

PROCEDURE / JOB HAZARD ANALYSIS

JOB NAME: Move BLS POWER SUPPLY to/from DZero Collision hall storage locations to/from 3rd floor DAB electrical tech shop by PPD/MD/DZero Operations group personnel only.

LOCATION: DZERO ASS'Y BLDG. AND DZERO COLLISION HALL

ESTIMATED DATES OF OPERATION: 10/21/09 – 10/20/10

DESCRIPTION OF WORK: Physical move of power supply using carts, crane, hoisting rails, manual lifts. This procedure/job hazard analysis is written assuming that the starting location is the 3rd floor tech shop. Reverse the procedures starting at step 13 to move from collision hall storage location.

GENERAL: The BLS power supply is a heavy, bulky object. It is approximately 18 1/4" deep excluding handles, 19" wide at the front panel, and 10 1/4" tall. It weighs approximately 120 lbs. The lifting bars add about 6 lbs. of additional weight. This object should only be moved by strong, physically fit, workers capable of handling this weight. The power supply has fragile internal components that must not be subjected to shocks. The preferred orientation is horizontal as installed or with the front panel up. Do not turn it upside down.

REQUIRED TRAINING: Back works training, crane training (one person), Collision hall access required training that includes, radiation worker, controlled access (if applicable), basic electrical safety, D0 hazard awareness.

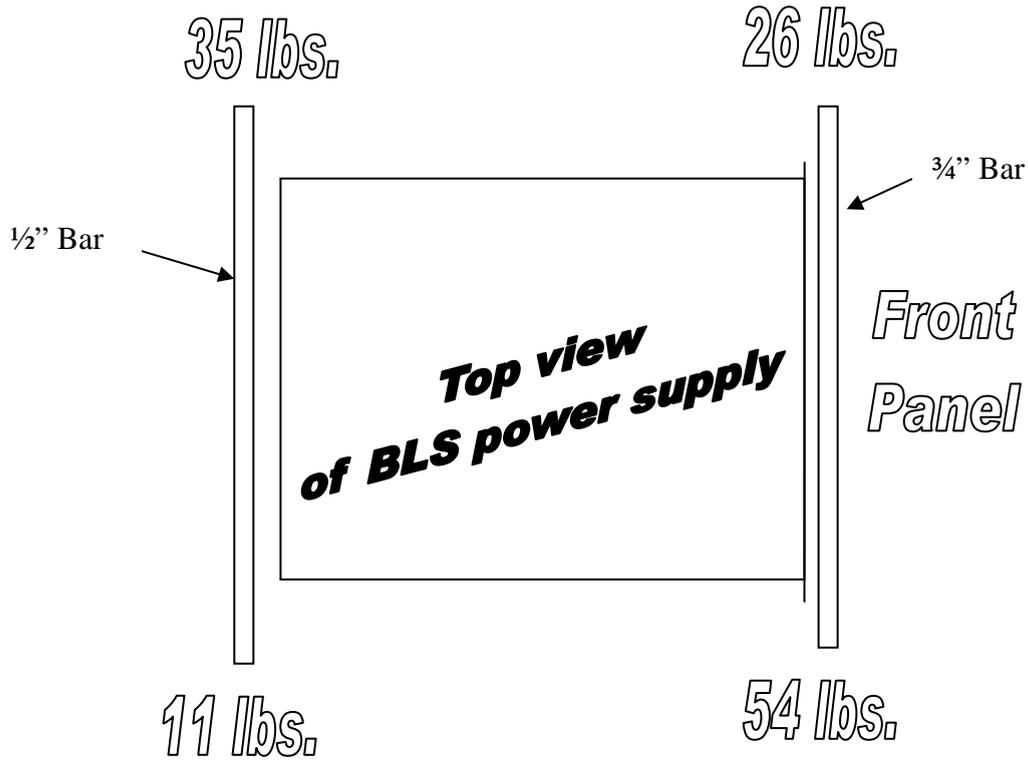


Fig. 1. Weights (including bars) when carried horizontally. Total weight = 126 lbs.



Picture 1. BLS power supply carried horizontally with two lifting bars. Note the square collars capturing left front handle. Leather gloves are optional.

