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DRAFT REGULATORY GUIDE

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(New Regulatory Guide)

TRAINING AND QUALIFICATION OF SECURITY PERSONNEL AT NUCLEAR POWER REACTOR FACILITIES

A. INTRODUCTION

This guide describes a method that the staff of the U.S. Nuclear Regulatory Commission (NRC) considers acceptable for training and qualifying security personnel at nuclear power reactor facilities. Title 10, Part 73, "Physical Protection of Plants and Materials," Section 73.55, "Requirements for Physical Protection of Licensed Activities in Nuclear Power Reactors against Radiological Sabotage," paragraph (c)(4), of the *Code of Federal Regulations* (10 CFR 73.55(c)(4)) requires NRC nuclear power reactor licensees to establish, maintain, and follow a Commission-approved training and qualification plan. This plan must describe how the licensee will implement the criteria in Section VI, "Nuclear Power Reactor Training and Qualification Plan," of Appendix B to 10 CFR Part 73, "General Criteria for Security Personnel." Consistent with the requirements of 10 CFR 73.55(d)(5)(i) and Appendix B to 10 CFR Part 73, Section VI, paragraph A.2, the licensee is responsible for ensuring that security personnel are adequately trained, equipped, and qualified to effectively perform their assignments and implement the site physical protection program through site-specific security measures, management controls, and protective strategies in a manner that satisfies Commission requirements and provides high assurance of public health and safety, protection of the environment, and common defense and security.

This guide describes how licensees should select, train, equip, test, qualify, and requalify armed and unarmed security personnel, watch persons, and other members of the security organization to ensure that these individuals possess and maintain the knowledge, skills, and abilities required to carry out their assigned duties and responsibilities effectively. Licensees may use methods other than those described here to meet Commission regulations if the chosen measures satisfy the stated Commission requirement(s). The approaches and examples described in this guide provide one method for satisfying the Commission requirements in Section VI of Appendix B for the training and qualification of security personnel at nuclear power reactor facilities. The regulatory requirements discussed in this guide include; (1) minimum requirements for employment suitability and qualification, (2) minimum physical qualifications, (3) minimum psychological qualifications, (4) requalification of personnel, (5) duty and on-the-job training, (6) weapons and tactical response training and exercises, (7) demonstration of individual capabilities and qualifications, (8) readiness of security personnel to perform assignments, (9) maintenance of equipment and program records, and (10) the conduct of self-audits and reviews.

This guide is applicable to operating reactors licensed in accordance with 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," and 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants." Power reactor licensees and applicants subject to 10 CFR 73.55 must comply only with the requirements in Appendix B to 10 CFR Part 73, Section VI, and should consider the draft guidance provided here for developing and implementing a site-specific training and qualification program. Applicants for an operating license should consider this guidance in preparing an application for a combined license under 10 CFR Part 52.

The NRC issues regulatory guides to describe to the public methods that the staff considers acceptable for use in implementing specific parts of the agency's regulations, to explain techniques that the staff uses in evaluating specific problems or postulated accidents, and to provide guidance to applicants. Regulatory guides are not substitutes for regulations, and compliance with them is not required.

This regulatory guide contains information collections that are covered by the requirements of 10 CFR Parts 50, 52, 72, and 73 and that the Office of Management and Budget (OMB) has approved under OMB control numbers 3150-0011, 3150-0151, 3150-0132, and 3150-0002 respectively. The NRC may neither conduct nor sponsor, and a person is not required to respond to, an information collection request or requirement unless the requesting document displays a currently valid OMB control number.

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B. DISCUSSION

Background

Changes to the threat environment after the events of September 11, 2001, necessitated the Commission's reevaluation of physical protection program requirements at nuclear power reactor facilities. This changing threat environment resulted in significant protection and regulatory enhancements to ensure that licensees maintain the capability of providing high assurance of the health and safety of the public against the design-basis threat (DBT) of radiological sabotage. The specific regulatory requirements for nuclear power reactor physical protection programs appear in 10 CFR Part 73. These performance-based requirements generically address the minimum level of performance that a licensee's physical protection program must achieve to provide adequate protection.

