

ATTACHMENT B

**LIVE FIRE RANGE
OPERATIONAL SAFETY REQUIREMENTS (OSR)**

SAFEGUARDS AND SECURITY DIVISION

FEBURUARY 2002

I. OSR #1 CONTAINMENT OF PROJECTILES

A. Objective

To prevent the escape of projectiles fired from weapons from within the Live Fire Range (LFR)

B. Operational Safety Requirement

1. Specification

The berm and baffle system, including the backstops and "eyebrows," shall be maintained such that weathering, projectile impact, or other causes will not result in deviation from the approved design. Lead buildup and rocks in the backstop shall be controlled and limited so as to minimize the ricochet hazard. To eliminate lead leaching into ground water, the soil of the rear berm will be sifted to one foot depth and the lead disposed of by the Procurement & Property Management Division as recyclables materials.

Annually, the Range Master (RM) requests Plant Engineering personnel (Grounds) to sift the soil of the rear berm to one foot depth; the sifting is weighed and the results of the sifting placed outside the range. Upon completion, the Grounds representative notifies Materials Handling who transports and disposes of the sifted materials.

2. Surveillance

The RM will inspect the LFR at least annually with the specific objective of determining whether there has been any deviation from approved design or buildup of lead or rocks in the backstop which could result in deterioration in the facility containment capability.

C. Basis

The baffle, "eyebrow," and berm system is the principal physical mechanism for preventing the escape of off-target projectiles which could jeopardize the well-being of individuals in their path.

D. Corrective Action

Upon discovery of a non-conformance with the requirements of this specification, the RI will immediately discontinue all live-fire exercises at the range. Resumption of use of the range will not be permitted until the RM certifies that the fix provided returns the facility to its original effectiveness.

E. Reporting Requirements

Any violation of this OSR shall be reported as an Unusual Occurrence in accordance with BNL requirements.

II. OSR #2 ACCESS CONTROL

A. Objective

To prevent unauthorized access to the LFR and its vicinity.

B. Operational Safety Requirement

1. Specification

Unauthorized access to the LFR will be prevented through the provision of fencing, warning signs, a red flag, and a beacon warning light.

2. Surveillance

Prior to each use of the range, the RI will be responsible for assuring that the fencing is intact and that the appropriate signs are posted. In addition, he/she shall assure that the flashing red beacon is illuminated at night and the red flag is displayed during daylight hours.

C. Basis

It is critical to the safe use of the facility that anyone who may approach the facility be alerted to the seriousness of the potential hazards within the LFR, and that all reasonable steps be taken to limit access.

D. Corrective Action

Upon discovery that any of the access limiting mechanisms are less than fully functional, the RI will immediately direct that all use of firearms be stopped. Resumption of the use of firearms will not be permitted by the RI until he/she has reinspected the fix, and the access control mechanisms are fully functional.

E. Reporting Requirement

Any violation of this OSR shall be reported as an Unusual Occurrence in accordance with BNL requirements.

III. OSR #3 STANDARD OPERATING PROCEDURES

A. Objective

To prevent accidental discharges by assuring procedural control over trainees' actions during live-fire exercises at the LFR.

B. Operational Safety/Requirement

1. Specification

An approved Standard Procedure of Operation (SPO) shall be in effect for all live-fire exercises at the LFR as required by DOE Standard 1091-96, "Firearms Safety" and DOE Order 440.1A , "Worker Protection Management for DOE Federal and Contractor Employees".

2. Surveillance

The SPO shall be reviewed and approved annually by its expiration date plus or minus one month, or more frequently if significant training program revisions are made. Both BNL safety and security personnel shall review and approve.

C. Basis

The SPO defines the management and operation of the LFR; the duties, authority, and qualifications of the RI; student-to-instructor ratios; safety equipment; firearms and ammunition suitable for the LFR; training plan; and range rules.

D. Corrective Action

When it is determined that either the SPO review date has been exceeded, significant revisions have been made in the training program or live-fire exercises without a corresponding revision to the SPOs, or an accidental discharge has occurred at the LFR, notification shall be made to the Manager, Safeguards and Security Division, who shall determine the need for immediate corrective activity. Notification to DOE shall be in accordance with DOE Orders and Policies.

E. Reporting Requirements

Any violation of this OSR shall be reported as an Unusual Occurrence in accordance with BNL requirements.

IV. OSR #4 RANGE INSTRUCTOR (RI)

A. Objective

To assure the operation of the LFR in accordance with the SPO's.

B. Operational Safety Requirement

1. Specification

Live-fire use of the LFR is under the direct command of a qualified BNL RI.

2. Surveillance

Prior to initial assignment, the RI's qualifications shall be verified to be in accordance with the SPO by the Range Master and Training Unit. The RI's qualifications shall be reviewed and verified to be complete at least annually plus or minus one month by the RM.

C. Basis

The RI is the single-most important position at the LFR. The RI is the person charged with the responsibility of operating the LFR in a safe manner by using the procedural controls stated in the SPO.

D. Corrective Action

If it is determined that the LFR has been operated without a qualified RI, notification will be made to the Manager, Safeguards and Security Division, who shall determine appropriate corrective action. The LFR shall not be operated until a qualified RI is in command.

E. Reporting Requirements

Any violation of this OSR shall be reported as an Unusual Occurrence in accordance with BNL procedures.

V. **OSR #5 FIREARMS APPROVAL**

A. Objective

To prevent the use of unapproved firearms or ammunition at the LFR.

B. Operational Safety Requirement

1. Specification

The following weapons when used with commercial or military ammunition are the only weapons approved for use at the LFR:

- .38 handguns/9mm. handguns
- 9mm submachine guns

- Shotguns
- Rifles, including .223 and 7.62 (not to exceed 7.62)
- M-79 grenade launchers (smoke and tear gas)
- Stun, gas, and smoke grenades

Weapons or ammunition not listed above shall be approved for firing only after written approval of the BNL Firearms Safety Committee.

2. Surveillance

The RI will inspect all weapons and ammunition intended for use and will assure that only weapons or ammunition approved for use in B.1. are used.

C. Basis

The projectile containment is designed to handle a specific range of projectile energies. Use of weapons outside the approved list without approval in accordance with this OSR could negate the effectiveness of the safety provisions.

D. Corrective Action

Upon discovery of a nonconformance with the limits established for weapons use, the RI will immediately discontinue all live-fire exercises at the range. Resumption of use of the range will not be permitted until the RI certifies that the nonconforming weapon or ammunition has been removed from the range or a written plan is developed and approved by the appropriate levels of authority in accordance with B.1. above.

E. Reporting Requirements

Any violation of this OSR shall be reported as an Unusual Occurrence in accordance with BNL requirements.