

Overview of Lockout Tagout of RHIC Nested IR ps.'s in **service buildings ONLY**

Procedures will be on the web.

There are 4 types of IR p.s.'s in the service buildings that get locked out. Follow Lockout Tagout procedure for each. This is a quick overview of each. **DO NOT USE THIS OVERVIEW TO PERFORM ANY LOCKOUT OF THESE OR ANY RHIC P.S.'s.**

1. Blue IR Quadrupole Rack Mounted Nested Power Supplies
2. Yellow IR Quadrupole Rack Mounted Nested Power Supplies

3. Blue IR Quadrupole Stand Alone Nested Power Supplies
4. Yellow IR Quadrupole Stand Alone Nested Power Supplies

5. Blue IR Dipole Nested Power Supplies
6. Yellow IR Dipole Nested Power Supplies

7. tq power supplies (not nested)

Quick notes to understand what has to be locked out.

- 1) If the p.s. has a "tq" in the sitewide name then you can just lockout the 208VAC disconnect to the rack and you will be safe. If you are working on a qpa in this rack you also want to pull the 110VAC cord for the qpa if you are removing the qpa. See procedure on the web.
<http://www.c-ad.bnl.gov/ceps/files/pdf/TQPSReplacementPro.PDF>
- 2) If the sitewide name does not have a "tq" in it then it is either a nested quad or a nested dipole.
- 3) If the sitewide name has a "dhx" or a "dh0" in it then it is a nested dipole p.s. You must lock out the:
 - a) 480VAC for this blue or yellow p.s.and
 - b) the main dipole ramp and main dipole flattop p.s.'s (blue or yellow) and
 - c) the 2 quench switches at 1010A (blue or yellow)
 - d) **FOLLOW THE PROCEDURE ON THE WEB FOR THIS.** This procedure contains all of the p.s. sitewide names that are nested dipoles p.s.'s. I will e-mail links.
 - e) Unlocking and restoring the main p.s.'s is also very important and this procedure is also on the web.
- 4) If the sitewide name does not have a "tq" or a "dhx" or a "dh0" in the sitewide name then it is a nested IR quadrupole p.s. An example is "qf2" in the sitewide name. For a nested quad you must lock out:
 - a) If the p.s. is in a rack then you must lock out the 208VAC for this rack and

- b) The main quadrupole ramp and flattop p.s.'s. If there are 2 blues in the rack only lock out the blue mains. If there are 2 yellows in the rack then lock out only the yellow mains. If there is a yellow and a blue in the rack then lock out both the yellow and blue mains.
- c) If the quadrupole p.s. is a stand alone p.s. then you must lock out
 - i) 480VAC for this blue or yellow p.s. and
 - ii) The main quadrupole ramp and flattop p.s.'s (blue or yellow)
 - iii) Unlocking and restoring the main p.s.'s is also very important and this procedure is also on the web.

PLEASE SEE ILLUSTRATIONS THAT FOLLOW.

THESE ILLUSTRATIONS ARE NOT A SUBSTITUTE FOR THE PROCEDURES BUT MERELY AN AID.

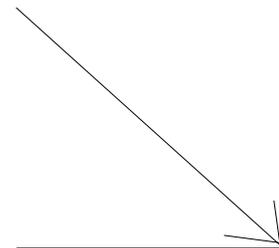
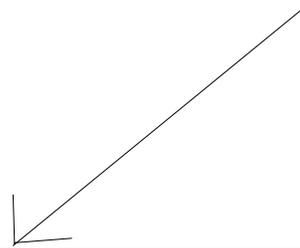
THE PROCEDURES MUST BE FOLLOWED WHEN PERFORMING LOCKOUT OF THE RHIC IR POWER SUPPLIES.

Rack

**Nested Yellow Quad P.S.
(or power supplies)
(located in any building)**

Note: If this is a tq p.s. then just lock out this rack

**LOCK OUT 208VAC TO THIS RACK AND
LOCK OUT**



**PYQFT
Main Power Supply Yellow Quad Flattop
(located in 1004B)**

**PYQR
Main Power Supply Yellow Quad Ramp
(located in 1004B)**

Rack

Nested Blue Quad P.S.
(or power supplies)
(located in any building)

Note: If this is a tq p.s. then just lock out this rack

**LOCK OUT 208VAC TO THIS RACK AND
LOCK OUT**

PBQFT

Main Power Supply Blue Quad Flattop
(located in 1004B)

PBQR

Main Power Supply Blue Quad Ramp
(located in 1004B)

Rack

Nested Yellow Quad P.S.
Nested Blue Quad P.S.
(located in any building)

LOCK OUT 208VAC TO THIS RACK AND

LOCK OUT

PYQFT
Main Power Supply Yellow Quad Flattop
(located in 1004B)

PYQR
Main Power Supply Yellow Quad Ramp
(located in 1004B)

PBQFT
Main Power Supply Blue Quad Flattop
(located in 1004B)

PBQR
Main Power Supply Blue Quad Ramp
(located in 1004B)

Stand Alone P.S. (not in rack)

Nested Yellow Quad P.S.
(located in any building)

**LOCK OUT 480VAC TO THIS P.S. AND
LOCK OUT**

PYQFT
Main Power Supply Yellow Quad Flattop
(located in 1004B)

PYQR
Main Power Supply Yellow Quad Ramp
(located in 1004B)

Stand Alone P.S. (not in rack)

Nested Blue Quad P.S.
(located in any building)

**LOCK OUT 480VAC TO THIS P.S. AND
LOCK OUT**

PBQFT
Main Power Supply Blue Quad Flattop
(located in 1004B)

PBQR
Main Power Supply Blue Quad Ramp
(located in 1004B)

Stand Alone P.S. (not in rack)

Nested Blue Dipole P.S.
(located in any building)

**LOCK OUT 480VAC TO THIS P.S. AND
LOCK OUT**

PBDFT

Main Power Supply Blue Dipole Flattop
(located in 1004B)

PBDR

Main Power Supply Blue Dipole Ramp
(located in 1004B)

Stand Alone P.S. (not in rack)

Nested Yellow Dipole P.S.
(located in any building)

**LOCK OUT 480VAC TO THIS P.S. AND
LOCK OUT**

PYDFT

Main Power Supply Yellow Dipole Flattop
(located in 1004B)

PYDR

Main Power Supply Yellow Dipole Ramp
(located in 1004B)