

TOROID POWER SUPPLY **LCW CHECKLIST PROCEDURE**

This procedure describes how to check the low conductivity water system in the assembly building prior to Toroid Power supply turn on.

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.

**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.**
- D. If any work has been done on the LCW water system.**

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.

1. Perform the following checks which will confirm that the LCW cooling system is operating properly. These checks are all performed in the Main Floor Mechanical Room NUMBER 102 in the southwest corner of the building.
 - A. Select an LCW pump based on shortest run time as indicated by hour meter located on pumps. Connect selected pump to variable speed controller using double-throw switch located between the pumps. Turn variable speed controller on and adjust speed for 175 PSIG supply pressure gauge designated red tag #6.
 - B. Check de ionizing flow indicator FIDI on the west wall (FI DI, red tag #5). It should read approximately 15 gallons per minute.
 - C. Check LCW heat exchanger pressure for an approximate reading of 45 to 90 PSIG. Red tag #4 just inside door.
 - D. Check LCW Return Pressure for an approximate reading of 20 PSIG Red tag #7, west wall of Pump room.
 - E. Check Cooled Return Temperature Indicator Number (TIRI), which is located above right of the LCW Pump No. 1, for a temperature reading not to exceed 104 degrees F. Red tag #9.
 - F. Check Conductivity Meters (west wall) for DI System and DI bottle readouts. Both should be between 10-15 Megohms.

Red tag #8. Notify Gas Tech. if lower then this. **Do not operate the toroid if lower then 5 Megohms.**

2. Check LCW pressure in all four quadrants of the magnets, this can be done in the control room at console D on cameras A,B,C and D which correspond to Northwest, Northeast, Southeast and Southwest respectively when you do not have access to the collision hall. Pressure should indicate greater than 100 PSIG (second major division) on all gauges.
3. Check Toroid Power Supply water Supply and Return Valves located near building steel column J4 (East end of building). They should both be ON.
4. Check Toroid Power Supply Magnet Filter water Supply and Return Valves (4 valves) which are also located near column J4. They should all be ON.
5. Sign toroid checklist 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 LCW system.

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 LCW Checkout 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