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U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

WEAPONS SAFETY ASSESSMENT

Volume Three: Review Criteria

Chapters 5 and 6

Office of Nuclear Security and Incident Response

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U.S.NRC
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Weapons Safety Assessment

Volume Three: Review Criteria
Chapters 5 and 6

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Prepared by:
P. Brochman
H. Stone

Office of Nuclear Security and Incident Response
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

P. Brochman, NRC Project Manager

ABSTRACT

The regulations of the U.S. Nuclear Regulatory Commission (NRC) require an applicant for combined preemption authority and enhanced weapons authority to submit a Weapons Safety Assessment (WSA) as part of its application. This document sets forth a process that the NRC staff finds acceptable for use by an applicant in developing a WSA. The guidance in this document can be used to help evaluate the potential onsite and offsite safety hazards, safety impacts, or safety risks that could arise from the deployment and potential use of enhanced weapons (e.g., machine guns) as part of a licensee's protective strategy for defending against malevolent acts. Based on its assessment of these hazards, impacts, or risks, an applicant should identify preventive or mitigative measures that it intends to implement upon the deployment of enhanced weapons.

Volume 3 of the WSA document consists of Chapter 5, "Review Criteria Introduction," and Chapter 6, "Review Process."

FOREWORD

This NUREG describes an approach that the U.S. Nuclear Regulatory Commission (NRC) considers acceptable for use by licensees (hereafter referred to as an "applicant") in developing a weapons safety assessment (WSA) when applying for combined preemption authority and enhanced weapons authority. The NRC's regulations in Title 10 of the *Code of Federal Regulations* (10 CFR) 73.15, "Authorization for use of enhanced weapons and preemption of firearms laws," require a completed WSA as a component of an application for such authority. The purpose of a WSA is to evaluate the onsite and offsite risks associated with the deployment and potential use of a specific enhanced weapon and identify needed preventive or mitigative measures to address those risks.

Applicants may wish to, but are not required to, use this NUREG to complete a WSA. If an applicant elects to develop its own weapons safety assessment process, the NRC staff recommends an applicant review this NUREG for guidance on the types of information that should be addressed in a completed WSA.

Under 10 CFR 73.15(c), the Commission has designated the classes of facilities, radioactive material being transported, and other property that are eligible to apply for combined preemption authority and enhanced weapons authority. Only an applicant within the designated classes of licensed facilities and activities is eligible to apply for combined preemption authority and enhanced weapons authority. Under 10 CFR 73.15(f)(1)(i) and (f)(2)(iv) an applicant must also include a new weapons safety assessment for each type of proposed enhanced weapon. The NRC staff will evaluate an applicant's WSA to: 1) determine if the potential risks associated with the use of a specific enhanced weapon have been properly identified and any necessary mitigative measures implemented; 2) take into account the risks and proposed mitigative measures; and 3) determine whether an applicant's requested enhanced weapon in specific deployments is appropriate.

In addition to this NUREG, applicants should also refer to the NRC's regulatory requirements in 10 CFR 73.15 and supporting guidance in Regulatory Guide (RG) 5.86, "Preemption Authority, Enhanced Weapons Authority, and Firearms Background Checks." This RG includes information on the application process and requirements for possessing, transferring, transporting, and using authorized enhanced weapons.

This WSA NUREG document consists of four publicly available volumes. The contents of each volume are as follows:

- *Volume 1: Template Instructions*—This volume provides detailed instructions for an applicant's use in completing a WSA Volume 2 template.
- *Volume 2: Template*—This volume provides a template an applicant may use for evaluating the potential onsite and offsite safety hazards, safety impacts, or safety risks that could arise from the use of specific enhanced weapons.
- *Volume 3: Review Criteria*—This volume describes the criteria that the NRC staff will use in evaluating a WSA developed using the Volume 2 template process in an application for combined preemption authority and enhanced weapons authority.
- *Volume 4: Sample Template*—This volume provides an example of a completed WSA using the Volume 2 template process at a hypothetical power reactor site. This sample template represents a fictional facility and is intended only as a tool and visual aid to an applicant.

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ACRONYMS AND INITIALISMS

AAHs	armored attack helicopters
ACP	Automatic Colt Pistol
ADR	area danger ring
AP	armor piercing
ATF	Bureau of Alcohol, Tobacco, Firearms and Explosives
BMG	Browning Machine Gun
CFR	*Code of Federal Regulations'*
CQBR	Close Quarters Battle Receiver
CQC	Close Quarters Combat
CRISAT	Collaborative Research into Small Arms Technology
DA	Department of the Army
DBT	design-basis threat
DEA	U.S. Drug Enforcement Agency
DG	design guide
DODIC	Department of Defense Identification Code
DOE	U.S. Department of Energy
DOS	Day Optic Sight
DWM	*Deutsche Waffen und Munitionsfabriken* (German weapons manufacturer)
ETL	engineering technical letter
FBI	Federal Bureau of Investigation
FAA	Federal Aviation Administration
FLETC	Federal Law Enforcement Training Center
FM	field manual
FMJ	Full Metal Jacket
FMJBT	Full Metal Jacket Boat Tail
FN	Fabrique Nationale or Five-seven
FPS	feet per second
FY	fiscal year
HB	heavy barrel (machine gun)
HB	Brinell hardness; pertains to armor plating (sometimes designated as HBW, BN, or BHN)
HK	Heckler & Koch
HPT	high pressure test
IADR	initial area danger ring
IR	items at risk
MADR	mitigated area danger ring
MK	Mark
mm	millimeter
MP	machine pistol
MRBF	mean rounds between failures
NATO	North Atlantic Treaty Organization
NRC	U.S. Nuclear Regulatory Commission
NVDs	Night Vision Devices
PDC	Protective Design Center of USACE
POC	point of contact
QD	quick detach
RG	regulatory guide
RHA	rolled homogeneous armor

ROWS	remotely operated weapon system
RPM	rounds per minute
SAAMI	Sporting Arms and Ammunition Manufacturers' Institute
SAS	Special Air Service, the principal Special Forces organization of the British Army
SAW	Squad Automatic Weapon
SCAR	SOF Combat Assault Rifle
SCAR-H	SCAR Heavy
SCAR-L	SCAR Light
SDZ	Surface Danger Zone
SLAP	Saboted Light Armor Penetrator
SLAP-T	Saboted Light Armor Penetrator-Tracer
SMG	submachine gun
SOF	Special Operations Forces
SPR	special purpose rifle
SRTA	Short Range Training Ammunition
STANAG	NATO abbreviation for Standardization Agreement
SUA	special use airspace
SV	Sniper Version or Sniper Variant
TM	technical manual
UCP	Ultimate Combat Pistol
UMP	Universal Machinen-Pistole (Universal Submachine Gun)
USACE	U.S. Army Corps of Engineers
U.S.C.	*United States Code*
USMC	U.S. Marine Corps
Win Mag	Winchester Magnum
WSA	Weapons Safety Assessment

GLOSSARY OF TERMS

Area Danger Ring (ADR) (not to be confused with surface danger zones)

Initial (IADR)
An encompassed area that represents the worst case scenario of a fired round of ammunition's potential range (i.e., maximum range without considering any physical limitations on the flight of a round).

