RISK ASSESSMENT REPORT

BERA TRAP & SKEET RANGE

LOCATION: BROOKHAVEN NATIONAL LABORATORY

UPTON, NY 11973

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BROOKHAVEN NATIONAL LABORATORY

BERA RIFLE AND PISTOL CLUB

STATEMENT OF MANAGEMENT POLICY

The Trap/Skeet Range will be operated by the BNL Rifle and Pistol Club. Overall responsibility for range operations rests with the Activity Chairman and the Club President.

As mandated in DOE Order 5480.16A, BNL has officially formed a Firearms Safety Committee to advise management on issues related to the safe conduct of activities involving firearms. Operating procedures for the Trap/Skeet Range shall be reviewed by the clubs Executive Committee annually. Major changes will be submitted to the BNL Firearms Safety Committee.

In order to maintain a safe operating environment for all club members/guests, all use of the Trap/Skeet Range or the Police Group Live Fire Range shall follow set Standard Operating Procedures as established by the BNL Police Group and the BNL Pistol and Rifle Club.

All use of the Trap/Skeet Range or the Police Group Live Fire Range shall be under the direct control of the range safety officer or the certified range instructor. The primary duty of the Range Officer/Instructor is to ensure the safe conduct of all activities at the Trap/Skeet Range, and the Police Group Live Fire Range. The range of duties and qualifications of Range Officer and Range Instructor are detailed in the BNL Rifle and Pistol Club Trap/Skeet Range Regulations and under Police Group Standard Operating Procedure #133-3.

The BNL Rifle and Pistol Club falls under the official sanction of the National Rifle Association (NRA), and the Club maintains its own Liability/Accident Insurance coverage through the NRA.

I. INTRODUCTION AND GENERAL DESCRIPTION

A. Overall Description

The Brookhaven National Laboratory Rifle and Pistol Club operates under the umbrella of the Brookhaven Employees Recreation Association (BERA). The Trap and Skeet Range consists of a regulation (A.T.A.) 5 position trap field with a Winchester V1579C trap machine mounted in a regulation concrete block trap house (Figure 1). There is also a regulation (N.S.S.A.) superimposed 8 station skeet field consisting of a high and low house each housing a Winchester Model 1574 auto loading skeet machine (Figure 2). The facility is to be used by BERA members who are also members of the BNL Rifle and Pistol Club, and guests over the age of 14.

Shotguns of no larger than 12 gauge firing target loads, no greater than 3 Dram Equivalent (1200 f.p.s.) with no greater than one and one eighth ounce of shot not larger than U.S. Number 7 1/2 (3-1 1/8 - 7 1/2) (.095) will be the only equipment permitted to be used.

Design requirements for the trap and skeet ranges were developed by Olin-Winchester and the Remington Arms company, and are safely in use in facilities around the World.

B. Location

BNL is located in Upton, Long Island, New York, approximately 60 miles east of New York City. The BNL site (Figure 3) consists of 5200 acres bounded on the south by Interstate 495, on the north by Deer Leap Road, on the west by Wm. Floyd Parkway, and on the east by North Street. The Trap and Skeet Range is located in a remote wooded area accessible by maintained unpaved roads west of First Avenue and North of East Fifth Avenue (Figure 4).

C. Facility Rationale

BERA provides **recreational** activities for employees of B.N.L. The B.N.L. Rifle and Pistol Club provides for the recreational use of firearms. The Trap and Skeet range provides for the use of shotguns shooting regulation games of Trap and Skeet firing upon clay targets only.

II. SUMMARY SAFETY ANALYSIS

A. General

The design of the Trap and Skeet Ranges is in accordance with the guidelines published by Olin-Winchester Division and the Remington Arms Company who are the foremost makers of clay target traps. Their designs are in use worldwide.

B. Safety Features

The safety features for the Trap and Skeet range are a bunker housing the Trap constructed of solid 4 x 8 x 12 concrete block with a heavy wooden roof covered with a heavy gauge galvanized steel sheet. The Skeet houses employ auto loading machines and require no shielding. The entire field is cleared of trees well beyond the shot fall zone. All possible entrances to the field are fenced off and the entire perimeter of the range is posted with warning signs every fifty feet. Firing is only done by one shooter at a time.

C. Risk Analysis

The risks associated with the operation of the trap and skeet range are firearm related only.

The risks identified are:

1. Injury to individuals within the shot fall zone only resulting from being struck by small lead pellets no larger than .095" fired at no greater than 1200 f.p.s. The greatest danger being within 40 yards.

2. Hearing damage to shooters resulting from the sound of gunfire.

3. Eye damage to shooters from spent powder gases exiting the breech of a non-fixed breech firearm.

4. Mechanical hazards associated with firing shoulder firearms such as bruises to shoulder area.

D. Conclusion

It is our conclusion that due to the relatively small area of risk on the physical range only, and the time proven design criteria for Trap and Skeet ranges, that the hazard level is extremely low. This should provide sufficient assurance that the range can be operated safely.

III. SITE DESCRIPTION

A. Site Location

The Trap and Skeet Range is located in the Northeast Quadrant of the Laboratory. The Trap and Skeet Range is located approximately 1/2 mile west of First Street and approximately .4 mile north of East Fifth Avenue and .3 mile east of North Railroad Avenue. There are no other buildings or facilities located within 1/2 mile of the facility (Figure 4).