The guidance provided in this document in intended to generically describe the methods the Commission deems acceptable for the effective implementation of the requirements contained in Section VI of Appendix B to 10 CFR Part 73 for the training and qualification of personnel assigned to perform duties and responsibilities required for the physical protection of nuclear power reactor facilities. The NRC recognizes that because the methodologies addressed are generic, site-specific conditions may adversely affect the licensee's ability to effectively implement any one or more of them at any individual site, or a licensee may choose to apply a different methodology not addressed in this guide. Regardless of the specific methodology a licensee chooses, in accordance with 10 CFR 73.55(d)(5)(i), it remains the responsibility of each licensee to establish and maintain an onsite physical protection program that meets Commission requirements.

To meet the performance objective and physical protection program design requirements of 10 CFR 73.55(b), each licensee must demonstrate the capability to prevent significant core damage and spent fuel sabotage through the application of defense-in-depth concepts that consider or account for site-specific conditions. These defense-in-depth concepts should utilize multiple and supporting layers of overlapping physical security measures, equipment, personnel, and procedures in a manner that must ensure, at all times, the capability to detect, assess, interdict, and neutralize threats to the facility up to the full capabilities assigned to the DBT of radiological sabotage.

Although individual security measures are taken to serve a specific and focused function within the physical protection program, it is the interrelationship between and coordination of these individual measures that determines the effectiveness of the program in satisfying the performance objective and design requirements of 10 CFR 73.55(b). For example, each security activity should support any or all of the fundamental program capabilities that (1) document suspicious activities, (2) detect unauthorized activities, (3) assess whether a threat exists and the nature of that threat, (4) communicate to the NRC, the local law enforcement agency (LLEA), and other licensees, as applicable, any information deemed relevant to the common defense and security of nuclear power reactor facilities, (5) interdict an identified threat to prevent or delay further unauthorized access and/or activities, which may include challenging an identified threat through verbal or physical means, or delaying an identified threat until assistance arrives, and (6) neutralizing an identified threat in accordance with site procedures to include the use of deadly force as authorized by State law.

The specific regulations in Appendix B to 10 CFR Part 73, Section VI, state the minimum performance requirements for a nuclear power reactor licensee training and qualification program. To satisfy the requirements of 10 CFR 73.55(b), each licensee is responsible for integrating and coordinating its site-specific conditions, procedures, equipment, and personnel into an effective physical protection program. The following guidance is intended to assist the licensee in fulfilling that responsibility relative to the training and qualification of security personnel.

C. REGULATORY POSITION

1. General Requirements and Introduction

In 10 CFR 73.55(b), the Commission establishes design requirements for the physical protection program of a nuclear power reactor facility, which include the performance criteria for detecting, assessing, interdicting, and neutralizing threats up to and including the DBT of radiological sabotage, thereby preventing significant core damage and spent fuel sabotage. The primary duties and responsibilities of security personnel should support the licensee's capability to meet these performance criteria. In accordance with Section VI, paragraph A.1, of Appendix B to 10 CFR Part 73, each licensee is responsible for ensuring that those personnel who are assigned to implement the physical protection program meet the minimum training and qualification requirements needed to ensure that each individual has the knowledge, skills, and abilities required to effectively execute the duties and responsibilities prescribed to him or her. To accomplish this, in Appendix B to 10 CFR Part 73, Section VI, paragraph A.2, the Commission requires that each licensee satisfy the minimum training and qualification requirements developed by the Commission and contained in Appendix B, Section VI, and implement these requirements through a site-specific training and qualification plan.

In accordance with 10 CFR 73.55(c)(4) and Appendix B to 10 CFR Part 73, Section VI, paragraph A.3, each licensee must establish, maintain, and follow a Commission-approved training and qualification plan that describes how the licensee will satisfy the Commission requirements in Appendix B, Section VI. The purpose of the training and qualification plan is to describe how each licensee will meet the minimum training and qualification requirements at its site and to establish the site-specific training and qualifications guidelines needed to ensure that each individual is properly suited, trained, equipped, and qualified to effectively perform assigned duties and responsibilities.

Before an individual can be assigned to perform physical protection program duties and responsibilities, Appendix B to 10 CFR Part 73, Section VI, paragraph A.4, requires that the licensee identify the site-specific knowledge, skills, and abilities, to include appropriate equipment, needed to enable each individual to effectively perform the duties and responsibilities to be assigned. In addition, the licensee must provide a methodology by which each individual will be required to demonstrate his or her ability to carry out the assigned duties and responsibilities to effectively implement Commission requirements, the Commission-approved security plans, and the licensee's implementing procedures, while operating within applicable local, State, and Federal laws.

