

AGS OPERATIONS PROCEDURES MANUAL

2.2 Operating Practices

Text Pages 1 through 5

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Revision 02

Approved: _____
AGS Department Chairman Date

P. Ingrassia

2.2 Operating Practices

1. Introduction

The guidelines of this chapter describe watch standing practices that apply to all operating personnel. This chapter describes some important aspects of routine shift activities and watch standing practices.

Effective monitoring of accelerator equipment is necessary to detect abnormal conditions or adverse trends so that appropriate action can be taken before equipment malfunction occurs. Notifying shift supervisors promptly of unusual or unexpected situations helps ensure that proper attention is given to changing and unusual conditions. Equipment status and the authority to operate equipment shall be understood by all operations personnel so that activities can be controlled and coordinated. Operations personnel shall follow all the established rules for safety and quality assurance. A desire to conduct assigned tasks expediently should not interfere with safety and quality assurance rules.

It is the responsibility of the on-shift operating crew to safely operate the accelerator through adherence to written procedures and sound operating practices. The authority for accelerator operations is vested in the on-duty Operations Coordinator and transferred only through formal turnover to a qualified Operations Coordinator. If a special test, or abnormal condition arises, accelerator personnel shall be aware that the responsibility and authority to determine corresponding operating conditions, system alignments, or equipment manipulations rests fully with the on-duty Operations Coordinator. He shall not permit any individual to bypass or overrule his operational judgement. If this happens he shall bring the matter to the attention of higher line authority for operations.

2. Guidelines

2.1 Authority to Operate Equipment

The Operations Coordinator is in charge of all activities relating to the operation of the accelerator. Any work by support groups during operations, which might impact the operation of the accelerator shall be approved by the Operations Coordinator.

2.2 Operating Practice

Operations personnel shall operate the components which make up each facility with adherence to the engineering and technical specifications for each piece of equipment. Operators shall operate equipment within operating limits and operational safety requirements of each device.

2.3 Safety Practices

Operations personnel shall comply with BNL Requirements and AGS OPM policies and procedures. A controlled copy of AGS safety documents is kept in the Main Control Room (MCR). Operations personnel shall be trained periodically in the use of safety equipment and techniques that may include, emergency procedures, respirators, SCBA, radiological equipment, and CPR.

2.4 Radiological Protection

All operating personnel should abide by the radiation safety provisions of the BNL Rad Con Manual. A copy of this manual is maintained by the AGS Associate Chair for Safety and is available on the web. Day to day rules to be followed have been incorporated into the AGS-OPM.

2.5 Radiological Exposure

Supervisors are required to examine exposure histories of their personnel and restrict the duties of those having exposures above the AGS Administrative Limits.

The AGS Department goal is to keep individual and collective doses as low as reasonably achievable. In order to meet this goal the Administrative Limits are:

2.5.1 Administrative Dose Limits

Administrative dose limits are an integral part of the dose reduction scheme employed by the AGS Department. These limits are LESS than the dose limits set by DOE and Federal Regulations.

AGS ADMINISTRATIVE LIMITS FOR VISITORS AND MINORS
Untrained visitor, untrained User or untrained staff have a dose limit of 25 mrem per year or 100 mrem per year with written permission from RCD Representative and AGS Associate Chair for Safety.
Minor (<18 years) dose limit is 25 mrem per year plus written permission from a parent and AGS Associate Chair for Safety.

AGS ADMINISTRATIVE LIMITS FOR RADIATION WORKERS

Period of Interest	Maximum Individual Dose Limit, mrem	Individual Dose Limit With Line Authority Approvals, mrem
Calendar Year	1000	1000 to 1250 (AGS Chair Approval)
		1250 to 2000 (Lab Director Approval)
Day	100	100 to 200 (Approval authority will be on the RWP)
Lifetime	N rem Where N is Age of Person in Years	Laboratory Director Approval to Exceed N rem

2.5.1.1 The maximum daily dose to Radiation-Worker-I trained persons is 100 mrem. A first-line supervisor or experiment spokesperson may approve a dose between 100 and 200 mrem. The maximum calendar year dose is 1000 mrem. Various formal approvals must be obtained to go beyond these administrative limits.

