

Nested Rack Mounted QPA Replacement Procedure

Procedure for replacing a QPA that has a “qd1 or qf1 or qd2 or qf2 or qd3 or qf3 or qf6 or qd6 or q6 or qf8 or qf9 or q89 or qd9” in the sitewide name

1. Before you replace this QPA, you must follow the Lockout Tagout Procedure for the blue nested IR quads or the yellow nested IR quads then resume with this procedure.
2. If you have labels you should bring them out with you to the QPA you will be working on. Bring a key to unlock the rack door. Bring a 7/16” socket and socket wrench also to open up the rear door.
3. Go to the QPA, that must be replaced. Confirm that it is a QPA that has a “qd1 or qf1 or qd2 or qf2 or qd3 or qf3 or qf6 or qd6 or q6 or qf8 or qf9 or q89 or qd9” in the sitewide name. For example if the QPA sitewide name is “bi8-qf3-qp” then it is a qf3 QPA. If the QPA sitewide name is “yi7-qf9-qp” then it is a qf9 QPA. The manufacturer of this QPA is APS. The photo below shows you what one type of QPA looks like. The QPA is the white box on the top labeled APS and has the green LED’s on the right hand side. The red box under the QPA is a p.s.



4. Now that you have found the QPA you are interested in you will find there is usually another QPA in the same rack with the QPA you are replacing. The q6 QPA's in service buildings 1002B, 1006B, 1008B, and 1012A are alone.

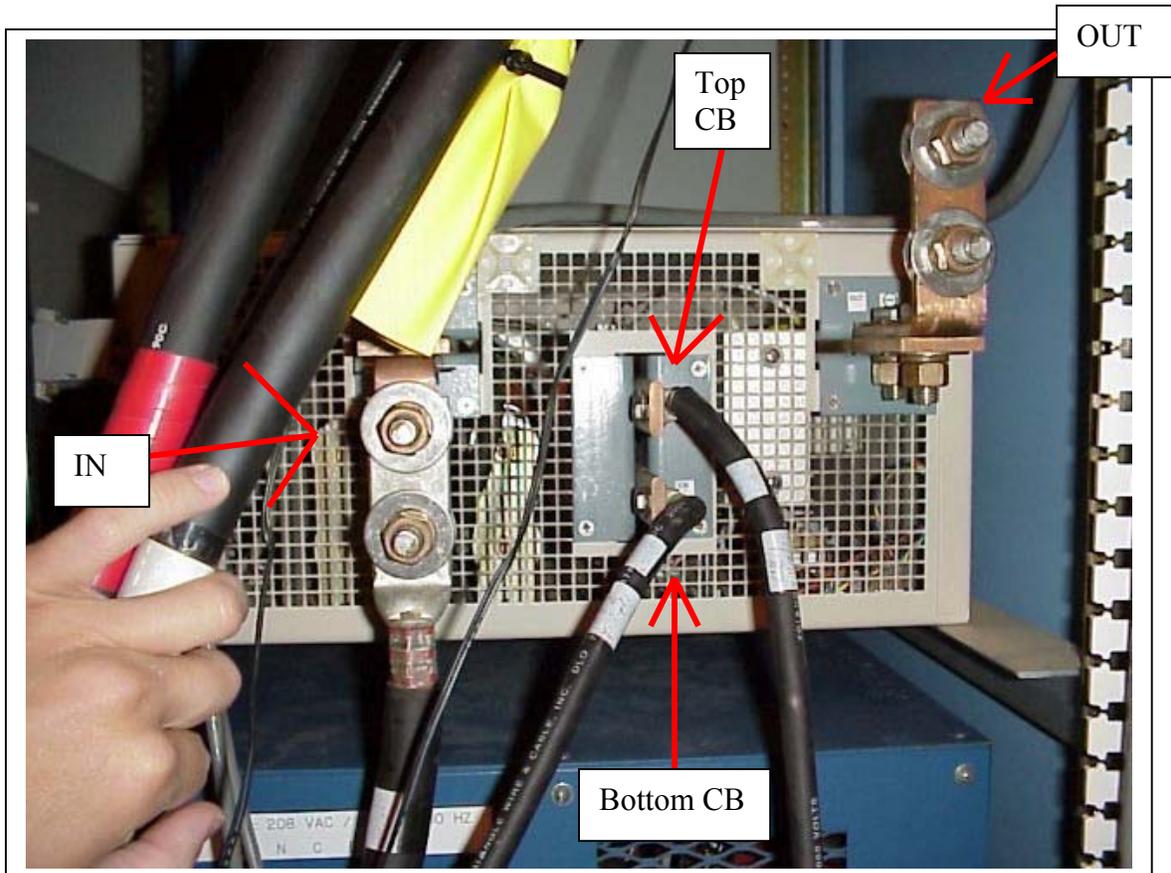
5. If you have followed the blue or yellow nested IR lockout procedure properly then the p.s. connected to the QPA you are replacing should be in the OFF state at this point. If there is another p.s. in this rack then it should also be in the OFF state. The circuit breakers on the front of these two p.s.'s should also be OFF.