Mitigated (MADR)
An encompassed area that represents a fired round of ammunition's potential range (i.e., maximum range considering any physical limitations on the flight of a round) with mitigative measures in place to reduce the potential range or effect of the round.

Blowback
A system in which automatic or semiautomatic firearms operate through the energy created by combustion in the chamber and bore acting directly on the bolt face through the cartridge. Other operating systems are recoil operation, gas-actuated, Gatling, and chain.

Blowback System
A system in which there is no positive lock between the bolt and the barrel. The mass of the bolt and force of its recoil spring act to keep the breech closed. The expanding gases from the fired round overcome this inertia and "blow back" the breech. The breech must be kept closed until the round has left the barrel and gas pressures have subsided.

Breech Block
The block in breech-loading firearms that closes the rear of the barrel against the force of the charge and prevents gases from escaping.

Brinell Hardness (HB)
The hardness of a metal or alloy measured by hydraulically pressing a hard ball under a standard load into the specimen. Brinell hardness may also be designated as HBW, BN, or BHN.

Cannelure
(1) Ring-like groove in the jacket of a bullet, which provides a means of securely crimping the cartridge case to the bullet, analogous to the crimping groove in artillery ammunition.
(2) Ring-like groove for locking the jacket of an armor-piercing bullet to the core. (3) Ring-like groove in the rotating band of a gun projectile to lessen the resistance offered to the gun rifling. (4) Ring-like groove around the base of a cartridge case where the extractor takes hold. (5) Ring-like groove cut into the outside surface of a water-cooled machine gun barrel into which packing is placed to prevent the escape of water from the breech end of the water jacket.

Collaborative Research into Small Arms Technology (CRISAT)
The NATO standard in the manufacture of military equipment. The CRISAT Target is defined as a 1.6-millimeter titanium plate (UK IMI Ti 318) supplementing 20 layers of Kevlar (UK/SC/4468) as defined in STANAG Agreement 4512. Weapons are measured against this standard in respect to their ability to penetrate, and protective equipment is manufactured to adhere to this standard.

Designated Firing Position
A designated firing position predetermined by the security operating procedures. These positions can be redeployable based on the security strategy.

Enhanced Weapons
As defined in 10 CFR 73.2(b),[1] any short-barreled shotgun, short-barreled rifle, or machine gun as defined in 27 CFR 478.11.[2] Enhanced weapons do not include destructive devices as defined in 18 U.S.C. § 921(a)(4).[3]

Fixed Firing Position
A firing position where the weapon is fired only from a fixed mount; may include multiple fixed positions from which the weapon can be moved to another fixed mount.

Foot-Pound
A unit of work equal to the work done by a force of 1 pound acting through a distance of 1 foot in the direction of the force.

Frangible
Capable of being broken; breakable. Frangible, or "soft," rounds are designed to break apart when they hit walls or other hard surfaces to prevent ricochets during close-quarters combat. Also known as the Advanced Energy Transfer (AET) round.

Handgun
Any firearm including a pistol or revolver designed to be fired by the use of a single hand. The term also includes any combination of parts from which a handgun can be assembled. See 18 U.S.C. § 921(a)(29).

Joule
A unit of work or energy equal to the work done by a force of 1 newton acting through a distance of 1 meter.

Pintle
A usually upright pivot pin on which another part turns. The pin on which a gun carriage revolves.

Rolled Homogeneous Armor (RHA)
Armor having uniform composition and heat treatment throughout. RHA is frequently characterized as "hard" or "soft." Homogeneous hard armor typically has a Brinell hardness in excess of 400 and is unmachinable, except with special tools. Homogeneous soft armor typically has a Brinell hardness of 350 or less and is machinable. RHA is sometimes referred to as "homogeneous rolled armor."

Sabot
(1) A lightweight carrier in which a projectile of a smaller caliber is centered so as to permit firing the projectile within a larger caliber weapon. The carrier fills the bore of the weapon from which the projectile is fired; it is normally discarded a short distance from the muzzle. (2) A thrust-transmitting carrier that positions a missile in a gun barrel or launching tube and that prevents the escape of gas ahead of the missile. (3) Aluminum body of a high-velocity, armor-piercing tracer projectile having a tungsten carbide core; in this case, the core may be considered as the subcaliber projectile.

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1 10 CFR 73.2, "Definitions."

2 27 CFR 478.11, "Meaning of terms."

3 Title 18 of the U.S. Code, "Crimes and Criminal Procedure"; Chapter 44, "Firearms"; § 921, "Definitions."

Stray Round
Misdirected or accidental firing and ricochets.

5. INTRODUCTION

5.1 Purpose

The regulations of U.S. Nuclear Regulatory Commission (NRC) in Title 10 of the *Code of Federal Regulations* (10 CFR) 73.15, "Authorization for use of enhanced weapons and preemption of firearms laws," require a completed weapons safety assessment (WSA) as a component of an application for combined preemption authority and enhanced weapons authority. The purpose of a WSA is to evaluate the onsite and offsite risks associated with the deployment and potential use of a specific enhanced weapon and the need to implement preventive or mitigative measures to address those risks.

5.2 Background

This NUREG describes an approach that the NRC considers acceptable for use by licensees (hereafter referred to as an "applicant") in developing a WSA when applying for combined preemption authority and enhanced weapons authority. Under 10 CFR 73.15(c), the Commission has designated the classes of facilities, radioactive material being transported, and other property that are eligible to apply for combined preemption authority and enhanced weapons authority. Only an applicant within the designated classes of licensed facilities and activities is eligible to apply for combined preemption authority and enhanced weapons authority.

Under 10 CFR 73.15(e) and (f), eligible applicants applying for such authority are required to submit a WSA containing specified information to the NRC for prior review and approval. The NRC staff will evaluate an applicant's WSA to: 1) determine if the potential risks associated with the use of a specific enhanced weapon have been properly identified and any necessary mitigative measures implemented; 2) take into account the risks and proposed mitigative measures; and 3) determine whether an applicant's requested enhanced weapon in specific deployments is appropriate. Additionally, under 10 CFR 73.15(f)(1)(i) and (f)(2)(iv) an applicant must submit a new WSA if a licensee previously approved for combined preemption authority and enhanced weapons authority seeks to obtain new or different types or calibers or gauges of enhanced weapons.

Applicants may wish to, but are not required to, use this NUREG to complete a WSA. Volume 2 of this NUREG contains a template for completing a WSA. Applicants are not required to use the template in Volume 2 of this NUREG to complete a weapons safety assessment. Volume 3 of this NUREG provides guidance to the NRC staff for reviewing a WSA from an applicant that has used the Volume 2 template process. For an applicant using a separate WSA process (i.e., other than the Volume 2 template), the NRC staff will review such applications on a case-by-case basis that may be informed by the information in this NUREG.