2.5.1.2 After a female RWI-trained person voluntarily notifies the AGS management that she is pregnant, she is considered a declared-pregnant radiation-worker for the purpose of fetal and embryo radiation protection. The dose to the fetus during the gestation period is to be no greater than 500 mrem at a rate of no greater than 50 mrem per month. Given that there is marginal sensitivity to detect low-level neutron dose, supervisors should not employ declared-pregnant radiation workers around beam lines during high-intensity proton operations. After a person voluntarily notifies the AGS management that she is pregnant, she must follow-up and notify management when she is no longer pregnant.

2.5.1.3 Untrained Users, staff, or visitors are limited to no more than 25 mrem per year. Written permission must be obtained from the AGS Associate Chair for Safety to go beyond this, and training is preferred.

2.5.1.4 The annual dose limit to minors and students under age 18 years is 25 mrem. Exposures are administratively

controlled. This is done by not allowing students under the age of 18 years to work in Controlled or Radiological Areas without written permission. Written permission must be obtained from the AGS Associate Chair for Safety and the individuals' parent or legal guardian.

2.6 Operator Inspection Tours

Operator tours should be of sufficient detail to ensure the status of equipment is known. The following activities should be conducted:

- a) Components, such as alarm panels, autostart standby equipment shall be inspected for abnormal or unusual conditions. Unexpected conditions such as equipment vibrations, unusual noises or smells, or excessive temperatures shall be reported to the OC so that pertinent personnel supervisors will be aware of the conditions and be able to direct repairs, troubleshooting, or additional operator action, as necessary.
- b) Equipment panel alarm light bulbs and annunciators shall be periodically checked to ensure satisfactory operation of visual and audible abnormal condition indicators.
- c) Each operator shall inspect all areas for which he/she is responsible and note any deficiencies that may be present. These deficiencies may include steam, oil, or water leaks; fire and safety hazards or radiological problems; seismic concerns such as open electrical panels and mobile objects; clogged floor drains, housekeeping or cleanliness problems; and building deficiencies such as inoperative lighting, roof leaks, or doors that do not close properly.

Operators shall take appropriate action to correct or report deficiencies noted during tours. Equipment deficiencies shall also be documented in accordance with the "Action Please" log.

2.7 Response to Indications

Operators shall believe instrument readings and treat them as accurate unless proven otherwise.

Ignoring an unusual reading because the operator believes an instrument is faulty can cause abnormal conditions to be undetected. In general, operators shall check other indications, if possible, when unexpected readings are observed. Prompt action shall be taken to investigate the cause of abnormal or unexpected indications so that

prompt corrective action can occur. When malfunctioning or inaccurate instruments are discovered, they shall be appropriately identified to prevent subsequent confusion and responsible personnel shall be notified to effect repairs. **In situations of operator doubt, operators shall be instructed to achieve facility safety, personnel safety, pollution prevention and environmental protection above facility production.**

2.8 Resetting Protective Devices

When protective devices trip (e.g., Chipmunk alarms) an attempt shall be made to understand the cause of the trip before the device is reset. Normally, before action is taken, an operator shall ensure no abnormal condition exists that would preclude reset. However, because the consequences of inappropriately resetting protective devices vary considerably, good judgement and specific guidance are necessary in this area. The OC shall provide the appropriate guidance so that tripped protective devices will be properly addressed.

2.9 Load Changes

Unless specific by written agreement, the Operations Coordinator shall approve all power or process rate changes because these persons are held accountable for safe operation. Additionally, they will probably be the persons most knowledgeable of problems that occur as a result of load changes.

2.10 Indicator Light Deficiency Identification

Indicator light deficiencies are noted by operations personnel in the Action Please Log and deficient lights are labeled with deficiency tags that are available in the Main Control Room. These stickers are used to enhance operator awareness until indicators are repaired.