B. Security

The facility is fenced on the north side between the east and west tree lines with a wire rope gate in the center. The fire break on the south side is also fenced and signs are posted every fifty feet at eye level along the entire perimeter. The gate is locked and all trap houses are secured with double locks. The storage trailer is also locked. The storage trailer contains clay targets, spare machine parts and maintenance equipment only.

IV. FACILITY DESCRIPTION

A. Site Description

The trap range consists of a five station trap line 16 yards behind the trap house. Clay targets are thrown south from the trap house in an arc of approximately 45°. The superimposed skeet field consists of 8 stations on a semi-circle between the 2 skeet houses.

B. Security

The cleared field is 205 ft. across (East-West) and 410 ft. deep. (North-South) These dimensions are more than adequate to contain the range of #U.S. 7 1/2 shot (.095). Skeet shooting uses much smaller shot yet; U.S. #9 (.080) (Figure 5).

V. ACCIDENT ANALYSIS

A. INTRODUCTION

There is some degree of risk inherent in all firearm activities, just as in most activities in life. The potential for an accidental discharge does exist, but is much lower for Trap and Skeet shooting because the firearms breech is always open and empty except when ready to fire and no more than two shells are ever loaded at one time. The risk can also be managed by the following.

1. Proven range designs with open shot fall zones.

2. Use of trained, certified and experienced range training and safety personnel.

3. Strict compliance with a concise and complete set of range rules.

4. Thorough firearms familiarization and safety orientation in the rules of the range.

5. Safety awareness and mature conduct on the part of all personnel involved in range activities.

B. IDENTIFIED RISKS AND RISK MANAGEMENT METHODS

1. Injury Resulting from Projectile

   The projectiles (shot) from shotguns used at the Trap and Skeet range have the potential to cause an injury or death. The only people at risk are the users of the range at the time. According to SAAMI (Sporting Arms and Ammunition Manufacturer's Institute, Inc.) Data and information provided by Mike Jordan of the Olin Corporation, Winchester Division #7 1/2 shot will not penetrate clothing at 100 yds. and is not considered lethal beyond 50 yards. The use of #9 shot in skeet shooting reduces those figures. The use of the Trap and Skeet range in the past has been approximately 15,000 rounds per year and the projections for the future are similar. Safety conscious shooters and control of the range by a trained range officer are the primary safeguard against accidents.

2. Hearing Loss

   A loud report occurs when firing a shotgun and continued exposure can result in hearing loss if protective measures are not employed. Hearing protectors with a NRR of 29 are stored at the range for use by members and are required to be worn by shooters, range officers, and spectators.

3. Eye Damage

The main concerns for eye damage at the Trap and Skeet range are from small amounts of powder gases around the ejection ports of non-fixed breech guns. Members are required to provide their own approved shooting glasses from recognized manufacturers and are required to wear them at all times while on the range.

4. Mechanical Hazards

The only mechanical hazards identified are associated with the activation of the trap machines themselves. This is mitigated by warning and operational signs at each machine and instruction of the membership in their use and specific hazards.

5. Lead Exposure

Exposure to lead has proven to be harmful. However, the use of the shotgun poses little risk in this regard as the shot charge is completely encased in a plastic wad column which does not leave the shot charge until exiting the barrel. No scrubbing of lead against the barrel walls occurs. Also, monitoring of the shooters breathing zone shall be conducted by qualified individuals at BNL.

VI. CONDUCT OF OPERATIONS

A. Trap/Skeet Range Management

The Trap/Skeet Range will be operated by the BNL Rifle and Pistol Club. Overall responsibility for range operations rest with the Activity Chairman and Club President. Operating procedures for the Trap/Skeet Range shall be reviewed by the Clubs Executive Board and approved by the BNL Firearms Safety Committee. Appendix 1.

All use of the Trap/Skeet range will be under the direct control of the range officer or range instructor. The primary duty of the Range Officer/Instructor is to ensure the safe conduct of all activity at the Trap/Skeet range. The full range of duties and qualifications of Range Officer and Range Instructor are detailed in the BNL Rifle and Pistol Club Trap/Skeet Range Regulations.

As mandated in DOE Order 5480.16A, BNL has formed a Firearms Safety Committee to advise management on issues related to the safe conduct of activities involving firearms. All fire-arms-related activities at BNL are subject to review by this committee.

B. Safety Review System

The BNL Rifle and Pistol Club shall conduct annual audits of all firearm operations at the Trap/Skeet Range. Additionally, major changes will be submitted to the BNL Firearms Safety Committee for approval.

C. Inspection Program

The Range Officer/Instructor shall inspect the Trap/Skeet Range for hazards and potential hazards prior to each live fire use of the facility. Any hazards or potential hazards noted shall be documented and reported without delay to the Activity Chairman. No live-fire use of the facility shall take place until such problems have been corrected.

D. Emergency Planning

BNL maintains a staff of trained Emergency Medical Technicians (EMT) 24 hours per day. See attachment from Fire/Rescue Group: Subject Ambulance Response to Trap Range.