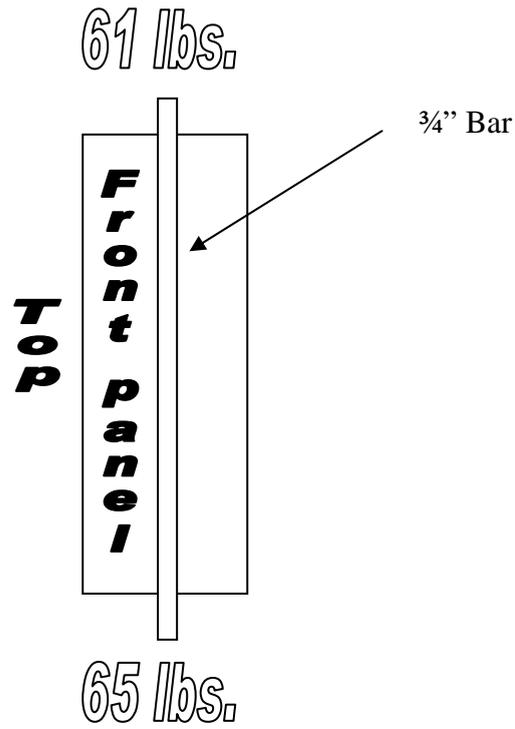
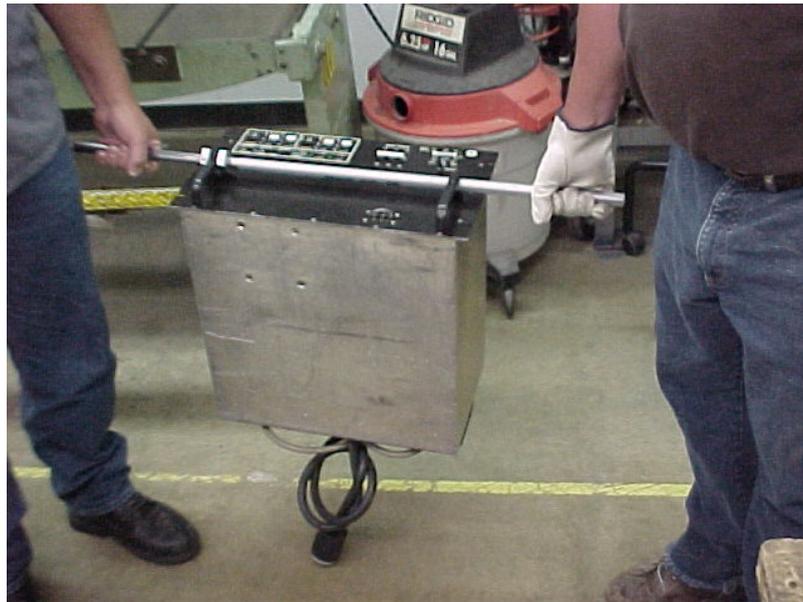


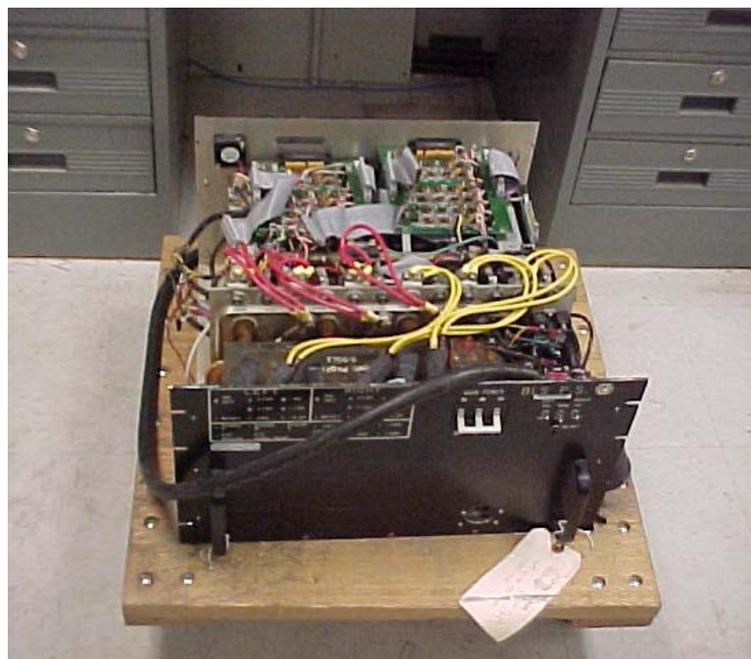
Fig. 2. Weight (including bar) when carried with one bar with front panel up. Total weight = 126 lbs.



Picture 2. BLS power supply carried vertically with front lifting bar. Note the square collars capturing left front handle. Leather gloves are optional.



Picture 3. BLS power supply on hydraulic lift cart.



Picture 4. BLS power supply with top cover removed. Heavy transformer is located on left near the front panel.

