
TOROID POWER SUPPLY
TURN ON PROCEDURE

This procedure describes how to turn on the Toroid Power supply .

Approvals:

(CDF Department Head)

(Date)

1.0 Controlled Copies of this procedure.

Copies of this procedure are located in :

1. CDF Department Office
2. CDF Gas Tech. Operations Bench
3. CDF Operations Electrical Group Leaders Office.

All other copies will be marked, " INFORMATIONAL COPY ONLY "

2.0 The Procedure.

This Procedure should be done by only trained personnel only.

**This procedure must be done if any of the following conditions apply.
Check with the CDF Operations Manager.**

- A. If an open or supervised access has occurred.**
 - B. If a controlled access has occurred and work has been done on, near or above toroid magnets.**
 - C. If a building power outage has occurred.**
1. CDF procedure 501 "Toroid magnet Check List " and CDF procedure 502 " LCW Check List " must be done before continuing on with this procedure.

FOLLOW ALL NUMBERED STEPS IN SEQUENCE

IF A SYSTEM DISCREPANCY EXISTS IN ANY OF THESE CHECKS, PLEASE CALL GAS TECH ON PAGE 410. IF PROBLEMS PERSIST, GAS TECH WILL CALL THE BUILDING MANAGER.

2. Check Collision Hall air ventilation system. (lower level elevator area.) Fans to be checked are: FC-1, FC-2, FC-3 and FC-4. Any 2 of 4 should be ON.
3. Obtain permission to turn on TOROID POWER SUPPLY from the CDF Scientific Coordinator (ext. 2079). It is normally set to 600 Amps.
4. Have the SOD Operator obtain permission, to turn on, from the Accelerator Main Control Room Crew Chief (ext. 3721) and schedule accordingly. Wait for the SOD operator to tell you that he has received permission to turn on.
5. Make sure that the Accelerator safety system interlock cable is connected on top of the toroid power supply.
6. Turn on 1000 amp circuit breaker in power panel DP-B0-3, location: Cryo-console area. NOTE: Rotating red light at Power Supply Magnet Filter should now be ON.
7. Unlock power supply disconnect. The key for the "Toroid Administrative Lock" can be obtained from cryogenics personnel. It is key #17 in their key tree.

Keys to administrative locks are only issued to personnel trained and authorized to operate the device in question. The training insures that qualified operators are familiar with all the hazards associated with the equipment.

8. Turn on power supply disconnect.
9. Control function switch should be in Local.
10. Turn on control power switch.
11. Reset interlocks (fault reset).
12. Power supply operating mode - current regulate mode.
13. Reference module - Internal
14. Time Constant setting - .3 seconds
15. Check internal reference potentiometer control - it should be set to zero on reference module.
16. Turn D.C. on.
17. Maximum operating current is 1000 amps. Begin slowly !! increasing internal reference on reference module to requested operating current Approximately $\Delta v/\Delta t = 10$ volt/sec. It is usually 600 Amps.
18. Monitor current at digital panel readout meter. This will display the current flowing through the Toroid. 1 volt = 125 amps.

Note: Analog Front Panel Voltage and Current meters should not be relied upon.

19. Sign toroid check off sheet on front of toroid power supply.

3.0 Checklist

See Next Page

4.0 Deviations from the Procedure

NONE

5.0 Required Training and Authorized Training Personnel.

You must go through this procedure with an instructor and demonstrate that you have a good working knowledge of it.

The training must be documented on a standard Fermilab Training Form and the completed form must be inserted in the CDF Department Office copy of this procedure.

List of authorized instructors.

Keith Schuh	ID # 2282
Mark Knapp	ID # 5384

Both are qualified because of work experience with the toroid system.

6.0 Training Materials.

Section 2.0 of this procedure, a Fermilab training sheet and a tour of the toroid power supply and LCW system. CDF PROC- 501,502

7.0 List of Trained People for this procedure.

Eventually the list may reside in a lab-wide database.

Until that time, a list of trained personnel for this Toroid Turn on Procedure should be maintained in the CDF Department Office copy of the procedure in a separate section at the end of this procedure.

The CDF Department is responsible for the list and for updating all the copies.

8.0 References and Supporting Documentation.

None