To ensure that security personnel can effectively perform their assigned duties and responsibilities under the conditions at their facility, Appendix B to 10 CFR Part 73, Section VI, paragraph A.5, requires that armed security personnel be trained and qualified with equipment equivalent to that required to implement the site protective strategy and that site-specific training activities simulate, as closely as practicable, the site-specific conditions under which those duties and responsibilities will be performed during both normal and contingency operations. To accomplish this, the licensee's training and qualification program should include training activities that account for site-specific conditions that affect how a requirement is met to ensure that those duties and responsibilities required to implement the licensee's physical protection program can be effectively performed under the site-specific conditions that can be reasonably anticipated to be present at the time the specified duty must be performed. The licensee should establish a methodology to identify and account for site-specific conditions, including any changes to those conditions that may occur over time, and should review identified site-specific conditions for continued applicability when planning training activities. The licensee should develop and implement a site-specific process for verifying that each individual who is assigned security duties and responsibilities has received site-specific training pertinent to effective performance of the assigned duties and responsibilities. The conduct of training activities intended to simulate site-specific conditions should be consistent with operational and safety considerations. Applicable sections of this regulatory guide contain specific guidance on developing training that meets Commission requirements.

In accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph A.6, the licensee may not allow any individual to assume security duties and responsibilities until that person has satisfied the

minimum Commission training and qualification requirements. The Commission also recognizes that knowledge, skills, and abilities are perishable or can be lost or forgotten over time. To ensure that individuals maintain these knowledge, skills, and abilities after their initial qualification, the licensee training and qualification program should also provide for periodic requalification and remedial training, as needed. When determining appropriate training frequencies, the licensee should consider the perishable nature of each knowledge, skill, or ability and give the greatest attention to those that are not used for long periods of time (i.e., between training cycles) but are critical when needed and are most likely to be necessary under high-stress conditions.

In accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph A.7, annual training requirements must be scheduled at nominal 12-month intervals. To provide flexibility and account for unanticipated schedule conflicts, annual training requirements may be completed up to 3 months before or 3 months following the scheduled date without necessitating a corresponding change to the next scheduled training date. This would allow an individual who was out sick or reassigned because of an outage on the scheduled date to satisfy the annual training obligation without undue burden or change to the next year's scheduled date. Under no circumstances should annual training be conducted at an interval less than 6 months or more than 18 months. The licensee should make every effort to conduct annual training on the regularly scheduled date which must be at nominal 12-month intervals.

2. Employment Suitability and Qualification

Consistent with Section VI, paragraph B.1, of Appendix B to 10 CFR Part 73, potential hires for the security organization, as well as individuals who are already assigned security duties and responsibilities, must meet minimum requirements to determine their initial and continued suitability (i.e., acceptability), and to ensure that they are and continue to be qualified (i.e., proven capable) to provide the required services before employment or assignment to the security organization. To accomplish this, the licensee security personnel training and qualification program should ensure that personnel performing security functions achieve and maintain an acceptable level of professional competence in the performance of requisite duties and responsibilities that are integral to the licensee's physical protection program and to the effective implementation of the NRC-approved security plans.

In the case of security personnel who are assigned duties and responsibilities involving the possession of firearms, the suitability and qualification of these armed personnel is, in part, subject to the results of background investigations as directed by 10 CFR 73.56, "Personnel Access Authorization Requirements for Nuclear Power Plants," and 10 CFR 73.57, "Requirements for Criminal History Checks of Individuals Granted Unescorted Access to a Nuclear Power Facility or Access to Safeguards Information by Power Reactor Licensees."

In accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph B.1.b, the licensee must document each individual's qualification as a record of that individual's demonstrated abilities. A qualified training instructor must document this record, and a security supervisor must attest to it.

2.1 Suitability

Appendix B to 10 CFR Part 73, Section VI, paragraph B.1.a.(1), addresses the Commission's suitability requirements. In accordance with these requirements and before an individual can be employed by, or assigned to, the security organization, the licensee must verify that the individual possesses, as a minimum, a high school diploma or has passed an equivalent performance examination. The Commission has determined that a General Education Development (GED) test designed to measure basic job-related mathematical, language, and reasoning skills is an acceptable alternative to a high school diploma.

In addition, Appendix B to 10 CFR Part 73, Section VI, paragraph B.1.a.(2), requires members of the security organization to have attained the age of 21 before being assigned duties and responsibilities involving the possession or use of a firearm and to have attained the age of 18 before being assigned duties and responsibilities in an unarmed capacity. The licensee should establish and implement

reasonable process and verification requirements to satisfy this requirement and confirm the age of potential employees before employment or assignment.

