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C-A OPERATIONS PROCEDURES MANUAL

12.25 TtB 2-Stage Checklist

Text Pages 2 through 4

Hand Processed Changes

<u>HPC No.</u>	<u>Date</u>	<u>Page Nos.</u>	<u>Initials</u>
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Approved: _____ *Signature on File* _____
Collider-Accelerator Department Chairman Date

C. Carlson

12.25 TtB 2-Stage Checklist

1. Purpose

The purpose of this procedure is to define the sequence of activities required to set up the facility for TtB 2-Stage.

2. Responsibilities

It is the responsibility of the person or persons executing this procedure to observe all safety rules.

3. Prerequisites

The person or persons executing this procedure shall have all formal training required of a TVDG Operator.

4. Precautions

No special precautions are required.

5. Procedure

Checklist (when indicated by “___”, initial step upon completion)

- 5.1 _____ Insure that all TVDG Sun computers are working and have the following programs available to run: StartUp, Archive Manager, Beamline Instrument, Spreadsheet, Alarm Display, MUX.
- 5.2 _____ Insure that all devices are working; Faraday Cups, Harps, Transformers.
 - 5.2.1 Record offsets using [Faraday Cup Offsets Form](#)
- 5.3 _____ Insure that all timing signals are good at all locations as per [TtB Timing Checklist](#)
- 5.4 _____ Insure that TtB vacuum is good and that all valves are open.
- 5.5 _____ Obtain a Setup Sheet printout from the Tandem program for the beam to be run.
- 5.6 _____ Turn on Main Breakers on the following power supplies in TR-3;

- 5.6.1 Dipole Magnets - (See [11DH02 Lockout Tagout Form](#) for special instructions regarding the 11DH02 Magnet)
- 5.6.2 Quads
- 5.6.3 Trims
- 5.6.4 Turn on the above power supplies using Spreadsheet/Tandem/Location/PS. Send appropriate archive values to all supplies for beam being run. Print the archive of all values in all sections.
- 5.7 _____ Degauss the MP-7 Analyzer Magnet.
- 5.8 _____ Verify that the source is operating and can produce DC beam.
- 5.9 _____ Insure that source aperture is in. Tune source in DC mode until there is about 20 nADC in the LE cup. Remove aperture and check beam intensity.
- 5.10 _____ Insure that the chopper is on and connected.
- 5.11 _____ Set the slits as follows:
 - 5.11.1 _____ 10/20 LE/HE = 10/10 Up/Dn = 10/10
 - 5.11.2 _____ 11/30 LE/HE = 1/1
 - 5.11.3 _____ 11/60 LE/HE = 5/5 Up/Dn = 5/5
 - 5.11.4 _____ HVEC Object = 800 square
- 5.12 _____ Verify that the slit amplifier is powered on. Apply a test signal to amplifier inputs and verify readings on slit meters in Control Room.
- 5.13 _____ Insert the appropriate post-stripping foil and record the position and thickness.
- 5.14 _____ Set all 13 TtB zones and disable MP-7 HE zone after completing the 3 charge state beam verification. (See [Converting Radsafe System To And From TtB Operation](#)).
- 5.15 _____ Insure that a waveform(square-wave) generator is available at rack 28.

- 5.16 _____ Connect and enable the Beam Loss Alarm and the TBeam and 21XF counters.
- 5.17 _____ Remove the MP-7 NII Preaccel aperture.
- 5.18 _____ Connect the 11/30 slits for machine regulation.
- 5.19 _____ Connect and set up the Digital Storage oscilloscope on top of rack 11.
- 5.20 _____ Verify that the 10-20 slits and the 11-60 slits are terminated.
- 5.21 _____ Connect the AGS Faraday Cup Control as follows:
 - 5.21.1 AGS Faraday Cup Control 'AGS INPUT' to Rack 18 Patch Panel E5 'AGS LE Cup Control'.
 - 5.21.2 AGS Faraday Cup Control 'TANDEM OUTPUT' to Rack 18 'Gate In'.
 - 5.21.3 Rack 18 'Short Out' to Rack 18 'Remote Image Cup Control'.
 - 5.21.4 Rack 18 'Remote Image Cup Control' (use BNC 'T' connector) to Rack 12 Pulsed Source Watchdog Timer 'LE Cup Ctrl'.
- 5.22 Operators:_____ Date:_____ Time:_____
- 5.23 Supervisor Approval:_____ Date:_____

6. Documentation

Completed checklist shall be maintained in the TVDG Control Room.

7. References

- 7.1 [Faraday Cup Offsets Form.](#)
- 7.2 TtB Timing Checklist.
- 7.3 [C-A-OPM 12.20, "11DH02 Lockout Tagout Form".](#)

8. Attachments

None