If you are using a printed copy of this procedure, and not the on-screen version, then you MUST make sure the dates at the bottom of the printed copy and the on-screen version match.
The on-screen version of the Collider-Accelerator Department Procedure is the Official Version.
Hard copies of all signed, official, C-A Operating Procedures are kept on file in the C-A ESHQ Training Office, Bldg. 911A.

C-A OPERATIONS PROCEDURES MANUAL

7.3.1 RF Gun Operation Procedure

Text Pages 2 through 3

Hand Processed Changes

HPC No.	Date	Page Nos.	Initials

Approved: ***Signature on File*** _____
Collider-Accelerator Department Chairman Date

G. Citver

RF Gun Operation Procedure

1. Purpose

This procedure provides instructions for RFSC cavity cool-down and warm-up. The cavity is installed in cryostat located in Building 939.

2. Responsibilities

2.1 Should a problem arise, operator shall report to Technical Supervisor.

3. Prerequisites

3.1 The operator shall be trained by the cognizant engineer.
3.2 System should be pumped and purged 3 times using He.
3.3 Insulation vacuum better than 10-5 torr should be established.
3.4 500 liter LHe dewar, with at least 200 liters inside, should be available.
3.5 Vent lines N2 and He should be connected to outside.
3.6 Valves position:
Opened: H9921A, H9925A, H9881M, H9888M, H9882A & H9924A
Closed: H9926A & H9927A

4. Precautions

4.1 If there is liquid helium in the experimental room, all personnel entering the room must be ODH Class 0 qualified.

5. Procedure

5.1 Cool-down to 4.2 K

5.1.1 Contact 902 Cryogenic Facility (x2344) to let them be prepared to get He to dirty gas bag in Building 902.

5.1.2 Open v.N6005M to fill LN2 in Heat Shield to 100% according LT92N level probe.

5.1.3 Insert LHe transfer line into 500 liter LHe dewar and attach it to cryostat through bayonet connection.

5.1.4 Open v. H9922M to transfer LHe from 500 LHe dewar into the cryostat up to 100%, according LT91H level probe.
- Use regulator on cylinder for pressurizing 500 liter LHe dewar.
- Provide the required cool-down speed by pressurizing 500 liter LHe dewar through v. H9886M. Do not exceed relief pressure 15 psig.

- Monitor cooldown speed – it should be equal, or more than 10 K/min as read on TT905H, while passing down the temperature range 160K – 60K. Log the LHe fill in flow rate, which provided 10 K/min cooldown rate.

5.1.5 Direct the evaporated He (during the cryostat cool-down) to the existing plastic piping through valve H9925A.

5.2 Cool-down to 2 K

5.2.1 When cryostat is 100% full wth LHe, close fill-in-valve H9922M.

5.2.2 Open v. H9926A and H9883M, (or H9927A and H9884M, depending on which vacuum pump will be run).
- Start appropriate vacuum pump
- Close v. H9925A if not closed automatically

5.2.3 Establish 1.8 K, as read on TT910H, by setting constant absolute pressure P = 12 torr (1660Pa) as read on PT602H via control valve H9921A.

5.3 Warm-Up

5.3.1 Valves Position:
Opened: H9921A, H9925A, H9881M, H9888M, H9882A & H9924A
Closed: N6005M, H9922M, H9926A & H9927A

5.3.1.1 Disconnect LHe transfer line from cryostat.

5.3.1.2 Turn heater on to speed up the cryostat warm-up if necessary.

5.3.1.3 Turn off the heater when cavity temperature close to 273 K.

6. Documentation

None

7. References

7.1 P&ID Drawing No. 3A995119

8. Attachments

None