To satisfy Appendix B to 10 CFR Part 73, Section VI, paragraph B.1.a.(3), the licensee must ensure that unarmed members of the security organization do not have felony convictions that reflect negatively on the individual's trustworthiness and reliability to perform their assigned duties and responsibilities consistent with Commission regulations. The licensee is responsible for adjudicating potentially derogatory information about an individual in accordance with 10 CFR 73.56, whether such information is obtained during pre-employment application or post-employment. In addition, as outlined in the Violent Crime Control Act of 1994 (Public Law 103-322, H.R. 3355) and the Lautenberg Amendment (1996) to the Gun Control Act (Public Law 104-208, 18 U.S.C. § 922(g)(9)), the licensee should ensure that armed members of the security organization do not have any felony convictions involving the use of any type of weapon or any legal restraints preventing the possession of a firearm. Licensees electing to implement an enhanced weapons system must conduct a background check of all personnel assigned to such duties, in accordance with the requirements of the U.S. Department of Justice and the Bureau of Alcohol, Tobacco, Firearms, and Explosives, as specified in 10 CFR 73.18.

2.2 General Physical Qualifications

Consistent with Appendix B to 10 CFR Part 73, Section VI, paragraph B.2, personnel assigned security duties and responsibilities shall demonstrate, before employment or assignment to the security organization, the necessary physical qualifications to effectively perform those assigned duties. Personnel may not have any physical conditions that would adversely affect their performance and must have the physical and cardiovascular health and strength that enable them to perform their assigned security duties.

2.3 Physical Examination

Consistent with Appendix B to 10 CFR Part 73, Section VI, paragraphs B.2.a.(1) through (4), before employment, and annually thereafter, all individuals who are performing security functions for the security organization shall be subject to a physical examination administered by a licensed health professional, with final determination being made by a licensed physician. The purpose of this physical examination is to verify the individual's physical capability to perform assigned duties and responsibilities as identified in Commission-approved security plans and implementing procedures. Physical examinations should be commensurate with assigned duties, and the licensed health professional administering the exam should have a working knowledge of the assigned security duties. Licensed health professionals should consider the physical demands associated with security duties when certifying the individual's physical capability to perform security functions. The following are examples of security activities, as well as environmental and physical conditions, that the licensed health professional should consider when conducting medical certifications for duty within the security organization:

- physical fitness test,
- firearms activities to include the tactical course of fire,
- central alarm and secondary alarm station activities,
- contraband searches to include vehicle searches,
- protected and vital area posts and patrol routes, and
- environmental conditions incurred at the facility to include the geographic region of the country and specific plant equipment.

Other conditions that the licensed health professional should consider include, but are not limited to, the individual's resting and elevated heart rate/blood pressure, physical stress levels, equipment that individuals assigned security duties are required to carry or wear, hearing conditions, vision (including shapes and colors), and environmental conditions throughout the year.

2.4 Vision and Hearing

Appendix B to 10 CFR Part 73, Section VI, paragraphs B.2.b and B.2.c, addresses the Commission's vision and hearing requirements. The licensee must ensure that individuals who are assigned security duties and responsibilities meet these minimum requirements for vision and hearing to effectively perform their duties and responsibilities.

Appendix B to 10 CFR Part 73, Section VI, paragraph B.2.b.(4), requires that individuals performing security duties must be able to distinguish red, green, and yellow colors. The basis for this requirement may extend to all facility employees and includes such functions as vehicle escorts or otherwise controlling vehicle operations and the ability to distinguish between colors for obeying traffic lights and signals, road signs, and other required activities associated with operating a motor vehicle. Specific security duties affected by this requirement include, but are not limited to, distinguishing the difference between colors for security equipment operation and alarm indications such as explosive and metal detectors, alarm indicators and annunciations in the central and secondary alarm stations, radio communications, indicators at vehicle gates and barriers, and indicators on key card readers throughout the facility.

Personnel who exhibit a mild color vision defect or minor hearing loss may be subject to an on-the-job evaluation. Security training personnel and a security supervisor should perform this evaluation, which is designed to ascertain that the individual in question can correctly recognize critical objects, such as traffic control devices, emergency signs, radiation barriers, and alarm indicators for security equipment and barriers. Consistent with Appendix B to 10 CFR Part 73, Section VI, paragraphs B.1.b and B.2.a.(3), a licensed health professional shall document and assess the results of the evaluation, with a licensed physician making the final determination.

