

*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 available by contacting the **ESSHQ Procedures Coordinator, Bldg. 911A***

C-A OPERATIONS PROCEDURES MANUAL

2.1 Operations Organization and Administration

Text Pages 2 through 6

Attachments

Hand Processed Changes

<u>HPC No.</u>	<u>Date</u>	<u>Page Nos.</u>	<u>Initials</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

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

P. Ingrassia

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 The Scheduling Physicist and the Run Coordinator

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.

2.2.1.1 The roles and responsibilities of the Scheduling Physicist are:

- Acts as liaison between the experiments Run Coordinators and the C-A Department
- Advocates for the experiments
- Makes general scheduling decisions, based on input from programs (RHIC physics and machine development, APEX, NSRL, BLIP), along with the Head of Acceleration Division and the Head of Experimental Support and Facilities Division.
- Leads weekly scheduling meeting and provides input for the weekly schedule, proposing the weekly mix of MD, APEX, Maintenance, Physics
- Leads the weekly time meeting and discusses the weekly schedule at the time meeting
- Coordinates scheduling of competing programs (NASA, BLIP, pp development, RHIC production) and resolves related conflicts
- Maintains the scheduling physicist web page for the current run

- Compiles reports for the ES&F Division head as required
- Reports regularly to the user community regarding the schedule for the accelerator(s) and science program(s)
- Communicates the schedule to the Operations Coordinator and Maintenance Coordinator for implementation
- Works with the Run Coordinator to determine schedules and to share resources
- In this role reports to the Head of Experimental Support and Facilities Division

2.2.1.2 The roles and responsibilities of the Run Coordinator are:

- Creates short and long term machine plans for the start up period and during the physics run
- Advocates for accelerator performance
- Acts as the focus for experiment concerns regarding accelerator performance
- Implements performance milestones for the run
- Makes all day-to-day machine performance related decisions
- Works with support group leaders to identify resources needed to meet milestones
- Leads daily meetings that focus on machine performance goals and issues
- Distributes daily run plan (and updates as necessary) the Plan of the Day WEB page
- Provides input at weekly scheduling meeting
- Requests machine development time as needed
- Maintains "RHIC Run" web page
- Works with the Scheduling Physicist to determine schedules and to share resources
- Reports regularly to the user community regarding the status of the accelerator(s) or the science program(s)
- Communicates to the Operations Coordinator the performance goals and daily plans for implementation
- Provides feedback to operations regarding execution of performance milestones
- In this role reports to the Head of the Accelerator Division

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

