name on the log sheet when they properly enter and exit the enclosure. The original form, [C-A-OPM-ATT 4.1.f](#) is to be used as a “back-up” form if the auto-logging feature is not working, or in the case where RHIC experimenters come to the MCR to obtain CA keys in the event that the five key tree keys are in use.~~

- 5.1.10.1 Operator selects gate video corresponding to gate to be entered.
- 5.1.10.2 Operator fills out header of Gate Security Log Sheet for Remote Access ([C-A-OPM-ATT 4.1.f](#)) ~~or [C-A-OPM-ATT 4.1.g](#)~~
- 5.1.10.3 Operator turns off appropriate critical device.
- 5.1.10.4 Operator sets zone to Controlled Access using PanelView at MCR_7
- 5.1.10.5 Entrant scans IRIS and obtains a CA from the Key Tree – keys MUST be removed IN ORDER.

- 5.1.10.5.1 IF the entrant is not in the IRIS scan database then the scanner will not release a CA key
- 5.1.10.5.2 IF there are problems with the operation of the IRIS scanner, THEN see paragraph 5.2.5.
- 5.1.10.6 Operator writes the entrant's last name on [C-A-OPM-ATT 4.1.f](#) or the act of IRIS scanning and removing a CA key (NSRL/RHIC) causes the entrants last name to be written to [C-A-OPM-ATT 4.1.g](#)
- 5.1.10.7 Operator asks the entrant to hold up his/her CA key, asks for his/her name, and verifies that he/she was recently identified by the IRIS scanner
- 5.1.10.8 Entrant inserts CA key in keys switch and turns and holds key till door opens.
- 5.1.10.9 Operator gives simultaneous release from PanelView [\(for RHIC access\)](#) at MCR_7 or "holds" the NSRL access "button"– OPERATOR MUST HOLD SIMULTANEOUS RELEASE BUTTON UNTIL THE DOOR IS AGAIN CLOSED.
- 5.1.10.10 Entrant enters enclosure
- 5.1.10.11 Operator "INITIALS IN" entrant and writes time of entry on [C-A-OPM-ATT 4.1.f](#) or [C-A-OPM-ATT 4.1.g](#)
- 5.1.10.12 Operator executes steps 5.1.10.5 through 5.1.10.11 for each entrant
 - 5.1.10.12.1 Two entrants may piggyback during an access as long as each entrant has a CA key
 - 5.1.10.12.2 The OC may approve piggybacking by more than two individuals
- 5.1.10.13 Before exiting the entrant contacts the Operator for a simultaneous release
- 5.1.10.14 Operator gives simultaneous release and holds button until door is again closed.

5.1.10.15 Operator “INITIALS OUT” the person exiting the gate and writes the exit time on [C-A-OPM-ATT. 4.1.f](#) or [C-A-OPM-ATT. 4.1.g](#)

5.1.10.16 Entrant returns CA key to the key tree (order NOT important)

Note 18:

The entrant may choose to hold the CA key for multiple accesses. The Operator will simply sign them in and out each time on the gate log sheet.

5.1.10.17 Entrant signs out by identifying themselves using the IRIS scanner.

5.1.10.18 At the end of the access, the operator verifies that all who have entered have also exited.

5.1.10.19 Operator resets BGE1 at MCR_7 or goes to MCR_2 to reset RHIC gates

5.1.10.20 For multiple/rapid NSRL access during radiobiology experiments, the Gate Log Sheet need not be signed by the Operations Coordinator.

5.1.10.20.1 During NSRL radiobiology operation the gate log sheet may be used or remain open for up to 8 hours/ one shift.

5.1.10.21 The Operator restores beam permit to NSRL zone 1 or to RHIC.

5.1.10.22 The Operator ensures the circulating beam shutter is open then enables the critical devices for NSRL operation.

5.1.10.23 The Operator restores the beam.

5.1.11 REMOTE CONTROL ACCESS -- RHIC (RCA) – ALL OTHER RHIC GATES NOT COVERED BY 5.1.10 ABOVE

Note 19:

Conventional access using a local gate watch according to [C-A-OPM 4.1](#) may be used to access any PASS gate if so ordered by the OC.

Note 20:

IF one of the two cameras at a gate fails OR another critical component of the RCA video system fails, THEN a conventional access following [C-A-OPM 4.1](#) shall be used instead.