2.5 Existing Medical Conditions

Consistent with Appendix B to 10 CFR Part 73, Section VI, paragraph B.2.d, individuals may not have an established medical history or medical diagnosis of existing medical conditions that could interfere with or prevent the individual from effectively performing assigned duties and responsibilities. If a medical condition exists, the individual shall provide medical evidence that the condition can be controlled with medical treatment in a manner that does not adversely affect the individual's fitness-for-duty, mental alertness, physical condition, or capability to otherwise effectively perform assigned duties and responsibilities.

2.6 Addiction

Consistent with Appendix B to 10 CFR Part 73, Section VI, paragraph B.2.e, individuals may not have any established medical history or medical diagnosis of habitual alcoholism or drug addiction or, where this type of condition has existed, the individual shall provide certified documentation of having completed a rehabilitation program that would give a reasonable degree of confidence that the individual would be able to perform assigned security job duties. Additional Commission requirements regarding fitness-for-duty appear in 10 CFR Part 26, "Fitness for Duty Programs," and associated regulatory guidance.

2.7 Other Physical Requirements

Consistent with Appendix B to 10 CFR Part 73, Section VI, paragraph B.2.f, individuals assigned duties and responsibilities for the security organization who have been incapacitated as the result of a serious illness, injury, disease, or medical operation, which could interfere with the effective performance of assigned duties and responsibilities, shall, before resuming their assigned duties, provide medical evidence of recovery and ability to perform their duties and responsibilities.

Licensees should consider having personnel returning from the medical categories mentioned above screened by the facility or a contracted physician before allowing these individuals to return to a

duty status. Licensed physicians outside of licensee-identified or -selected physicians may not understand the specific physical demands of security-related duties and responsibilities at a nuclear facility.

2.8 General Psychological Qualifications

Individuals responsible for implementing the site security plans shall demonstrate the required psychological qualifications in accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph B.3.

2.9 Medical Examinations and Physical Fitness Test

In accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph B.4.a, armed members of the security organization shall be subject to a medical examination by a licensed physician to determine the individual's fitness to participate in physical fitness tests. This examination can be conducted in conjunction with the exam outlined in Section 2.3 of this regulatory guide. Consistent with Appendix B to 10 CFR Part 73, Section VI, paragraph B.4.b, the licensee must obtain and retain a written certification from the licensed physician that the medical examination detected no medical conditions that would preclude the individual from participating in the physical fitness tests or meeting the physical fitness attributes or objectives associated with assigned duties.

In accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph B.4.b, before assignment, armed security personnel must demonstrate their physical fitness capability to perform assigned security-related duties through the conduct of a practical physical fitness test. As required by Appendix B to 10 CFR Part 73, Section VI, paragraph B.4.b.(1), this physical fitness test must include elements that simulate site-specific or task-specific conditions. These elements should include or simulate general actions as well as scenario-specific actions that could be needed to ensure the effectiveness of the physical protection program. This should include strenuous activities or physical exertion such as running, climbing stairs, and lifting heavy objects. In addition, the licensee should consider and simulate the level of stress expected for a given scenario and exposure to weather that can reasonably be expected.

In accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph B.4.b.(2), the licensee must describe the physical fitness test to be used in its Commission-approved training and qualification plan. To satisfy Section VI, paragraph B.4.c.(3), of Appendix B, this description must include the physical attributes and performance objectives that demonstrate the strength, endurance, and agility required of the individual to effectively perform the assigned security-related duties. Each licensee should identify and analyze its site-specific conditions to determine the appropriate elements to be applied for training purposes. Examples of physical fitness tests found in many military and law enforcement training manuals can form the basis of the licensee's site-specific physical fitness test. Licensee staff or licensee contract professionals may also develop physical fitness test courses, which should be based on the specific environment and conditions that security force personnel would encounter when executing the licensee's protective strategy.

In accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph B.4.b.(4), the licensee is required to document each individual's physical fitness qualification and retain this documentation in accordance with Commission requirements.

2.10 Physical Requalification

Individuals assigned security duties and responsibilities shall meet the requirements for physical requalification in Appendix B to 10 CFR Part 73, Section VI, paragraph B.5.