5.3 Sensitivity of Information

A submitted WSA must be controlled to an information security level consistent with the information security level of the associated licensee's physical security plan and contingency response plan. Typically, this is either as Controlled Unclassified Information (i.e., Safeguards Information) or as classified information (i.e., either Confidential or Secret National Security Information). Accordingly, the NRC staff's SER must also be created, stored, and controlled to the same information security level within the appropriate NRC secure information technology system.

5.4 WSA Review Process Overview

The NRC staff will review an applicant's application, including the WSA, and prepare a security evaluation report (SER) documenting the staff's evaluation and recommendation on the approval or denial of the application. The criteria set forth in Volume 3 are for the use of NRC staff in reviewing a WSA that used the Volume 2 template and in developing an SER.

For applicants choosing to use this NUREG's Volume 2 template to complete a WSA, the NRC staff will use the following process to review the WSA, as described below. For applicants choosing to use their own WSA process, the NRC staff will use an appropriate review methodology and criteria, as determined on a case-by-case basis.

(1) The review team should use these four documents:
   (a) Volume 1, "Template Instructions." These instructions will provide insight into the types of information that should be included in a WSA even for applicants not using the Volume 2 template.
   (b) the applicant's completed WSA, including supporting maps and documentation
   (c) Volume 3, "Review Criteria"
   (d) a WSA Review Summary sheet (see Figure 5-2)

(2) Applicant submittals that are incomplete (i.e., missing information supporting documentation, maps, training documentation, or other areas) will be returned to the applicant for completion. Any requests for information not found in the application should be in the form of a request for additional information (RAI) to the applicant.

(3) For ease of internal tracking of the NRC review, the review team should save the WSA Review Summary sheet as "YYYYMMDD-WSA Review Summary-Facility Name" (e.g., 20150925-WSA Review Summary-Browns Ferry).

(4) The review team should base its evaluation on all of the information provided by an applicant (i.e., the calculated mitigated risk levels and discussions of justifications, mitigation, and additional information).

(5) The review team should examine all information supplied by an applicant and create a list of additional questions if necessary.

(6) The review team analyzes the information provided by an applicant and assigns hazard ratings for 10 reviewed items.

(7) The hazard ratings are mathematically summed and documented on a WSA Review Summary Sheet.

(8) Based on the sum of the hazard ratings, the review team makes recommendations on an applicant's request to NRC management. Table 5-1 provides suggested hazard rating interpretations.

(9) After final review by NRC management, an applicant receives an SER informing them of the results of the WSA review. Figure 5-1 shows a sample SER.

Table 5-1 Suggested Interpretation of Sum of Hazard Ratings

Sum of Hazard Ratings	Review Team Recommendation
≤10	Recommend approval of the request subject to stipulations identified.
>10 but ≤25	Recommend that additional mitigating measures be used and approval of the request subject to stipulations identified.
>25 but ≤35	Recommend that additional mitigating measures be used to lower the sum of the hazard ratings and have application resubmitted. Otherwise recommend disapproval.
>35	Recommend that additional mitigating measures be used and/or a different weapon system be selected to lower the sum of the hazard ratings and have application resubmitted. Otherwise recommend disapproval.

5.5 General Notes

For an applicant that has used the WSA Volume 2 template process, the review team documents its results in a WSA Review Summary sheet similar to the sample shown in Figure 5-1. When the review team begins a summary sheet for a site, the team must use the required information security controls (e.g., banner marking, portion marking, and determination boxes) consistent with the information security level of the application. For an applicant using a separate WSA process (i.e., other than the Volume 2 template), the NRC staff will review such applications on a case-by-case basis that may be informed by the information in this NUREG.

At the beginning of the review, examine an applicant's input to Item 50 in Volume 2, Section 4.11. If an applicant views the risk associated with the weapon system it selected as unacceptable, validate that the applicant considers the package as ready for review by the NRC.

As an aid to an applicant and the review team, certain input fields and sections will generate a risk level indication. These risk level indicators will appear as both a colored numeric field (green, yellow, or red) and a text field.

These risk levels are based on an applicant's input choices and are explained in Section 2.8 of Volume 1, "Template Instructions." Risk levels should signal an applicant and the review team when additional explanation is necessary.

The review team should be aware of any "diluting" techniques that an applicant may use to lower the overall risk level to be acceptable. The overall score may be diluted by using lower numbers as input choices when these numbers may not be appropriate or applicable.

In this document, "risk level" will always pertain to an applicant's input, and "hazard rating" will always pertain to the NRC review team's input.

The remainder of this volume presents information for the review team to consider when determining hazard ratings for the items in the submitted WSA package.

Figure 5-1 Sample WSA Review Summary

WSA Review Summary*

(U) Date of Review: [ ]

(U) Facility:

(U) Applicant:

(U) Review Team Leader:

(U) Review Team Member:

(U) Review Team Member:

(U) Review Team Member:

(U) Review Team Member:

Review Team Hazard Ratings	
(U) Item 24 – Enhanced Weapon Type:	[1/2/3/4/5]
(TBD) Comments:	
(U) Item 27 – Ammo to be Used:	[1/2/3/4/5]
(TBD) Comments:	
(U) Item 34 – Encroachment:	[0/1/2/3/4/5]
(TBD) Comments:	
(U) Item 36 – Hazardous Risks:	[0/1/2/3/4/5]
(TBD) Comments:	
(U) Item 37 – Key Facilities/Areas Inside the PA:	[0/1/2/3/4/5]
(TBD) Comments:	
(U) Item 38 – Key Facilities/Areas Outside PA But On The Facility's Property:	[0/1/2/3/4/5]
(TBD) Comments:	
(U) Item 39 – Key Facilities/Areas Outside the Property Boundaries:	[0/2/4/6/8/10]
(TBD) Comments:	
(U) Item 40 – Critical Asset Items Outside the Property Boundaries:	[0/2/4/6/8/10]
(TBD) Comments:	
(U) Items 36 – 40- Mitigation:	[0/2/4/6/8/10]
(TBD) Comments:	
(U) Item 41 – Population Density In MADR:	[0/2/4/6/8/10]
(TBD) Comments:	

(U) Review Team Ratings Sum = [ ]

(TBD) Review Team Recommendation: [ ]

* WSA Review Team must enter/select information in "[ ]," apply appropriate portion markings, and apply appropriate restriction/classification markings to header and footer.

6. REVIEW PROCESS

In this section, for an applicant who has used the Volume 2 template process, each item from the WSA template is listed and identified as either a rated or nonrated element. This section also includes additional discussion for the review team to consider. The section numbers and item numbers correspond to those in the WSA.