6. The disconnect switch, or circuit breaker, that feeds the AC power to this rack should be OFF and locked out. The main quad p.s.'s (blue or yellow) should also be locked out at this point. The blue main quad p.s.'s should be locked out if you are replacing a blue QPA and the yellow main quad p.s. should be locked out if you are replacing a yellow QPA. If you are replacing a blue QPA and the other QPA in the rack is yellow then you must lock out both the blue and yellow main quad p.s.'s. If you are replacing a yellow QPA and the other QPA in the rack is blue then you must lock out both the blue and yellow main quad p.s.'s.

7. Open up the rear door of the rack with a 7/16" socket and rack key if locked. Now unplug the 110V line cord for the QPA you will be replacing. Check that it was plugged into a surge suppression device and make sure it gets plugged into the surge suppression device again when you are done.

8. If you have labels with you then you should label all of the DC cables that get connected to the QPA. If you don't have labels then you should remember how the DC cables get connected to the QPA. The existing labels may not be correct. Look at the labels before you remove the DC cables and mark down where they are connected to on the QPA.

9. There are 4 terminals on the QPA. They are normally labeled “IN”, “OUT”, “CB” and “CB”. Make sure the label you put on the CB cables tells you which CB to re-attach to. The cable that was attached to the top CB terminal should be re-attached to the top CB terminal. The cable that was attached to the bottom CB terminal should be re-attached to the bottom CB terminal. The photo below shows you what a typical QPA looks like on the rear:



10. Once you have written down the existing labels and how the DC cables are connected to the QPA you can remove all of the DC cables. Make sure the cables are removed from all 4 terminals. Be sure to use 2 wrenches on the buses when removing the DC cables so you do not place any stress on the buses and break them off internally.

11. Remove both D connectors on the top left hand side on the rear of the QPA.

12. Next, make sure you remove the screws that screw the QPA into the rack. These are on the front of the QPA. **Do not remove the screws that hold the front panel of the QPA onto the front of the QPA.** You can now unscrew the front of the QPA and slide it out. The QPA is sitting on 2 shelves, it can fall off when you slide it out so be careful. Someone should be in the rear of the rack watching that no cables get hung up on the QPA as you are sliding it out.

13. The spare QPA's are in 1007W. Pick one up and bring it to where you will be installing it. Make sure that the spare QPA you take from 1007W has a label on it that says "READY FOR SERVICE". Make sure you choose the correct model number QPA. It should match the model number of the QPA you are removing.

14. If you look at the top of the QPA there is a square metal tag attached to the top that tells you the model number of the QPA. This photo below shows you the metal tag on the top of this QPA.



15. Slide in the spare QPA. BE CAREFUL NOT TO OVERTIGHTEN THE CONNECTOR SCREWS ON THE D CONNECTOR SHELLS. MAKE SURE YOU USE 2 WRENCHES ON THE BOLTS OF THE DC BUSES.

16. Re-connection list:
- a. D Connectors
 - b. DC Cables
 - c. Plug in the 110V cord into surge suppressor
 - d. Screw in the front of the QPA to the rack

17. Bolt up the rear door when done.

18. Unlock and turn on the disconnect for the rack and then turn on the circuit breakers for both of the p.s.'s in this rack. Put the p.s. into LOCAL and STANDBY. Wait about 10 seconds and then press the RESET Pushbutton. You should have only the quench fault on the control card. You can now put the p.s. back into REMOTE. You must now unlock the main quad p.s.'s you locked out and then hand the p.s.'s back over to MCR.