3. Individual Training and Qualification for Duty

In accordance with Section VI, paragraph C.1, of Appendix B to 10 CFR Part 73, all personnel who are assigned to perform any security-related duty or responsibility shall be trained and qualified to perform assigned duties and responsibilities to ensure that each individual has the minimum knowledge,

skills, and abilities required for effective performance of assigned duties and responsibilities. To accomplish this, each individual's training criteria must include both general and position-specific training determined to be necessary for the effective implementation of the physical protection program and Commission-approved security plans during routine, emergency, and threat situations, including response strategies. In addition, the licensee should consider site-specific needs to ensure that a sufficient number of properly trained and qualified personnel are available at all times to perform both the general and position-specific duties and responsibilities required to effectively implement the physical protection program during routine, emergency, and threat situations, including response strategies.

3.1 Security Personnel Training

To satisfy Appendix B to 10 CFR Part 73, Section VI, paragraph C.1.a, the licensee must identify in the Commission-approved training and qualification plan those areas of knowledge, skills, and abilities required by security personnel to carry out their assigned duties and responsibilities and should account for them in the site-specific security training program for security personnel. The licensee should consider, but is not limited to, the following listing of security program topic areas for determining the site-specific knowledge, skills, and abilities required for an effective site physical protection program:

- protection of nuclear facilities and special nuclear material;
- NRC requirements and guidance for physical security at nuclear facilities;
- private security guard's role in providing physical protection for the nuclear industry;
- authority of private guards;
- use of nonlethal weapons;
- use of deadly force as authorized by State law;
- power of arrest and authority to detain individuals;
- authority to search individuals and seize property;
- adversary group operations;
- motivation and objectives of adversary groups;
- tactics and force that might be used by adversary groups to achieve their objectives;
- recognition of sabotage-related devices and equipment that might be used against the licensee's facility;
- facility security organization and operation;
- types of physical barriers;
- weapons, lock and key control system operation;
- location of special nuclear material (SNM) and/or vital areas within a facility;
- protected area security and vulnerability;
- types of alarm systems used;
- response to and assessment of alarm annunciations and other indications of intrusion;
- general concepts of security systems;
- vulnerabilities and consequences of theft of SNM or radiological sabotage of a facility;
- protection of security system information;
- personal equipment use and operation for normal and contingency operations;
- surveillance and assessment systems and techniques;
- communications systems and operation;
- access control systems and operation for individuals, packages, and vehicles;
- contraband detection systems and techniques;
- barriers and other delay systems around protected access or vital areas;
- exterior and interior alarm systems operation;
- duress alarm operation;
- alarm stations operation;
- response force organization;
- response force mission;
- response force operation;
- response force engagement;
- security command and control system during normal operation;
- security command and control system during contingency operation;

– fixed-post station operations;
– access control system operation;
– search techniques and systems for individuals, packages, and vehicles;
– escort and patrol responsibilities and operation;
– contingency response to confirmed intrusion or attempted intrusion;
– security system operation after component failure;
– security coordination with LLEAs (Federal, State, and local);
– security and situation reporting, documentation, and report writing;
– contingency duties;
– self-defense;
– use of and defenses against incapacitating agents;
– security equipment testing;
– contingency procedures;
– night-vision devices and systems;
– mechanics of detention;
– basic armed and unarmed defensive tactics;
– response force deployment;
– security alert procedures;
– security briefing procedures;
– response force tactical movement;
– response force withdrawal;
– response force use of support fire;
– response to bomb and attack threats;
– response to civil disturbances (e.g., strikes, demonstrations);
– response to confirmed attempted theft of SNM and/or radiological sabotage of facilities;
– response to hostage situations;
– site-specific armed tactical procedures and operation; and
– security response to emergency situations other than security incidents.

3.1.1 Critical Tasks

Consistent with the requirements of Appendix B to 10 CFR Part 73, Section VI, paragraph C.1, the licensee should identify, in the Commission-approved training and qualification plan, the critical tasks that must be performed to provide a specified security function and the minimum level of knowledge, skills, and abilities required by assigned personnel to ensure that the intended function can be performed. The Commission-approved training and qualification plan should include, but is not limited to, the following tasks:

a. Critical Administrative Tasks

Perform administrative tasks associated with the conduct of security operations in accordance with station procedures.

