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C-A OPERATIONS PROCEDURES MANUAL

12.58 Response to TtB Chipmunk Interlock

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Hand Processed Changes

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

C. Carlson

## 12.58 Response to TtB Chipmunk Interlock

### 1. Purpose

The purpose of this procedure is to define the steps necessary to respond to TtB Chipmunk alarms or trips.

### 2. Responsibilities

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

### 3. Prerequisites

- 3.1 MP6 or MP7 to be in the (Light Ion Mode) as per [C-A-OPM 12.57 "TtB Ion Source \(Light Ion\) Startup"](#).
- 3.2 TtB to be swept and secured
- 3.3 12MW30 must be inserted for monitoring light ions in TtB

### 4. Precautions

For deuteron running into TtB, the terminal voltage shall be limited to 6 MV or less. The average intensity must be kept below 200 nA.

### 5. Procedure

If beamstops are inserted due to a Chipmunk trip, or if a Chipmunk alarm is received:

- 5.1 Check that 12FC30 has not been inserted
- 5.2 Check that the intensity at the low energy pulsed transformer and the dc beam at the low energy Faraday cup are both correct, and adjust the source as necessary.
- 5.3 Check that the terminal voltage is at its proper value.
- 5.4 Check that the pulse width and repetition rate are proper, by observing the beam on the LE pulse transformer.
- 5.5 Insert the 12FC165 cup here, to prevent beam from entering minimum shielding area of TtB.
- 5.6 Insert the high energy Faraday cup, reset the Chipmunk interlock, and open the beamstops. Measure the intensity on the Faraday cup and compare to logged values.

- 5.7 Insert the 11FC30 cup. Retract the high-energy cup and compare the current on 11FC30 with logged values. Compare any upstream profiles to logged profiles. If significant differences are observed, check that power supplies are at proper values. Retune as required.
- 5.8 Reduce beam intensity with the rotary aperture to about 20% of the normal value. Retract the 11-30 cup and observe the profile on the 12-30 harp. Compare to logged shape and positions, particularly checking that beam is not hitting the harp frame. If different, retune as required.
- 5.9 Measure the current on the 12FC165 Cup, checking both pulsed and dc intensities. (Intensity still reduced with the rotary aperture). If dc current is higher than expected, check that the wiggler is working properly.
- 5.10 Once all signals look proper, slowly open the rotary aperture to increase the intensity back to the normal running value, while observing the radiation levels on the Chipmunk.
- 5.11 If the Chipmunk continues to trip after (3) iterations of this procedure, or continues to alarm after (5) iterations, contact the Tandem Operations Supervisor, or designee.
- 5.12 Each Chipmunk trip or alarm should be recorded in the Tandem operations log book, along with what steps were taken, if any, to correct the problem. The Tandem Operations Supervisor or his designee should be contacted if there are more than 5 trips in one shift.

## 6. **Documentation**

- 6.1 Chipmunk information to be entered in TVDG Operations Log Book as required by this procedure.

## 7. **References**

- 7.1 [C-A-OPM 12.57 "TtB Ion Source \(Light Ion\) Startup"](#).

## 8. **Attachments**

None