6.1 General Information

Table 6-1 General Information Items

6-1: GENERAL INFORMATION		
Item Number	**Descriptor**	**Rated or Nonrated Element**
1	Facility Name	Nonrated Element
2	Submittal Date	Nonrated Element
3	Physical Address	Nonrated Element
4	Is this a resubmittal for this facility and weapon?	Nonrated Element
5	City, State, Zip	Nonrated Element
6	Facility Phone Number	Nonrated Element
7	Mailing Address	Nonrated Element
8	City, State, Zip	Nonrated Element
9	Mailing Address Phone Number	Nonrated Element
10	Applicant Point of Contact (POC)	Nonrated Element
11	Position Title of Applicant POC	Nonrated Element
12	Work Phone Number	Nonrated Element
13	Alternate Phone Number	Nonrated Element
14	POC's E-Mail Address	Nonrated Element
15	Alternate POC	Nonrated Element
16	Position Title of Alternate POC	Nonrated Element
17	Work Phone Number	Nonrated Element
18	Alternate Phone Number	Nonrated Element
19	Alternate POC's E-Mail Address	Nonrated Element
20	Plant Manager	Nonrated Element
21	Work Phone Number	Nonrated Element
22	Alternate Phone Number	Nonrated Element
23	Plant Manager's E-Mail Address	Nonrated Element

For this general information, the review team should—

(1) Ensure that Items 1 to 3 and 5 to 23 are complete and accurate.

(2) If the answer in Item 4 is YES, then ensure that the review team has a copy of the previous submittal package. The review team should pay attention to any items in the previous submittal package that posed challenges.

Review team scoring: None

Information for the review team to consider: None

6.2 Desired Weapons

Table 6-2 Desired Weapon Item List

6-2: DESIRED WEAPON FOR SUBMISSION		
Item Number	**Descriptor**	**Rated or Nonrated Element**
24	Select an enhanced weapon category.	**Rated Element**
25	Identify a manufacturer, model, and caliber/gauge representative of the weapon desired.	
26	Enter the ammunition's maximum range (meters).	Nonrated Element

For this section, the review team should—

(1) Ensure that the weapon category (Item 24) matches the representative weapon identified. If the weapon selection does not match the weapon category, this may be a reason to request additional information from the applicant.

(2) For weapons classified as both short-barreled shotgun and machine gun, verify that short-barreled shotgun is selected.

(3) For weapons classified as both short-barreled rifle and machine gun, verify that short-barreled rifle is selected.

Review team scoring: In the WSA Review Summary, the review team will assign a hazard rating to Item 25. The rating will be based on range and rate of fire. Table 6-3 provides suggested hazard ratings.

Information for the review team to consider:

An applicant can request only one weapon type for approval per WSA template submitted. If an applicant is requesting multiple types of enhanced weapons, then each type of weapon is addressed in a separate WSA template. If an applicant chooses a weapon not listed in Section 1 of the WSA Reference Information volume, it is an applicant's responsibility to provide all information for like or similar weapons for evaluation.

If the review team does not have enough information on the weapon specified (Item 25) to complete its review of the WSA, the team should ask the applicant to provide additional information.

Different weapon types have varying characteristics, including rate of fire per minute, ammunition characteristics, and behavior of the weapon system during discharge.

The review team should refer to Section 1 of the WSA Reference Information volume for more information on the representative weapon. However, this reference information is not all-inclusive because of the number of available weapons on the market; it represents just a sampling of the various types of weapons. The review team should research information on the Internet or other sources for the representative weapon desired if it is not included in the appendix. One good source of weapons information on the Internet is http://world.guns.ru.

Weapon System Discussion:

Machine Guns:

As defined in 27 CFR 478.11,[4] a machine gun is "any weapon which shoots, is designed to shoot, or can be readily restored to shoot, automatically more than one shot, without manual reloading, by a single function of the trigger." This includes electrically fired weapons such as a remotely operated weapons system (ROWS) using a machine gun.

The advantages of machine guns are the following:

- highly effective against personnel or material targets
- provide effective suppressive fire
- excellent weapon for fixed firing positions

Their disadvantages include the following:

- The first 10 to 20 rounds fired from some of the larger machine guns in full-automatic mode allow the machine gunner to pull the "bullet trail" toward the intended target, and this may produce stray rounds. However, a ROWS using a machine gun or chain gun can be configured to fire in only three-round bursts when combined with optical targeting and tracking software (i.e., the weapon is kept on target by the tracking system, and the operator then releases the ROWS to fire a burst, thereby minimizing excess and stray rounds).
- These weapons have long effective ranges (e.g., a range from 800 to 1,800 meters (875 to 1,969 yards) and can pose a high risk to people and property beyond this distance.
- Most of these weapon systems can be used to patrol the property, but because of the size, weight, and firepower of some of the larger machine guns, weapons experts assisting USACE have indicated in general that such weapons may be better suited for fixed positions.
- They have the capability to cause extensive collateral damage.
- Multiple rounds can penetrate barriers that would effectively stop a single round.

NOTE: A machine gun using 12.7x99 millimeter (.50 caliber) ammunition should be considered high risk. This ammunition poses a high risk because of its extremely long range, large bullet weight, and ability to deliver significant impact energy onto the target (e.g., this ammunition can readily penetrate most commonly constructed structures).

[4] As stated in 27 CFR 478.11, the term "machine gun" "shall also include the frame or receiver of any such weapon, any part designed and intended solely and exclusively, or combination of parts designed and intended, for use in converting a weapon into a machine gun, and any combination of parts from which a machine gun can be assembled if such parts are in the possession or under the control of a person."

Short-Barreled Shotgun:

As defined in 27 CFR 478.11, a short-barreled shotgun is a gun that has one or more barrels less than 457.2 millimeters (18 inches) in length. This also includes “any weapon made from a shotgun, whether by alteration, modification, or otherwise, if such weapon as modified has an overall length of less than 26 inches” [660.4 millimeters].

The advantages of short-barreled shotguns are the following:

- effective against personnel at close range
- effective suppressive fire
- easy maneuverability within close quarters
- able to fire multiple projectiles of various sizes

Disadvantages include the following:

- These weapons are not meant for point targets.
- These weapons have short effective ranges (e.g., a range of 20 to 70 meters (21.9 to 76.6 yards), depending on the type of shot. This is not a desirable weapon for long-distance engagements.
- They are relatively large and can have a heavy recoil.
- The size and weight of the ammunition limit both the magazine capacity and the amount of ammunition carried.

Short-Barreled Rifles:

As defined in 27 CFR 478.11, a short-barreled rifle is one that has one or more barrels less than 406.4 millimeters (16 inches) in length. This also includes “any weapon made from a rifle, whether by alteration, modification, or otherwise, if such weapon, as modified, has an overall length of less than 26 inches” (660.4 millimeters).

The advantages of these weapons are the following:

- They are a desirable weapon for short-range situations, especially against targets wearing body armor.
- They pose a lower threat to the community since most short-barreled rifles use shorter range ammunition. They are an excellent weapon for use inside a building with frangible ammunition. The weapon can be used with minimal collateral property damage.
- They are desirable weapons for patrol or close-quarters engagements.

Their disadvantages include the following:

- The weapon may have a tendency to pull or lift when fired, in part because of its weight. This may increase the number of stray rounds.
- They are not a desirable weapon for long-distance engagements.
- They have limited effectiveness against material targets.

