

RHIC Operations Procedures Manual

1.3 RHIC DEFINITIONS

Text Pages 1 through 4

Hand Processed Changes

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1.3 Definitions

These Definitions apply to the following terms used in the RHIC Operating Procedures Manual.

Accelerator - This is a device employing electrostatic or electromagnetic fields to impart kinetic energy to molecular, atomic or sub-atomic particles and, for purposes of this Order, capable of creating a radiological area.

Accelerator Facility - The Accelerator Facility is the accelerator and associated plant and equipment utilizing, or supporting the production of, accelerated particle beams to which access is controlled to protect the safety and health of persons. It includes experimental enclosures and experimental apparatus utilizing the accelerator, regardless of where that apparatus may have been designed, fabricated, or constructed.

Accelerator Physicist - The term Accelerator Physicist refers to scientific personnel trained to be familiar with the theory and/or practice of the physical processes underlying the operation and performance of the collider and its experimental area systems.

Accelerator Readiness Review - The Accelerator Readiness Review is a structured method for verifying that hardware, personnel, and procedures associated with Commissioning or Routine Operation are ready to permit the activity to be undertaken safely.

Accelerator Safety Envelope - This is a set of physical and administrative conditions that define the bounding conditions for safe operation at an accelerator facility.

Approve - Approve means to confirm that a proposed contractor activity has acceptable safety and health implications.

Authorize - This means to give a right to undertake an activity; as applied to contractor activities, this action is reserved for the DOE Contracting Officer.

Commissioning - Commissioning is the process of testing an accelerator facility, or portion thereof, to establish the performance characteristics. It starts with the first introduction of a particle beam into the system.

Associate Head - Unless otherwise specified, the term Associate Head refers to a person who is permitted to give Division Head Authorization (see Section 1.1 of this manual).

Environmental Management System (EMS) - As defined by ISO 14001, with enhanced emphasis on compliance assurance, pollution prevention and community outreach.

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Experimenters - The term Experimenters means all persons directly involved in experimental efforts at the accelerator facility, including visiting scientists, students and others who may not be employees of the operating contractor.

Experimental Program - This means a group of related experiments utilizing an accelerator. There are usually a number of Experimental Programs associated with an accelerator at any one time.

Hazard - Hazard means a source of danger (i.e., material, energy source, or operation) with the potential to cause illness, injury, or death to personnel or damage to a facility or to the environment (without regard for the likelihood of a harmful event occurring or of consequence mitigation). As established in DOE 5481.1B (September 23, 1986), hazards are classified by types and magnitudes as Routinely Accepted, Low, Moderate, and High.

Maintenance Personnel - The Maintenance Personnel means not only those in the specialized crafts generally associated with maintenance activities, but also accelerator operations personnel and experimenters to the extent that they undertake to repair, maintain, or improve safety-related equipment.

Operating Envelope - The concept of Operating Envelope defines the ranges or correlations of system or performance parameters, maximum or minimum, within which the accelerator or system is considered to be engaged in the normal execution of its intended program. The Operating Envelope is usually narrower, but cannot be wider than the Safety Envelope.

Variations of operating parameters within an Operating Envelope are normal events if, and only if, their extent, duration and actual or potential consequences do not exceed the bounds imposed by a safety requirement.

Operational Safety Limits - Operational Safety Limits are auditable boundaries of operation which are not to be exceeded during normal operations so as to assure safe operation of the accelerators. The operational safety limits define the conditions, safe boundaries and administrative controls necessary to ensure that the accelerator is operating within the guidelines defined by a Safety Assessment Document.

Operations Coordinator - The term Operations Coordinator refers to the person in charge of the operating shift personnel in the RHIC Main Control Room and other control stations during scheduled operations of the collider. The operations coordinator is charged with the responsibility of executing the scheduled RHIC program. The Operations Coordinator on watch has supervisor authorization.

Operator - The term Operator refers to personnel authorized to operate RHIC systems.

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Program Secretarial Officer (PSO) - The PSO is a senior outlay program official and includes: the Assistant Secretaries for Conservation and Renewable Energy; Defense Programs; Environmental Restoration and Waste Management; Fossil Energy; and Nuclear Energy; and the Directors of Civilian Radioactive Waste Management; and Energy Research.

Radiological Area - This means any area requiring posting as a radiation area or an airborne radioactivity area as these terms are defined by the Radiological Control Manual implementing the radiological control requirements of DOE 5480.11.

Restart - The term Restart refers to the resumption of operation after a timeout period sufficiently long to require re-establishment of operating clearance.

RHIC Project Director - Unless otherwise specified, the term Project Director refers to the person who is permitted to give Project Director Authorization (see Section 1.1 of the manual).

Risk - Risk is a quantitative or qualitative expression of possible harm which considers both the probability that a hazard will cause harm and the amount of harm.

Routine Operation - The Routine Operation of an accelerator commences at that point where DOE authorization has been granted either (1) because the Commissioning effort is sufficiently complete to provide confidence that the risks are both understood and acceptable and the operation has appropriate safety bounds, or (2) to permit the reintroduction of a particle beam after being directed to cease operation by DOE because of an environmental, safety, or health concern.

Safety Analysis - This is a documented process to systematically identify the hazards of a given operation; describe and analyze the adequacy of measures taken to eliminate, control, or mitigate the hazards and risks of normal operation; and identify and analyze potential accidents and their associated risks.

Safety Assessment Document - The Safety Assessment Document is the document containing the results of a safety analysis for an accelerator facility pertinent to understanding the risks of the proposed undertaking.

Safety Envelope - A Safety Envelope is a set of physical and administrative conditions bounding the operation of an accelerator and/or the conduct of an experiment or experimental program, and which is sufficient to assure that all activities performed within its bounds will be acceptably safe.

Variations of operating parameters outside a particular Operating Envelope, but within the Safety Envelope, are normal events. Variations beyond the boundaries of the Safety Envelope are to be treated as off-normal events, unusual occurrence or emergencies, depending on the severity of the actual or potential consequences.

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Scheduling Physicist - The term Scheduling Physicist refers to the individual charged with the responsibility of generating the weekly operating schedule for RHIC, and assigning priorities in the execution of the RHIC experimental program.

Shall - Implies a requirement without deviation.

Should - Implies discretion can be used.

Shutdown - The term Shutdown refers to the cessation of operations for the purpose of making the accelerator equipment safe for authorized personnel access.

Standard Based Management System (SBMS) - A web-based information hierarchy that codifies BNL policies, standards of performance, procedures, and guidelines which are based on an evaluation of external requirements and BSA policies. All work in the Laboratory must be completed following the minimum requirements, as specified in the SBMS documents.

Start-up - The term Start-up refers to a process that restores the accelerator to operational readiness by verifying subsystem availability, and by verifying the ability of the subsystems to perform their assigned function in the presence of beam.

Supervisor - Unless otherwise specified, the term Supervisor refers to persons permitted to give Supervisor Authorization (see Section 1.1 of this manual).

Systems Specialist - The term Systems Specialist refers to personnel trained to be familiar with the detailed specifications and troubleshooting procedures for equipment under their purview.

Unreviewed Safety Issue - An Unreviewed Safety Issue exists if a proposed change, modification or experiment will:

1. Significantly increase the probability of occurrence (through reduction in the margin of safety or otherwise) or the consequences of an accident or malfunction of equipment important to safety from that evaluated previously by safety analysis; or
2. Introduce an accident or malfunction of a different type than any evaluated previously by safety analysis which could result in significant safety consequences.