Step/Phase of Job	Safety Hazard	Precautions/Mitigation of Hazard
1) Good BLS power supply (PS) is on work bench in 3 rd floor electrical technician office. Verify that PS has been tested and is ready for transfer to the collision hall. Verify PS is disconnected from electrical or water sources.	If PS is not verified to be ready, then the task may need to be repeated, unnecessarily increasing risk. .	Verify with electrical staff the PS is good, ready to be moved and disconnected.
2) Raise hydraulic lift cart located in electrical technician office to the same elevation as the work bench. Apply the wheel brakes on the hydraulic cart. Slide BLS power supply onto hydraulic lift cart.	Hydraulic cart could back away from bench. Smashed fingers. Possible back strain.	Technicians are located on either side of the cart. Steel toed shoes must be worn. Technicians lift up on handles on leading edge of PS during sliding motion. Minimize any reaching.
3) Wheel brakes are released. Hydraulic lift cart is moved a short distance to line up with a common 4 wheel wooden cart. Lower the lift table to the same elevation as the wooden cart. Technicians slide PS onto wooden cart.	Wood cart will move away. Possible back strain.	Technicians lift up on handles on leading edge of PS during sliding motion. Technicians are positioned on either side of PS. Brace wood cart against a fixed object to keep it from rolling.
4) Roll PS to DAB 3 highbay. Fasten slings around the cart and PS. Use crane to lift. Move PS to north west sidewalk location just opposite NW stairwell door.	Cart is low and could bump into personnel who aren't looking where they are going. Persons coming out of offices also are at risk of a collision.	One of the two technicians is a look out and leads, warning or clearing the way as necessary. Only crane trained technicians sling and operate the crane.
5) Obtain all required PPE for collision hall access. Obtain access keys. Roll PS thru stairwell door and collision hall door (or gate). Roll to the north sidewalk, east side. Insert ¾" lifting bar through front handles and ½" lifting bar through back handles. Position the bars so the collars catch the handle.	Collision with unsuspecting people in the pathway.	Scout out the route beforehand. One technician opens doors and leads. Collision hall access requirements (TLD, hard hat, required training, LSM if controlled access) apply.
6) For east side storage location: Manually lift the power supply off the cart. Carry power supply onto the cable bridge grating (four stairs higher). Move 4 wheel cart to the side or under north truss to clear the walkway.	PS weighs ~ 126 lbs. With lifting bars. Possible back or muscle injury if proper lifting technique isn't used. Scrapes and bumps. Pinched hand on bar against handle.	Technicians must have completed back works safety training, are capable to lift 65 lbs and are feeling capable to do the lift on this day. Lift using legs and not backs. Do not reach or twist during lifting and moving. Steel toed shoes and long pants are required. Lifting bars have collars that the handles fit into to keep them from sliding.
7) For west side storage location: Lift and carry power supply westward to the west end hoisting rail. Move 4 wheel cart to the side or under north truss to clear the walkway.	Same as step 6.	Same as step 6.
8) Slide the PS under the hoisting rail. Using the slings in a criss-cross pattern through the handles, attach to the hoist. Place an empty four wheeled cart in the pit below to accept the PS.	Overhead object, restricted space cause risk of bumps.	Be aware of surroundings. Remove any obstacles. Do not rush.
9) Raise the power supply with the hoist to a height to clear the handrail. Move the power supply to the south, extending the boom rail to the south. Use the chain or PS to move the hoist, not the control pendant. Lower the PS onto a wooden cart.	Could drop power supply if not properly slinged.	Stay to the side of the PS. Never go under the load or let others get into such a position. Person slinging PS has crane training.
10) Lower the power supply onto a 4 wheeled cart. Remove the slings and return hoisting rail to raised, northward position. Use the chain or PS to move the hoist, not the control pendant.	Could drop power supply if not properly slinged.	Stay to the side of the PS. Never go under the load or let others get into such a position.

PROTECTIVE EQUIPMENT CHECKLIST
(CHECK ALL PPE REQUIRED FOR THE JOB TASK)

EYE & FACE

- Safety Glasses w/ side shields
- Chemical/Splash Goggles
- Impact Goggles
- Full Face Shield (worn over 1, 2, or 3 only)
- Cutting Goggles
- Welding Hood
- Other _____

HAND (Gloves)

- Cloth
- Leather - Optional
- Welding
- Metal Mesh
- Electrical Insulated
- Synthetic (Circle One)
Rubber, Neoprene, Latex,
Butyl, Vinyl, Nitrile
- Other _____

FOOT

- Hard Toe Shoes/Boots
- Dielectric
- Neoprene
- Rubber
- PVC / Urethane
- Metatarsal Guard
- Other _____

RESPIRATORY PROTECTION

- Dust Mask
- Fumes/Mist Mask
- Half Face Filter
- Full Face Filter
- Full Face Airline
- Full Face SCBA
- Emergency Escape Pack
- Emergency Escape Disposable

PROTECTIVE CLOTHING

- Nomex / FRC
- Tyvek Suit
- Rainsuit
- Acid Suit
- Encapsulating Suit
- Other Full length pants to protect against scrapes _____

HEARING

- Ear Plugs.....or
- Canal Caps
- Ear Muffs.....
- Dual Protection
- Other _____

HEAD

- Class A Hard Hat (limited voltage) Collision hall requirement.
- Class B Hard Hat (High voltage)
- Chin Strap
- Other _____

List Any Other PPE Not Indicated Above: Proper radiation dosimetry for DZero collision hall access.

Log survey meter (LSM) required during controlled access to DZero collision hall _____

Does the task present potential exposure to hazardous chemicals? YES NO

If yes, has the MSDS for each hazardous chemical been reviewed? YES NO