

*If you are using a printed copy of this procedure, and not the on-screen version, then you **MUST** make sure the dates at the bottom of the printed copy and the on-screen version match. The on-screen version of the Collider-Accelerator Department Procedure is the Official Version. Hard copies of all signed, official, C-A Operating Procedures are available by contacting the **ESSHQ Procedures Coordinator, Bldg. 911A***

C-A OPERATIONS PROCEDURES MANUAL

(Collider Electrical Power Supply Group Procedure CPS-003)

Note: This document was formerly a C-A Group Procedure. The content of the group procedure was reviewed by the Technical Supervisor. All approvals and/or issue dates of the original group procedure are maintained for present use.

15.2.3 Yellow Power Supply System Lock-Out Procedure

Text Pages 3 through 5

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

D. Bruno



Procedure: C-A-CPS-003  
Revision: 05  
Revision Date: 1/11/07

**COLLIDER-ACCELERATOR DEPARTMENT**

Title: Yellow Power Supply System Lock-Out Procedure

Author: D. Bruno

Group: Collider Power Supply

**Group Leader concurrence indicates procedure is still current.**

Group Leader: Donald Bruno *Signature on File* Date: 1/11/07

**This Procedure Must Be Reviewed By The Technical Supervisor Prior to use.  
If This Procedure Does Not Reflect Current Equipment/Processes  
Then Immediately Notify The Group Leader**

# Yellow Power Supply System Lock-Out Procedure

This document will describe the lock-out procedure for Yellow RHIC ring power supply systems excluding the 50 Amp Corrector supplies, Gamma-T supplies, Sextupole supplies, Snake and Rotator supplies and Warm-up Heater System. Please note lock/key number in blank. Sign and date this form at the bottom when complete.

## I. Main Power Supplies in 1004-B:

- |  |  |
|--|--|
| 1. Turn off the Control Power Switch:<br>Front Panel following PS.<br>(PPE = class 0+) | PYDFT _____<br>PYQFT _____<br>PYQR _____<br>PYDR _____ |
|--|--|

Before locking out the 480V disconnects observe 480V on all three line to line voltages on the volt meters on the front of the power supplies. Next, make sure all of the lights are flashing on the voltage monitor gauges on the back of the p.s.

- |   |  |
|---|--|
| 2. Lock out the following 480V disconnect Switches:<br>(PPE = class 4)<br>(These have kirklocks, take key with you) | SYDFT _____<br>SYQFT _____<br>SYQR _____<br>SYDR _____ |
|---|--|

After you lock out the 480V disconnect switch make sure all three line to line voltages on the volt meters on the front of the power supplies read zero. Next make sure all of the lights are flashing are OFF on the voltage monitor gauges on the back of the p.s.

## II. Insertion Region Bipolar Power Supplies:

- |  |       |
|--|-------|
| 1. Bldg. 1004-B:<br>Using Cable Lockout..... |       |
| a.) Panel P4BIR208 (PPE = class 2)           |       |
| Lockout SW. #2 R4BQDF3                       | _____ |
| Lockout SW. #5 R4BYQF4                       | _____ |
| Lockout SW. #3 R4BYQF2                       | _____ |
| Lockout SW. #4 R4BYQF3                       | _____ |
| Lockout SW. #18 R4BYQF1                      | _____ |
| Lockout SW. #16 R4BQT4                       | _____ |
| Lockout SW. #15 R4BQT3                       | _____ |
| Lockout yi3-qr9-ps                           | _____ |
| Using Circuit Breaker Lockout device.        |       |
| b.) Panel P4BIR480 (PPE = class 4)           |       |
| Lockout SW. #11 R4BYQF6                      | _____ |
| Lockout SW. #12 R4BYQF5                      | _____ |
| Lockout SW. #9 R4BOFF2                       | _____ |
| Lockout SW. #1 R4BD1                         | _____ |

2. Bldg. 1002

Using Cable Lock-out.....

a.) Panel P2BIR208 (PPE = class 2)

- Lockout SW. # 5 R2BYQF4 \_\_\_\_\_
- Lockout SW. # 4 R2BYQF3 \_\_\_\_\_
- Lockout SW. # 3 R2BYQF2 \_\_\_\_\_
- Lockout SW.#18 R2BYQF1 \_\_\_\_\_
- Lockout SW. # 2 R2BQD3 \_\_\_\_\_
- Lockout SW. #16 R2BQT4 \_\_\_\_\_
- Lockout SW. #15 R2BQT3 \_\_\_\_\_
- Lockout yo1-qb8-ps using circuit breaker \_\_\_\_\_
- Lockout device \_\_\_\_\_

b.) Panel P2BIR480 (PPE = class 4)