Table 6-3 Suggested Weapon Hazard Ratings

Hazard Rating	Weapon Type	Representative Weapon
0	Not used for this rated element	
1	Shotguns, either short-barreled or machine gun	HS-10, Mossberg 500, Remington 870MCS, Remington 11-87, XM-26 LSS
2	Rifles, either short-barreled or machine gun, firing pistol rounds (i.e., submachine gun)	SCAR Mark 16, SCAR Mark 17, HK 416, HK G36
3	Shoulder-fired rifles, either short-barreled or machine gun, firing rounds less than 12.7 mm (.50 cal)	Colt Model 635, M249 SAW, M16A2, M16A4, HK 21E/23E
4	Crew served machine guns firing less than 12.7 mm (.50 cal)	M240B, Dillon M134
5	All machine guns firing 12.7 mm (.50 cal)	M2HB

6.3 Ammunition for Selected Weapon

Table 6-4 Ammunition for Selected Weapon Item List

6-4: AMMUNITION FOR SELECTED WEAPON		
Item Number	**Descriptor**	**Rated or Nonrated Element**
27	Check all of the ammunition types below that are to be used with this weapon.	**Rated Element**

For this section, the review team should—

(1) Evaluate the ammunition types (Item 27) that an applicant plans to use with the selected weapon system.

(2) Examine the intended weapon use to make sure it is logical. A stipulation may be required for acceptance of the application to limit the ammunition types for the requested weapons.

Review team scoring: In the WSA Review Summary, the review team will assign a hazard rating to Item 27. The rating will be based on maximum range and ability to penetrate at-risk items (see maximum ballistic range information in the WSA Reference Information volume). In the case of multiple ammunition types being selected, the review team should assign the highest hazard rating from the selected ammunition types. Table 6-5 below presents a suggested hazard rating for ammunition.

Information for the review team to consider:

Other types of ammunition can be used with some of the weapons listed but may require modifications to the weapon system. An applicant should supply information on alternative ammunitions sufficient for the NRC to complete its review. If not, the review team should request additional information from the applicant.

If an applicant has entered alternate ammunition in Item 27, the review team should first decide if the ammunition is just a modification of the ammunition in the table as in the following examples:

- Match Grade and Long-Range Ammunition are the same ammunition manufactured to higher standards to perform more consistently.
- Vendor naming differences exist because ammunition vendors may use innovative names to separate their products from those of other vendors. Normally, the cartridge size will indicate what is really being sold.
- Several weapons in Section 1 of the WSA Reference Information volume can use multiple types of ammunition. Table 1-1.1 in the reference volume lists the most common ammunitions used with the weapon systems.

The review team should refer to the reference volume for appropriate ammunition for a specific weapon system and any ammunition characteristics and effects.

Ammunition Description:

Ball Ammunition: This is the most common ammunition type. Generally, this type of ammunition will have the longest range of any of the types of ammunition.

Tracer Ammunition: This ammunition is normally used as an aid in training exercises. Tracer ammunition is sometimes alternated with live ammunition (every third or fourth round in a magazine or belt) to allow the shooter better visibility of the shot. It does not have the range of ball ammunition.

Frangible Ammunition: This ammunition is used to lessen the collateral damage of a round. Frangible ammunition may stop an adversary but may not cause massive damage to the surrounding equipment or structures. Frangible ammunition is designed to completely fragment on impact with the target. This ammunition is sometimes called “no ricochet,” “reduced hazard ammunition,” or “advanced energy transfer round.” Frangible ammunition is being used in many areas as a lead-free alternative to ball ammunition. Frangible ammunition is typically used inside buildings or around expensive equipment. It has a shorter range than ball ammunition.

Plastic Ammunition: This ammunition is used mostly for training purposes where the firing range is too short for ball ammunition or the range is operating as a lead-free facility. Plastic ammunition can be purchased in ball and tracer configurations. Plastic ammunition is also used for riot control since it is considered less lethal at the proper distance. It has a much shorter range than ball ammunition.

Armor-Piercing Ammunition: This ammunition is for use against material targets. It is designed to penetrate materials that a normal ball round would not penetrate. If an applicant plans to use armor-piercing ammunition, special attention should be given to analyzing potential structural damage (fuel and chemical tanks, generators, hazardous material storage cabinets, and

others). An armor-piercing round may pass through wood or concrete block walls depending on their construction.

Hollow Point Ammunition: This ammunition is designed to fragment on contact with a human tissue. This fragmentation produces additional damage and bleeding to a body. Because of the shape of the round, hollow point ammunition tends to tumble in the air after traveling a short distance. This tumbling has two effects:

(1) The round is less accurate at long distances.
(2) The round does not have the range of a ball round.

Shotgun Ammunition: This ammunition is primarily for use against personnel. Many types of shotgun ammunition are available for various purposes. Most typical loads intended for use against personnel contain buckshot or larger birdshot. Shotgun ammunition containing slugs and other specialized materials is also effective against personnel. The effective range for shotgun ammunition varies between 20 and 70 meters (21.9 and 76.6 yards). Refer to Section 1-2 of the WSA Reference Information volume for additional information.

Other: An additional input area for an applicant was left blank for any “Other” types of ammunition the applicant wants to use. These could be types like incendiary or Saboted Light Armor Penetrator. An applicant should supply adequate information on “Other” ammunition types for the NRC to make an informed decision. If not, the review team should request additional information from the applicant.

Table 6-5 Suggested Ammunition Type Hazard Ratings

Hazard Rating	Ammunition Type
0	Not Used for This Rated Element
1	Plastic, Frangible, Shotgun Birdshot and Buckshot Rounds
2	Tracer
3	Hollow Point
4	Ball, Shotgun Slugs
5	Armor Piercing, Specialized Rounds

6.4 Weapons Deployment and Training

Table 6-6 Weapons Deployment and Training

6-6: WEAPONS DEPLOYMENT AND TRAINING		
Item Number	**Descriptor**	**Rated or Nonrated Element**
28	Check all types of deployment for the weapon.	Nonrated Element
29	Additional description of weapon deployment.	Nonrated Element
30	Create Standard Range Cards.	Nonrated Element

31	ROWS discussion.	Nonrated Element
32	Advanced Training.	**Rated Element***

For this section, the review team should—

(1) Evaluate the types of deployment for the weapon (Items 28 to 30).

(2) Examine the description of the locations for the weapon deployment and the range cards. A stipulation to limit the use of the requested weapons may be required for acceptance of the application. Examine how the weapon will be carried, either by individuals or roving patrol (e.g., "locked in a rack" or "loaded with unchambered round").

(3) Evaluate the level of training (Item 32).

Review team scoring:

The review team should not assign a numerical rating to Item 32. An applicant is given weighted credit (risk reduction factors) for different levels of training in the assessment of Items 36 through 40. The average risk levels are calculated as a mitigated risk level. Documentation for the training and qualification is required under the application for enhanced weapons and requires NRC review.

