

8.33 J10 Dump Bump Power Supply Operating Procedure

1. Purpose and Scope

This procedure defines the operation of the J10 Dump Bump Power Supply. The purpose of this procedure is to ensure the safe operation of the J10 Power Supply.

2. Responsibilities

- 2.1 The authorized C-A Main Control Room Coordinator, or their designee, are responsible for unlocking the power supply and insuring that all aspects of this procedure are implemented.
- 2.2 The Power Supply Group and C-A Watch are responsible for the operation and lockout of the J10 Power Supply.

3. Prerequisites

- 3.1 Operation of the power supplies shall be coordinated with the C-A Main Control Room Coordinator, or their designee.
- 3.2 The authorized PS Group and C-A Watch Technicians shall be experienced with high power SCR controlled power supplies, and shall be trained in the lockout and operation of the J10 Power Supply. The C-A Watch Technicians shall be familiar with power supply schematic diagrams and operations manuals.
- 3.3 Training:
 - 3.3.1 PS Group and C-A Watch: Electrical Safety - 1
 - 3.3.2 PS Group and C-A Watch: Lockout / Tagout
- 3.4 All personnel working on any electrical system or equipment in the C-AD shall be familiar with BNL [SBMS Electrical Safety](#), BNL [SBMS Lockout/Tagout \(LO/TO\)](#), [C-A-OPM 1.5, "Electrical Safety Implementation Plan"](#), [C-A-OPM 1.5.3 "Procedure to Open or Close Breakers and Switches and Connecting/Disconnecting Plugs"](#), [C-A-OPM 2.36, "Lockout/Tagout for Control of Hazardous Energy"](#). C-AD will provide on-site/work specific training to individuals in the electrical safety aspects of their job functions and assignments.

4. Precautions

- 4.1 The J10 Dump Bump Power Supply will be powering a set of back leg windings in the following magnets: J19, J18, K12, K13, J4, J5, I10 and I11. The AGS MMPS induces a high voltage back to the back leg winding. It is therefore required that the AGS MMPS must be locked out before entering the high power section of the power supply.

- 4.2 The Kirk Lock scheme has been designed to prevent entry into the Power Supply unless the AC disconnect switch of the power supply is locked out.
- 4.3 J10 Dump Bump Power Supply:
- 4.3.1 This is a 225 KW AC to DC converter, capable of delivering 750 amperes at approximately 300 volts. The nature of this extremely high power system dictates caution and diligence.
- 4.3.2 The system is protected with automatic interlocks such as:
- Over currents
 - Over voltages
 - Over temperatures
 - Ground Faults
 - Water Flow
- The system should not be operated if any system interlocks are suspect.
- 4.3.3 The J10 power supply has been built with dead front construction and is secured with KIRK type locks that prevent access to the energized components, while connected to the AC electrical line.
- 4.3.4 The J10 power supply is located in the J18 Modulator house.

5. **Procedure**

- 5.1 Power Supply Start Up:
- 5.1.1 The J10 Power Supply shall be energized in accordance with the [C-A-OPM-ATT 8.33.a, J10 Power Supply START-UP Check Off List](#).
- 5.2 Power Supply Shut Down:
- 5.2.1 The J10 Power Supply shall be shut down in accordance with the [C-A-OPM-ATT 8.33.b, J10 Power Supply SHUT-DOWN Check Off List](#).
- 5.3 Power Supply Tap Change:
- 5.3.1 The J10 Power Supply shall have the tap change in accordance with the [C-A-OPM-ATT 8.33.c, J10 Power Supply Tap Change Check Off List](#).

6. **Documentation**

- 6.1 The PS Group and C-A Watch shall maintain a power supply Log Book to record all activities related to the power supplies, such as start up, shut down, tap change, faults and modifications.
- 6.2 All completed check off sheets shall be signed and kept in a binder in the J18 house.

7. **References**

- 7.1 None

8. **Attachments**

- 8.1 [C-A-OPM-ATT 8.33.a “J10 Dump Bump Power Supply START-UP Check Off List”](#).
- 8.2 [C-A-OPM-ATT 8.33.b “J10 Dump Bump Power Supply SHUT-DOWN Check Off List”](#).
- 8.3 [C-A-OPM-ATT 8.33.c “J10 Dump Bump Power Supply TAP Change Check Off List”](#).
- 8.4 [C-A-OPM-ATT 8.33.d “One line diagram of the J10 Dump Bump Power Supply”](#).
- 8.5 [C-A-OPM 1.5, “Electrical Safety Implementation Plan”](#).
- 8.6 [C-A-OPM 1.5.3 “Procedure to Open or Close Breakers and Switches and Connecting/Disconnecting Plugs”](#).
- 8.7 [C-A-OPM 2.36, “Lockout/Tagout for Control of Hazardous Energy”](#).
- 8.8 [SBMS Electrical Safety](#).
- 8.9 [SBMS Lockout/Tagout \(LOTO\)](#).