5.1.11.1 Set the zone to the CA state.

5.1.11.2 Gate entrants shall come to MCR and fill out the [C-A Gate Security Log Sheet \(C-A-OPM-ATT 4.1.a\)](#). The entrant shall print their name, destination and sign in the *SIGNATURE IN* box.

Note 21:

AT LEAST one [C-A Gate Security Log Sheet](#) is required for EACH gate to be entered.

5.1.11.3 Verify the entrant's identification by viewing the entrant's laboratory Identification Card (ID).

5.1.11.3.1 Verify the entrants training by asking to see their valid pink or blue RHIC (PASS) Restricted Access Card.

5.1.11.4 Operator gives one CA key (token) from the appropriate key tree to the entrant and instructs the entrant to telephone x7400 whenever they arrive at the gate to enter OR exit. The operator does NOT take an ID card (token) from the entrant.

5.1.11.4.1 Write the number (**NOT EB012, EB010, EB014**) STAMPED ON THE KEY in the CA key #/ID column on the [C-A Gate Security Log sheet](#).

Note 22:

EVERY person that enters a PASS monitored enclosure in Controlled (or XA, or SA) Access MUST have a CA key. Sweep Reset (S/R) keys may be given to MCR/CAS personnel only.

5.1.11.5 Go to the PASS Remote Access Console -- MCR_7 while entrants travel to the gate(s).

5.1.11.5.1 Select the ACCESS menu on the PanelView.

5.1.11.5.2 Select the enclosure containing the gate to be entered.

5.1.11.5.3 Select CATV menu and use the PanelView to route inner and outer gate video to TWO ADJACENT video monitors.

5.1.11.5.4 IF inner AND outer video from the gate is not

functioning, THEN report that fact to the OC and do not permit Remote Access from that gate until the camera/video is fixed.

5.1.11.5.5 Return to the page containing the gate release button.

Note 123:

PASS Operators Conducting Remote Access Operations are not to perform any other tasks except for gate watch duties.

By-standers are NOT permitted at MCR_7 during RCA.

The phones at MCR_7 consist solely of the PASS extension 7400 and AGS radio frequencies for communications with entrants.

Note 24:

Remote Control Access Gate Watch may be changed by following the rules for changing the watch found in paragraph 5.2.3 of [C-A OPM 4.1](#).

ONLY MCR/CAS personnel may relieve the gate watch at MCR_7.

5.1.11.6 When the entrant arrives at the gate they shall telephone extension 7400.

5.1.11.7 When communication is established with the entrant, the PASS Operator in the MCR shall ask the entrant to hold their ID card and CA key up to the camera and verify that they are the person who signed out the key.

5.1.11.8 The PASS Operator shall instruct the entrant to insert their CA key into the OPEN keyswitch and turn it while the simultaneous release is given.

5.1.11.9 The PASS Operator shall write their initials in the WATCH INITIAL IN column of the Gate Log ([C-A-OPM-ATT. 4.1.a](#)) signifying that the entrant was remotely observed to have entered.

Note 25:

The PASS Operator shall observe the gate video during the simultaneous release. If someone other than the entrant in step 5.1.11.8 enters or if more than one person enter, then the operator shall release the simultaneous release button and cause the sweep to be lost. He/She shall verify that said sweep was lost.

5.1.11.10 The PASS Operator shall perform steps 5.1.11.7 through 5.1.11.9 for every gate entrant.

5.1.11.11 When the entrant's work is done they shall go to the gate to contact the MCR PASS Operator by telephoning x7400.

5.1.11.12 The MCR PASS Operator shall instruct the entrant to exit after

they hear the buzzer corresponding to the simultaneous release.

Note 26:

The PASS Operator shall observe the gate video during the simultaneous release. If any person enters, then the operator shall release the simultaneous release button and cause the sweep to be lost. He/she shall verify that said sweep was lost.

5.1.11.13 The MCR PASS Operator shall place their initials in the WATCH INITIAL OUT column of the C-A Gate Security Log Sheet ([C-A OPM-ATT 4.1.a](#)) signifying that the entrant was remotely observed to have exited.

5.1.11.14 IF the entrant must enter the gate more than once, THEN the MCR PASS Operator shall print the entrants name in the NAME PRINT column and initial (with the operators initials) the "WATCH INITIAL IN" column of the C-A Gate Security Log Sheet for **each** entry and put their own (Operators) initials in the WATCH INITIAL OUT column for **each** exit.