If an applicant indicates that enhanced training will be used, verify that training is beyond the minimum training requirements in 10 CFR Part 73, "Physical Protection of Plants and Materials," Appendix B, "General Criteria for Security Personnel." Areas of enhanced training include, but are not limited to, the following:

- advanced shooting positions
- shooting from cover
- stance and grip
- shooting from a vehicle
- multiple shots
- low-light and night shooting
- malfunction drills
- speed and tactical reloads
- failure drills
- close combat/weapons retention
- multiple targets
- concealed carry techniques
- speed and accuracy drills

If an applicant indicates that specialized training will be used, verify that the training is beyond the 10 CFR Part 73, Appendix B, minimum training requirements and the enhanced training noted above. Such specialized training should be described in supporting documentation and explain how the training will mitigate the area danger ring (ADR). Areas of specialized training should include, but are not limited to, the following:

- terrorist operations, criminal attacks analysis, and practical exercises
- threat route analysis and practical exercises
- surveillance detection techniques and practical exercises
- limits of fire training and practical exercises

Applicants using the volume 2 template will receive risk reduction factors of 25 percent (0.25) for enhanced training and 50 percent (0.50) for specialized training at the bottom of each risk identification table for Items 36 through 40. If the training meets only the basic requirements in 10 CFR Part 73, Appendix B, then the risk reduction factor should be zero.

The review team should verify that the applicant entered the proper factor in the tables for Items 36 through 40.

Information for the review team to consider:

Weapon System Uses:

Machine guns, depending on model and style—

- can be used from fixed positions
- can be used as a patrol weapon
- can be used inside facility buildings (Frangible ammunition is not required but is considered advantageous to reduce potential collateral damage.)
- can be used in many situations and areas of the property
- can be used in a ROWS

Short-barreled shotguns—

- can be used from fixed positions
- can be used as a patrol weapon
- can be used inside facility buildings (Frangible ammunition may be used.)
- can be used in many situations and areas of the property
- are not typically used in a ROWS

Short-barreled rifles—

- can be used from fixed positions
- can be used as a patrol weapon
- can be used inside facility buildings (Frangible ammunition is not required but is considered potentially advantageous to reduce collateral damage.)
- can be used in many situations and areas of the property
- are not typically used in a ROWS

If an applicant using the Vol. 2 template checks the box in Item 28 for use of the enhanced weapons in a ROWS, then Item 31 should provide additional information on the use of ROWS and any operational limitations.

NOTE: Use of enhanced weapons in a ROWS should be thoroughly evaluated. ROWS may be the appropriate system for an applicant's situation, but the review team should evaluate the ROWS from a weapons safety point of view. For example, questions may include: Does the remote operator have sufficient field of view of the situation to make a valid fire or no fire decision? Can the operator see the entire area surrounding the target area? How many ROWS

units can a single operator control? Is aiming done manually by the operator or by automated tracking and targeting software? ROWS are typically configured in a limited field of fire and not fired omnidirectionally (in all directions and vertical planes).

A good solution for limiting a weapon's field of fire is to install mechanical modifications (i.e., traverse and elevation limiters) that restrict the weapon's range of motion to the intended field of fire. Another option is to put training and procedures in place to instruct the gunner about the weapon's proper field of fire. For ROWS, a weapon's field of fire may also be limited via software controls.

6.5 Map Information

Table 6-7 Map Information Item List

6-7: MAP INFORMATION		
Item Number	**Descriptor**	**Rated or Nonrated Element**
33	Provide any pertinent map comments or explanations.	Nonrated Element

For this section, the review team should: For applicants using the Volume 2 template, review the maps and diagrams submitted by an applicant under Item 33.

Review team scoring: None

Information for the review team to consider: The WSA guidance instructs an applicant to provide maps and facility drawings to illustrate risk items and support risk mitigations. If an applicant has elected to use a weapon from a fixed position(s), then a Standard Range Card should have been included for each fixed position.

6.6 Initial Area Danger Ring

Table 6-8 Initial Area Danger Ring Item List

6-8: INITIAL AREA DANGER RING		
Item Number	**Descriptor**	**Rated or Nonrated Element**
N/A	Initial Area Danger Ring …	Nonrated Element

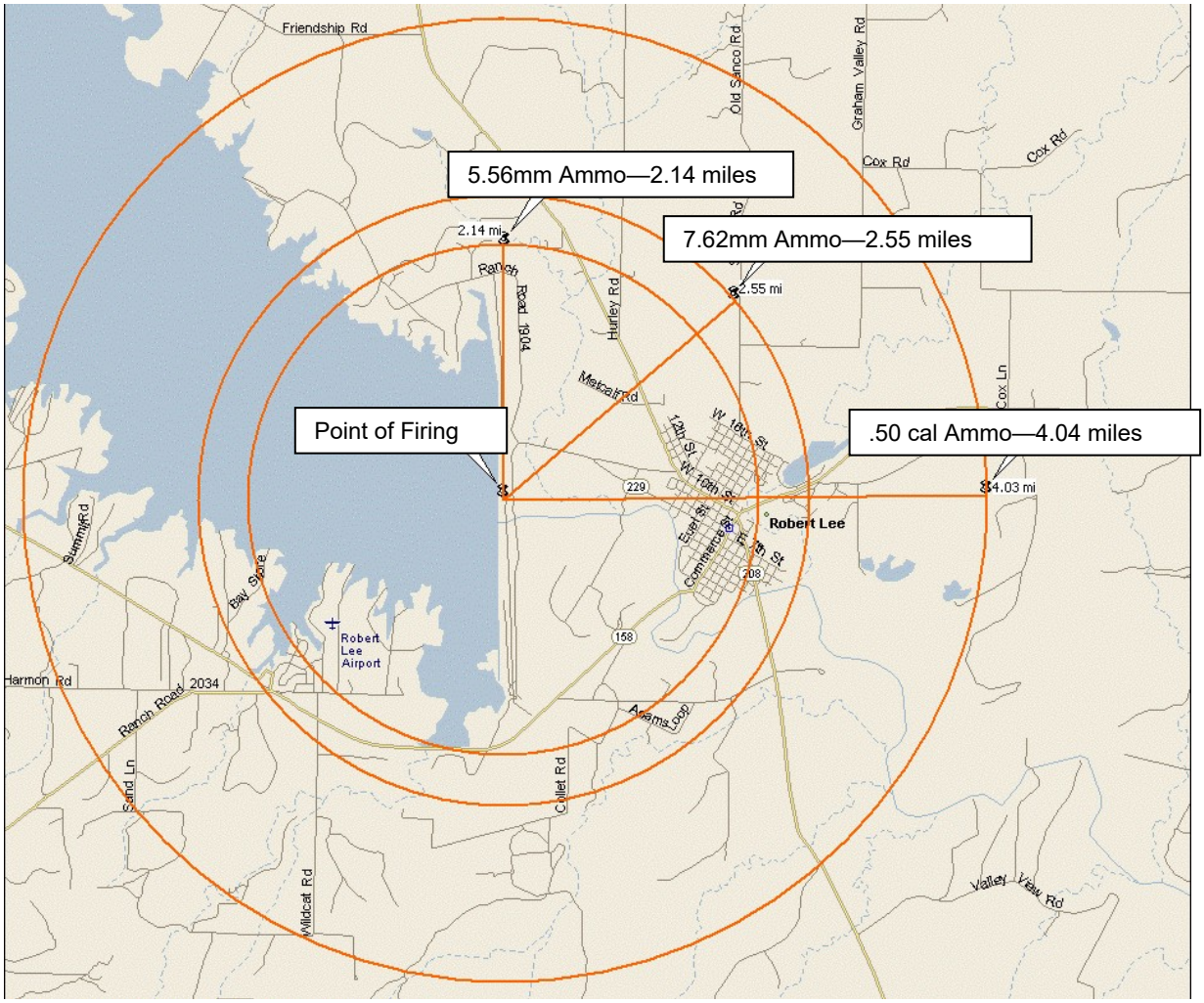
For this section, the review team should: Review the initial area danger ring (IADR) map submitted by an applicant using the Volume 2 template.