- Lockout SW. # 5 R2BYQF5 \_\_\_\_\_
- Lockout SW. # 1 R2BD1 \_\_\_\_\_

3. Bldg. 1012

Using Cable Lock-out.....

a.) Panel P12AIR208 (PPE = class 2)

- Lockout SW. # 5 R12AYQF4 \_\_\_\_\_
- Lockout SW. # 4 R12AYQF3 \_\_\_\_\_
- Lockout SW. #18 R12AYQF1 \_\_\_\_\_
- Lockout SW.# 3 R12AYQF2 \_\_\_\_\_
- Lockout SW. # 2 R12AQD3 \_\_\_\_\_
- Lockout SW. #16 R12AQT4 \_\_\_\_\_
- Lockout SW. #15 R12AQT3 \_\_\_\_\_
- Lockout yi11-qb9-ps using circuit breaker \_\_\_\_\_
- Lockout device \_\_\_\_\_

b.) Panel P12AIR480 (PPE = class 4)

- Lockout SW. # 10 R12AYQF5 \_\_\_\_\_
- Lockout SW. # 3 R12AD1 \_\_\_\_\_

4. Bldg. 1006

Using Cable Lock-out.....

a.) Panel P6BIR208 (PPE = class 2)

- Lockout SW. # 5 R6BYQF4 \_\_\_\_\_
- Lockout SW. # 4 R6BYQF3 \_\_\_\_\_
- Lockout SW. #18 R6BYQF1 \_\_\_\_\_
- Lockout SW.# 3 R6BYQF2 \_\_\_\_\_
- Lockout SW. # 2 R6BQD3 \_\_\_\_\_
- Lockout SW. #16 R6BQT4 \_\_\_\_\_
- Lockout SW. #15 R6BQT3 \_\_\_\_\_
- Lockout yo5-qb8-ps using circuit breaker \_\_\_\_\_
- Lockout device \_\_\_\_\_

- b.) Panel P6BIR480 (PPE = class 4)
  - Lockout SW. # 6 R6BYQF5 \_\_\_\_\_
  - Lockout SW. # 1 R6BD1 \_\_\_\_\_

5. Bldg. 1008

Using Cable Lock-out.....

- a.) Panel P8BIR208 (PPE = class 2)
  - Lockout SW. # 5 R8BYQF4 \_\_\_\_\_
  - Lockout SW. # 4 R8BYQF3 \_\_\_\_\_
  - Lockout SW. #18 R8BYQF1 \_\_\_\_\_
  - Lockout SW.# 3 R8BYQF2 \_\_\_\_\_
  - Lockout SW. # 2 R8BQD3 \_\_\_\_\_
  - Lockout SW. #16 R8BQT4 \_\_\_\_\_
  - Lockout SW. #15 R8BQT3 \_\_\_\_\_
  - Lockout yi7-qi9-ps using circuit breaker \_\_\_\_\_
  - Lockout device \_\_\_\_\_

- b.) Panel P8BIR480 (PPE = class 4)
  - Lockout SW. # 5 R8BYQF5 \_\_\_\_\_
  - Lockout SW. # 1 R8BD1 \_\_\_\_\_

6. Bldg. 1010

Using Cable Lock-out.....

- a.) Panel P10AIR208 (PPE = class 2)
  - Lockout SW. # 8 R10AYQF4 \_\_\_\_\_
  - Lockout SW. # 7 R10AYQF3 \_\_\_\_\_
  - Lockout SW.# 6 R10AYQF2 \_\_\_\_\_
  - Lockout SW.# 5 R10AYQF1 \_\_\_\_\_
  - Lockout SW. # 3 R10AQD3 \_\_\_\_\_
  - Lockout SW. # 4 R10AQD4 \_\_\_\_\_
  - Lockout SW. #20 R10AQT4 \_\_\_\_\_
  - Lockout SW. #19 R10AQT3 \_\_\_\_\_

- b.) Panel P10AIR480 (PPE = class 4)
  - Lockout SW. # 11 R10AYQF5 \_\_\_\_\_
  - Lockout SW. # 12 R10AYQF6 \_\_\_\_\_
  - Lockout SW. # 3 R10AD2 \_\_\_\_\_
  - Lockout SW. # 5 R10AD6 \_\_\_\_\_

- c.) Main 6K Dump Switch (PPE = class 0+)
  - Lockout SW. R10ADS4 \_\_\_\_\_
  - Lockout SW. R10ADS5 \_\_\_\_\_

NAME \_\_\_\_\_  
 LIFE # \_\_\_\_\_  
 DATE: \_\_\_\_\_

NAME \_\_\_\_\_  
 LIFE # \_\_\_\_\_  
 DATE: \_\_\_\_\_