5.1.11.15 As each worker finishes work, they shall be instructed to return to MCR to:

5.1.11.15.1 return the CA key to the PASS Operator in the MCR.

5.1.11.15.2 sign out in the ENTRANT'S SIGNATURE OUT column of the C-A Gate Security Log Sheet for EACH AND EVERY exit they made.

5.1.11.16 After all the CA keys are returned to the key tree and the C-A Gate Security Log Sheet has been reviewed by the OC, THEN the Operator shall reset the gate according to the remote gate reset rules in paragraph 5.1.6.4.2 of C-A OPM 4.44 "Operation of PASS".

5.1.12 PASS Alarms (RHIC PanelView ONLY)

Note 27:

Critical PASS alarms include ODH, Flammable Gas, door propped open, loss of communications in one or both divisions, and actions that result in an enclosure "SAFED" by PASS.

5.1.12.1 IF a PASS generated alarm appears on the bottom of the screen

5.1.12.2 Push the EXIT button if the alarm is not relevant to the current state of operations for the zone or Collider. IF the alarm is relevant, THEN go to step 5.1.12.4.

5.1.12.3 IF an alarm is accompanied by an audible signal, THEN it is critical and should be investigated.

- 5.1.12.4 Investigate the alarm. The alarm name (fan, door, etc.) will “clue” you as to where to look to solve the problem.
- 5.1.12.5 View outstanding alarms by pushing the Alarm Status button from the Operations page.
- 5.1.12.6 View alarm history by pushing Alarm History button from the Operations page.

5.1.13 SRL Operations

- 5.1.13.1 The Critical Device for NSRL zone 3, the stub tunnel is the LtB/TtB beam stops, and the Stored Beam Shutter (vacuum valve at B6).
- 5.1.13.2 The Critical Device for NSRL zone 1 (experiment sample room) and zone 2 (NSRL beam transport) is the Booster D6 (slow) extraction septum power supply, and the Beam Plug located in the stub tunnel.
- 5.1.13.3 The Stored Beam Shutter must be opened before critical devices are enabled.
- 5.1.13.4 The Beam Plug in the stub tunnel is retracted before the D6 Critical Device can be enabled.
- 5.1.13.5 The D6 Critical Device must be disabled before the Beam Plug in the stub tunnel can be inserted.

5.1.14 Using Computerized Remote Access Log Sheet C-A-OPM Att. 4.1.g

- 5.1.14.1 The Operator fills out the header by using the “pull downs” to enter the shift number, and the operators name. Select the experiment (NSRL, STAR, Phenix, etc.) from the “pull down” at the bottom of the screen.
- 5.1.14.2 When the iris scanner identifies an individual, that person may remove a key from the key tree. When the key is removed the individuals UserID number and name is written by the system to the log sheet.
- 5.1.14.3 After the operator gives the simultaneous release and the entrant enters the enclosure, the operator initials them in by choosing IN from the STAUS pull down, and confirms the body count by choosing their own initials from the WATCH pull down.
- 5.1.14.4 After the operator gives the simultaneous release and the entrant leaves the enclosure, the operator initials them out by choosing OUT from the STAUS pull down, and confirms the body count by choosing their own initials from the WATCH pull down
- 5.1.14.5 The operator may invalidate any entry at their discretion by choosing INVALID from the STATUS pull down and their initials from the WATCH pull down

5.2 PASS procedures relevant to hardware remote to MCR.

5.2.1 Resetting The RED CRASH Buttons and the Orange CRASH Cords

5.2.1.1 Enter a beam enclosure that has been crashed by following the instructions in paragraph 5.1.2.

5.2.1.2 CRASH cords and CRASH push buttons mechanically latch and require manual reset.

5.2.1.3 Reset a CRASH cord (U,W,X,Y, & RHIC) by raising it's flag.

5.2.1.4 Reset a RED CRASH button (V lines) by withdrawing the RED button.

5.2.1.5 Clear "logical" latches (in MCR) by following the instructions of paragraph 5.1.5.

5.2.2 Making a Controlled Access (local gate watch) at RCA gate.

5.2.2.1 CAS tech or MCR operator obtains the appropriate Controlled Access (CA) key or Sweep/Reset (S/R) key for the gate from the MCR key tree.