Review team scoring: None.

Information for the review team to consider: An IADR shows the maximum potential distance a stray round could travel. Figure 6-1 shows the maximum range of three standard military rounds (ball ammo). See Table 2-1.1 of the WSA Reference Information volume for maximum range information for other types of ammunition. The review team can also refer to

these documents in the Reference Information volume: Ammo Trajectories.pdf, DA PAM 385-63, and DOE M470.4-3 Protective Force, Section B, II-7.

Figure 6-1 Maximum Ammunition Ranges for NATO Standard Ammunition for a Hypothetical Facility (Ball Type)



6.7 Property Boundary Assessment

Table 6-9 Property Boundary Assessment Item List

6-9: PROPERTY BOUNDARY ASSESSMENT AND ENCROACHMENT ISSUES		
Item Number	**Descriptor**	**Rated or Nonrated Element**
34	Enter the percentage of each type of boundary buffer or encroachment type that surrounds the facility. The	**Rated Element**

	sum of these percentages should equal 100.	
35	Describe any pertinent information pertaining to property buffer or encroachment areas.	Nonrated Element

For this section, the review team should:

(1) Evaluate the buffers and encroachments surrounding the facility in Item 34.
(2) Review any discussion from an applicant's input to Item 35.

Review team scoring: In the WSA Review Summary, the review team will assign a hazard rating to Item 34 for an applicant using the Volume 2 template. The rating will be based on the total percentage of the facilities' boundary that is encroached upon. Table 6-10 provides suggested hazard ratings.

Information for the review team to consider: For an applicant using the Volume 2 template, the software generates a risk level and a total percentage encroachment for Item 34 based on the total percentage of the property boundary that is encroached upon.

Table 6-10 Suggested Percentage Encroachment Hazard Ratings

Hazard Rating	Total % of Boundary Encroachment
0	0%–16%
1	17%–33%
2	34%–50%
3	51%–67%
4	68%–84%
5	85%–100%

6.8 Risk Identification, Evaluation, and Mitigation

Table 6-11 Risk Identification Item List

6-11: RISK IDENTIFICATION, EVALUATION, AND MITIGATION		
Item Number	**Descriptor**	**Rated or Nonrated Element**
36	Chemical and petroleum/fuels risks in the ADR	**Rated Element**
37	Key facilities/areas inside the protected area (PA)	**Rated Element**
38	Key facilities/areas outside the PA but on the facility's property	**Rated Element**
39	Key facilities/areas outside the property boundaries	**Rated Element**
40	Critical asset items outside the property boundaries	**Rated Element**

For this section, the review team should:

(1) Evaluate the risk items (Items 36 to 40) identified by an applicant when using the Volume 2 template as applicable.

(2) Evaluate an applicant's justifications for likelihood of strike and consequences of strike.

(3) Evaluate all maps and diagrams provided to illustrate risk items.

(4) Evaluate mitigations taken for each risk item including the training factor. Training may be credited but is not a substitute for physical mitigation measures.

Review team scoring:

(1) For each applicable item from Table 6-11, verify that an applicant has entered the correct training factor (see Section 6.4 above for information on training factors and risk reduction).

(2) In the WSA Review Summary, the review team will assign a hazard rating to Item 36. The rating should be based on the mitigated risk level in Item 36 of the template. Table 6-12 shows suggested ratings.

(3) In the WSA Review Summary, the review team will assign a hazard rating to Item 37. The rating should be based on the mitigated risk level in Item 37 of the template. Table 6-12 shows suggested ratings.

(4) In the WSA Review Summary, the review team will assign a hazard rating to Item 38. The rating should be based on the mitigated risk level in Item 38 of the template. Table 6-12 shows suggested ratings.

(5) In the WSA Review Summary, the review team will assign a hazard rating to Item 39. The rating should be based on the mitigated risk level in Item 39 of the template. Table 6-13 shows suggested ratings.

(6) In the WSA Review Summary, the review team will assign a hazard rating to Item 40. The rating should be based on the mitigated risk level in Item 40 of the template. Table 6-13 shows suggested ratings.

(7) In the WSA Review Summary, the review team will assign a hazard rating to Items 36–40 (mitigation). The rating should be based on the types of mitigation identified in Items 36 through 40. Table 6-14 shows suggested ratings.

Information for the review team to consider:

For an applicant using the Volume 2 template under Items 36 through 40, review the justification of the likelihood and consequence levels, mitigation taken, type of mitigation, and any other discussion provided for each risk item. If any of these responses causes the review team to have further questions, convey the questions to the applicant in the form of an RAI. Carefully review the risk levels to ensure that the overall risk average is not inappropriately lowered.

An applicant's commitments to address the mitigation of risk items in their application should be documented in an updated physical security plan. The NRC staff will consider the acceptability of such commitments in developing the SER recommending or not recommending the approval of the application. The NRC may assess the need for onsite inspection of any mitigation measures as part of the staff's development of recommendations on the application.

Table 6-12 Suggested Hazard Ratings for Hazardous (Reactivity, Flammability, and Health) Risks in the ADR, Key Facilities/Areas inside the PA, and Key Facilities/Areas outside the PA but on the Facility's Property (Items 36, 37, and 38)

Hazard Rating	Mitigated Risk Level
0	≤1
1	>1 but <2
2	≥2 but <2.5
3	≥2.5 but <3
4	≥3 but <4
5	≥4

Table 6-13 Suggested Ratings for Key Facilities/Areas and Critical Asset Items outside the Property Boundaries (Items 39 and 40)

Hazard Rating	Mitigated Risk Level
0	≤1
2	>1 but <2
4	≥2 but <2.5
6	≥2.5 but <3
8	≥3 but <4
10	≥4

Table 6-14 Suggested Mitigation Hazard Ratings

Hazard Rating	Mitigation Discussion
0	No mitigating measures are required.
2	All mitigating measures are related to the existing or enhanced nature of the target.
4	Mitigating measures related to weapon range are based on positive physical measures.
6	Mitigating measures related to weapon range are primarily based on positive physical measures.
8	Mitigating measures related to weapon range are equally divided between procedural and positive physical measures.
10	Mitigating measures related to weapon range are primarily procedural.

