



## 2.1 C-A Operations Organization and Administration

### 1. Purpose

Responsibility for the safe and reliable Operation of the C-A complex resides with the on-duty Operations Coordinator. The Operations Coordinator is the Shift Supervisor for the operating personnel, and the focus for all operations related questions. The C-A complex is made up of a number of facilities that may include the Linac, the AGS ring, the main magnet power supply, the ring rf acceleration system, the injection equipment, the beam extraction equipment, the beam lines, the Tandem-to-Booster transfer line (TTB), the Booster, the AGS to RHIC transfer line (AtR), RHIC Ring, and Tandem Van De Graaff. Personnel that are responsible for the day-to-day operations of these facilities are members of the Accelerator Division, the Experimental Support and Facilities Division (ES&FD), and the Controls Division. Additional personnel who support the operations belong to the ES&H Services Division, the Physics Department, the Chemistry Department, and to the Plant Engineering Division.

### 2. Responsibilities

#### 2.1 Operations

2.1.1 The personnel normally available (see [C-A OPM 2.5](#) for minimum requirements) to the Operations Coordinator during operations include:

2.1.1.1 Two main control room operators, who report to the Operations Coordinator, and are responsible for the control of the Linac, Booster, AGS, and external beams up to the production targets and RHIC.

2.1.1.2 Collider Accelerator Support technicians, who report to the Operations Coordinator, and are responsible for Collider Accelerator Operating Systems.

2.1.1.3 Cryogenic Systems Technicians, who are responsible for the operation of the RHIC Cryogenic and Muon Storage ring, Cryogenic Systems and Cryogenic Targets.

2.1.1.4 Radiological Control Technician (RCT), who reports to the Operations Coordinator, and is responsible for pulsed and residual radiation measurements, and clearing high intensity secondary areas for beam.

2.1.1.5 Tandem Operators.

2.1.1.6 AGS Main Magnet Power Supply (AMMPS) & Operator.

- 2.1.2 Personnel outlined in section 2.1.1 are shown on Attachment 8.1, "Shift Organization Chart".
- 2.1.3 In addition to the operational practices outlined in [C-A-OPM Chapter 2](#), operating personnel have the following safety responsibilities:
  - 2.1.3.1 Safely operate the facility with adherence to procedures, technical specifications and [accelerator safety envelope operating limits](#).
  - 2.1.3.2 Comply with the requirements of Laboratory [Standards Based Management System \(SBMS\)](#).
  - 2.1.3.3 Follow good radiological protection practices and procedures to maintain personnel radiation exposures as low as reasonably achievable, and to reduce the generation of activated materials.
- 2.1.4 Supervisors of the personnel listed in Section 2.1.2 shall periodically review exposure trends of operating personnel.

## 2.2 Scheduling Physicist

- 2.2.1 The Scheduling Physicist, along with the Head of the Experimental Support and Facilities Division, and the Accelerator Division Head, set the schedule for the daily operation of the ion accelerator complex. During RHIC operations, the RHIC Run Coordinator plays a vital role in planning the daily operation of RHIC. The Operations Coordinator is charged with implementing the schedule.

## 2.3 Additional Personnel

- 2.3.1 Additional personnel available to the Operations Coordinator include the Accelerator Physicists and Equipment Systems Specialists. Those persons repair equipment necessary for operations or provide trouble-shooting expertise when machine physics or equipment problems arise.
- 2.3.2 Occasionally it is necessary that parts of the Accelerator Complex be operated by Accelerator Physicists or System Specialists. The rules governing access to accelerator controls by such individuals are to be found in [C-A-OPM 2.11](#). In order to be allowed access to accelerator controls, Accelerator Physicists and Systems Specialists shall:

- 2.3.2.1 Recognize the role of the on-duty Operations Coordinator as the decision-maker regarding the safe and reliable operation of the C-A Complex.
- 2.3.2.2 Follow the orders of the Operations Coordinator, or designee, during an emergency situation.
- 2.3.2.3 Not operate any C-A Safety System controls at the MCR\_2 console, including racks one through six, unless authorized to do so by the Access Controls Group Leader.
- 2.3.2.4 Request permission to use the accelerator controls and state the purpose for the use of the controls, to the on-duty Operations Coordinator.

2.4 Additional Operating Responsibilities -- Monitoring of Accelerator Performance

- 2.4.1 Regular meetings are held between the supervisors and group members of the various operating groups to discuss operational problems and possible corrective actions, safety, and other matters of concern. When appropriate, the business discussed at these meetings should be documented.
- 2.4.2 When appropriate, operations goals should be established in the following areas and should reflect BNL's "critical outcomes"
  - 2.4.2.1 minimize the unavailability of safety systems
  - 2.4.2.2 minimize personnel errors
  - 2.4.2.3 maintain reasonably achievable particle losses
  - 2.4.2.4 minimize lost facility capability
  - 2.4.2.5 minimize the number of unscheduled shutdowns
  - 2.4.2.6 maintain complete staffing and training
  - 2.4.2.7 minimize hazardous and radioactive waste
  - 2.4.2.8 minimize the number alarms/annunciations
- 2.4.3 Once specific goals are set they should be audited throughout the running period.

3. Prerequisites

None

4. Precautions

None

5. **Procedure**

None

6. **Documentation**

None

7. **References**

[C-A-OPM "Chapter 2"](#).

8. **Attachments**

8.1 "Shift Operations Organization Chart".

**Attachment 8.1**  
 “Shift Operations Organization Chart”  
 Collider-Accelerator Department Conduct of Operations Organization