5.2.2.1.1 CAS Tech/Operator may take additional CA keys to hand out to gate entrants.

5.2.2.1.2 CAS Tech/Operator need NOT sign out CA keys from the MCR when they perform the gate watch function. IF they have no CA key, THEN they may not enter the enclosure.

5.2.2.2 CAS/MCR at the gate, fills out the [C-A Gate Security Log Sheet form \(C-A-OPM-ATT 4.1.a\)](#) and follow the practices set forth in [C-A OPM 4.1](#).

5.2.2.3 After filling in required information on the gate log sheet, the entrant inserts the CA key into the key-switch labeled OPEN and turns in the indicated direction to open. During this step an operator in the MCR must simultaneously depress the simultaneous release push-button in order to prevent loss of the sweep.

5.2.2.3.1 Perform 5.2.2.3 for every entry

Note 128:

If a worker wishes to exit the gate, THEN a release must be given FROM THE MCR by pushing the CYAN gate Simultaneous Release push-button on the menu for that gate OR ELSE the SWEEP will be lost.

Note 29:

Use of a local key is not required for exit.

Note 30:

Entrants shall display their blue/pink RHIC Access card as proof of ODH training.

5.2.3 Resetting a Primary Gate after a Controlled Access

5.2.3.1 Insert the S/R or CA key into the key-switch labeled RESET and turn it counter clockwise.

5.2.3.2 When the gate is reset, the yellow Gate reset lamp will light.

5.2.3.3 Remote Access Gates (no RESET keyswitch at the gate) are reset in the MCR using the S/R key in the RESET keyswitch of the appropriate keytree.

Note 31:

Controlled Access state can not be selected for an area where a gate is open.

5.2.4 General instructions for sweeping beam enclosures.

5.2.4.1 Set the area to be swept to Controlled Access (paragraph 5.1.1).

5.2.4.2 Take the appropriate S/R and as required, the CA key (depending on weather the gate is a remote access gate or not) from the Key Tree panel at MCR_2.

5.2.4.3 At the remote gate, insert the Controlled Access key into the OPEN key-switch and turn clockwise while the operator in MCR simultaneously presses the gate release push-button for that gate.

5.2.4.4 Open the gate, enter the enclosure, and close the gate behind you.

5.2.4.5 Start the sweep by inserting and turning the S/R key in the check-station key-switch corresponding to the first reset station (see the appropriate sweep procedure). Observe that the yellow light will blink to confirm proper start of sweep.

5.2.4.6 Follow the sweep procedure and locate additional reset stations as per the appropriate sweep procedure.

5.2.4.7 Complete the sweep by inserting and turning the S/R key in the key switch for the last reset station (inside the gate), and observe that the yellow "sweep" lamp remains lighted.

5.2.4.8 IF the sweep is concluded, THEN ask the MCR for a simultaneous gate release using the PanelView push-button for that gate and exit the beam enclosure.

5.2.4.9 Reset the gate by inserting and turning the S/R key in the RESET key-switch and observing the lighting of the yellow "gate reset" lamp. Observe the SWEEP lamp is also lighted.

5.2.4.9.1 GE gates are RCA gates and are reset from the MCR. See paragraph 5.1.6.4.2.

5.2.5 Failure of the iris scanner to release a Controlled Access key (Token)

Note 32:

In the case of a failed IRIS scanner at RHIC, the “BYPASS” key will be used to disable the IRIS scanner and remote key tree. Remote Access at RHIC may still be affected using paragraph 5.1.11 above. The following paragraphs pertain to a failure of the NSRL/A3Primary Gate IRIS scanner.

- 5.2.5.1 IF the iris scanner at the gate fails to cause the release of the Controlled Access key (token) from the key tree, THEN
- 5.2.5.2 The OC shall send an operations group member who is enrolled in the iris scan database to verify the operation of the iris scanner.
- 5.2.5.3 IF the iris scan works for the operations group member THEN re-enroll the experimenter with the “problem eyes”
- 5.2.5.4 IF the iris scan does not work for the operations group member THEN remote access for gate must be abandoned and two gate watches stationed at the gate.
 - 5.2.5.4.1 One gate watch shall release the CA key using the iris scan bypass key, the second gate watch shall sign experimenters in and out using the standard gate log sheet [C-A-OPM-ATT 4.1.a](#).
- 5.2.5.5 OC shall obtain iris scan bypass key from “RS LOTO” keylocker in the closet behind MCR_2.
- 5.2.5.6 OC shall instruct the gate watch to follow C-AD [OPM 4.71 “Use of Alternative to Iridian Iris Reader”](#) in order to release CA keys from the keytree.
- 5.2.5.7 Gatewatch releases the CA keys from keytree using bypass key in the “KeyTree bypass switch” located to the right of the key tree. (see item 3 on page 4 of C-AD [OPM 4.72 “Entry Procedure for NASA Experiment Using the Iridian Iris Reader”](#) for equipment layout
- 5.2.5.8 The local gate watch may sign for the OC on line 6 (Gate log review) only during periods of rapid access for radiobiology experiments