6.9 Mitigated Area Danger Ring Map

Table 6-15 MADR Items List

6-15: MITIGATED AREA DANGER RING MAP		
Item Number	**Descriptor**	**Rated or Nonrated Element**
41	What is the estimated population density within the MADR?	**Rated Element**
42	Is the population evenly distributed within the MADR?	Nonrated Element
43	If "no," discuss population distribution.	Nonrated Element

For this section, the review team should—

(1) Evaluate an applicant's MADR map.
(2) Evaluate the population density within the MADR in Item 41 for an applicant using the Volume 2 template.
(3) Evaluate the population distribution within the MADR in Item 43 for such an applicant, including any buildings that are staffed 24-hours per day.

Review team scoring: The review team will assign a hazard rating to Item 41 based on the population density within the MADR. Figure 6-2 provides suggested hazard ratings.

Figure 6-2 Population Density

Weapon (ammunition)		5.56 mm	7.62 mm	12.7 mm
Range, miles (km)		2 (3.2)	2.5 (4.0)	4 (6.4)
Area in ADR, sq. miles (sq. km)		12.6 (32.5)	19.6 (50.9)	50.3 (130.2)
Hazard Rating	**Population Density inside Mitigated ADR (not including site personnel) People/Square Mile (People/ Square Kilometer)**	Total Population in ADR		
0	≤ 2 (0.8)	≤25	≤39	≤101
1	> 2 (0.8) but ≤ 10 (3.9)	>25 but ≤126	>39 but ≤196	>101 but ≤503
2	> 10 (3.9) but ≤ 20 (7.7)	>126 but ≤251	>196 but ≤393	>503 but ≤1,005
3	> 20 (7.7) but ≤ 100 (38.6)	>251 but ≤1,257	>393 but ≤1,963	>1,005 but ≤5,027
4	> 100 (38.6) but < 500 (193)	>1,257 but ≤6,283	>1963 but ≤9,817	>5,027 but ≤25,133
5	> 500 (193)	>6,283	>9,817	>25,133

Information for the review team to consider:

The review team should refer to the MADR and any associated maps submitted by an applicant using the Volume 2 template for Items 41 through 43. The MADR map may have a reduced footprint from the IADR map.

The identification and mitigation of risks by an applicant should support any reduction of the IADR to the MADR. When reviewing the MADR, the review team should see a correlation between the mitigative measures and the MADR. The review team should consider the population density around an applicant's facility when focusing on risk mitigation that protects denser populated areas.

6.10 Training and Weapon Maintenance

Table 6-16 Training and Weapon Maintenance Items

6-16: TRAINING AND WEAPON MAINTENANCE		
Item Number	**Descriptor**	**Rated or Nonrated Element**
44	Does the applicant have a firearms training range on its property where the enhanced weapons will be used?	Nonrated Element
45	If yes, will training for this enhanced weapon be on the facility's range? If the answer to Item 45 is yes, items 45a and 45b must be answered.	Nonrated Element
45a	Has the local Federal Aviation Administration office been contacted with regards to the training range and any requirements for special use airspace?	Nonrated Element**
45b	Summarize discussion and provide POC information.	Nonrated Element**
46	Who uses the onsite firing range?	Nonrated Element
47	If the existing range will not support training for this weapon, where will training take place?	Nonrated Element
48	What reference materials were used for modifying the existing training and weapon maintenance plans?	Nonrated Element
49	RESERVED.	NA

For this section, the review team should—

(1) Examine and make sure that an accepted training regime is proposed. If not, raise appropriate questions in an RAI.

(2) Evaluate an applicant's capability to maintain and train with the selected weapon system.

(3) Evaluate what materials an applicant used as sources for modifying weapon maintenance and training plans.

(4) If an applicant answers “yes” to Item 44 for an applicant using the Volume 2 template, the reviewer should evaluate the feasibility of training on the facility’s property.

** **Review team scoring:** Item 45a is a nonrated element for the purpose of the review team assigning a hazard rating; however, an applicant using the Volume 2 template is responsible for providing the information and a point of contact in Item 45b if enhanced weapons will be used on the facility’s range.

Information for the review team to consider:

Machine Guns: These weapons require expansive ranges. A typical machine gun range will have targets out to 1,500 meters (0.93 miles) for 12.7 mm (.50 cal) weapons and out to 800 meters (0.50 miles) for smaller caliber weapons and will have a width several hundred meters wide down range. The land is typically contoured at these ranges to stop rounds from leaving the range.

Short-Barreled Shotguns: These weapons do not require large ranges if the range is designed properly. The facility may have adequate space to train with these weapons on its existing range with minimal alterations. (An applicant would have to examine each facility on a site-by-site basis.)

Short-Barreled Rifles: Many facilities may already be training with these weapons on their own ranges. The facility may be able to train in full automatic mode at these ranges with minimum alterations. (An applicant would have to examine each facility on a site-by-site basis.)

6.11 Risk Acceptability

Table 6-17 Risk Acceptability Items List

6-17: RISK ACCEPTABILITY		
Item Number	**Descriptor**	**Rated or Nonrated Element**
50	The applicant has reviewed the risks associated with using this weapon and the selected ammunition(s).	Nonrated Element

For this section, the review team should—

Review the applicant’s response, for an applicant using the Volume 2 template, under Item 50.

Review team scoring: None

Information for the review team to consider: None

If an applicant finds the risks to be unacceptable, the review team should discuss the concerns with NRC management to determine next steps.

6.12 Review Recommendation

REVIEW RECOMMENDATION

When the review team has completed assigning hazard ratings to all 10 areas for an applicant using the Volume 2 template, it should sum the numbers beside each rating above. The total should fall between 0 and 65. Using this sum, the review team determines an overall hazard rating for evaluating the application. Table 5-1 provides recommendations based on the sum of the hazard ratings.

NOTE: Under 10 CFR 73.15(e) and (f), an applicant must submit in its application any necessary conforming changes to the licensee's physical security plan, training and qualifications plan, and contingency response plan to the NRC for prior review and approval

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10. SUPPLEMENTARY NOTES

11. ABSTRACT (200 words or less)

The regulations of the U.S. Nuclear Regulatory Commission (NRC) require an applicant for combined preemption authority and enhanced weapons authority to submit a Weapons Safety Assessment (WSA) as part of its application. This document sets forth a process that the NRC staff finds acceptable for use by an applicant in developing a WSA. The guidance in this document can be used to help evaluate the potential onsite and offsite safety hazards, safety impacts, or safety risks that could arise from the deployment and potential use of enhanced weapons (e.g., machine guns) as part of a licensee's protective strategy for defending against malevolent acts. Based on its assessment of these hazards, impacts, or risks, an applicant should identify preventive or mitigative measures that it intends to implement upon the deployment of enhanced weapons.

Volume 3 of the WSA document consists of Chapter 5, "Review Criteria Introduction," and Chapter 6, "Review Process."

12. KEY WORDS/DESCRIPTORS (List words or phrases that will assist researchers in locating the report.)
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Enhanced weapons authority
Machine guns

13. AVAILABILITY STATEMENT
unlimited

14. SECURITY CLASSIFICATION
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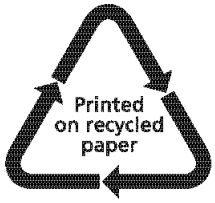
15. NUMBER OF PAGES

16. PRICE



Federal Recycling Program

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, DC 20555-0001

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