6. Documentation

None

7. References

- 7.1 [C-A-OPM-ATT 4.1.a “C-A Gate Security Log Sheet Form”](#).
- 7.2 [C-A-OPM-ATT 4.1.f “C-A Gate Security Log Sheet Form”](#).
- 7.3 [C-A-OPM-ATT 4.1.g “C-A Gate Security Log Sheet Form”](#).
- 7.42 [C-A OPM 4.1 “C-A Complex Access Control Procedures for Primary Beam Enclosures”](#).
- 7.53 [C-A OPM 3.15 “Response to Low Oxygen Alarm in ODH Class 0 and 1 Areas”](#).
- 7.64 [C-A-OPM 2.22 “Power Dip and Power Outage Response Procedure”](#).
- 7.75 [C-A-OPM 6.1.2 “Responding To Chipmunk Interlocks”](#).
- 7.86 [C-A-OPM-ATT 4.1.f “C-A Gate Security Log Sheet for Remote Access”](#).
- 7.87 [C-A-OPM 4.71 “Use of Alternative to Iridian Iris Reader”](#).

8. Attachments

- 8.1 Opening and Closing the Phenix Plug Door – Experimenter Procedure
- 8.2 RHIC Experiment Remote Access – Experimenter Procedure

OPM 4.44 Attachment 8.1 –

Opening and Closing the Phenix Plug Door – Experimenter Procedure

To close the plug

- 1-Plug operator sets plug drive motor energy disconnect switch to the ON position
- 2-Plug operator inserts and turns the CONTROLLED ACCESS key in the drive motor enable keyswitch (RHIC Safety Systems 8GE1 Plug Door Lockout)
- 3- Plug operator presses and holds the close pushbutton
- 4-Plug operator phones MCR when plug is closed so that gate 8GE1 may be remotely reset
- 5-Plug operator sets plug drive motor energy disconnect switch to the OFF position
- 6-Plug operator returns CA key to the key tree
- 7-Plug operator phones MCR to report that he/she is "signing out"
- 8-Plug operator identifies self (signs out) to MCR by using the Iris scan identification

To open the plug

- 1-Contact MCR and ask to have Phenix (8z1) set to Controlled Access
- 2-Plug Operator is identified by iris scanner
- 3-Plug Operator removes CA key from key tree.
- 4-Plug Operator sets plug drive motor energy disconnect switch to the ON position
- 5-Plug Operator inserts and turns the CONTROLLED ACCESS key in the drive motor enable keyswitch (RHIC Safety Systems 8GE1 Plug Door Lockout)
- 6-Plug Operator presses and holds the open pushbutton

OPM 4.44 Attachment 8.2

RHIC Experiment Remote Access – Experimenter Procedure

Abbreviated Entry Procedures for Controlled Access at RHIC IRs Using the Iris Reader

Please Read These Instructions before You Use the Iris Reader

1. Stand in front of the iris reader and look into the camera with either eye. The camera will speak instruction back to you.
2. When accepted, the camera voice will say “identification completed.”
3. Remove the key from the key tree. You have about 2 seconds to remove the key and keys must be removed in sequential order.
4. To remove the key, turn it to the left and pull.
5. With the key in hand, proceed to the gate.
6. Contact MCR by phone when you arrive at the gate.
7. Identify yourself at the gate to the operator by giving your name.
8. Place key in gate switch and turn key with simultaneous release from MCR.
9. Remove key and take it with you into the IR.
10. When you are about to leave the IR, contact the MCR on the phone and ask for release.
11. Wait for buzzer, open gate and leave.
12. Return key to key tree.
13. Stand in front of the iris reader, look into the camera with the eye and log out. Camera voice will say “thank you.”