b. Visitor Access Control

Verify visitor identification through physical presentation of an identification card issued by a recognized local, State, or Federal Government agency that includes a photo or describes the physical characteristics of the individual. Confirm, in accordance with industry lists and databases, that individuals have not been denied access at another site. Determine access authorization for entry to the facility in accordance with site procedures. Assign the visitor an appropriate badge and/or key card. Ensure that an escort, who is aware of escort responsibilities, is present before the visitor enters the protected area in accordance with site procedures. The licensee is responsible for documenting and maintaining visitor information in a visitor control register, which includes visitor name, date, time, purpose of visit, employment affiliation, citizenship, and name of the individual to be visited, before the visitor is escorted into any protected or vital area.

c. Control of Personnel Access to Protected and Vital Areas

Verify identity and authorization of individual seeking ingress and permit or deny entry accordingly. Communicate required logging information to the alarm station operator or record the data in accordance with site security plans and implementing procedures.

d. Personnel Searches

Identify and search personnel by using special-purpose detectors, or hands-on/pat-down techniques, or combinations of these techniques. Complete the search to ensure that the individual does not possess contraband (firearms, explosives, and incendiary devices) or prohibited items in accordance with site security plans and implementing procedures before allowing the individual to proceed to the protected area access portal. Personnel who may be excepted from search as identified in Commission-approved site security plans should be required to provide specific agency credentialed photo identification for facial comparison.

e. Material Search

Positively identify and authorize packages and material. Complete required searches of packages and materials to include excepted items in accordance with site security plans and implementing procedures. Facility personnel performing watch-person-type duties associated with material searches are subject to medical examination as described in Section 2.3 of this regulatory guide. Facility personnel must be trained to perform material searches in accordance with Appendix B to 10 CFR Part 73 and the Commission-approved training and qualification plan.

f. Vehicle Search

Verify or obtain access authorization; complete the vehicle search requirements; document appropriate information pertaining to the vehicle before entry; ensure that all vehicle occupants satisfy the search requirement before entry; and determine the need for an escort and complete the vehicle entry requirements to include situations that involve Commission-approved exceptions in accordance with approved site security plans and implementing procedures.

g. Escort Functions for Visitors or Personnel without Unescorted Access

Escort all personnel not authorized unescorted access to the protected area and vital areas. Commission requirements for escort qualifications appear in 10 CFR 73.55(g)(8). Personnel assigned to perform visitor escort duties must possess the minimum physical attributes needed to effectively observe visitor activities and report any activities that could pose a threat to the facility. Facility personnel performing personnel escort duties need not be subject to a medical examination unless the individual also is assigned watch-person-type duties such as vehicle escort.

Before being assigned visitor escort duties, the assigned escort should demonstrate an acceptable level of knowledge pertaining to visitor escort functions and visitor controls in accordance with site implementing procedures. Facility personnel may be trained to perform escort duties through standard employee training programs or other training programs designed to ensure that the individual understands, and is capable of, performing the observation and reporting functions required of a visitor escort. Escort duties should include, but not be limited to, the identification of the visitors for whom escort duties are being performed; verification that established badging protocols are followed for areas to be visited; general knowledge of activities to be performed by the visitor; general knowledge of activities authorized to be performed in areas to be visited; safety concerns associated with areas to be visited; and general knowledge of available communication systems, their locations, and how to use them, if needed.

h. Vehicle and Material Escort Functions

Demonstrate knowledge pertaining to the performance of vehicle escort duties and responsibilities, demonstrate the ability to escort a vehicle and any material, demonstrate and possess knowledge of vehicle immobilization for vehicles left unattended in the protected area, and perform vehicle material escort communications and documentation in accordance with site security plans and implementing procedures.

i. Security Patrols

Conduct patrols and perform surveillance, observation, and monitoring of the assigned area including the owner-controlled area, protected area, vital area(s), and vehicle barriers. Observe the assigned area of responsibility to ensure the early detection of suspicious events, indications of tampering or vandalism, unauthorized persons, vehicles, materials, or activities, and the integrity of physical barriers. Provide or document appropriate reports in response to alarms and investigations in accordance with site security plans and implementing procedures.

j. Security Communications

Demonstrate proper operation techniques to transmit and receive messages utilizing site communication equipment in accordance with site security plans and implementing procedures.

k. Communication of Duress Situations

Determine appropriate conditions and initiate duress alarm or communications signal and respond to a duress alarm in accordance with site security plans and implementing procedures.

l. Operation of Perimeter Security Barriers

Identify perimeter barriers and operate in accordance with site security plans and implementing procedures.

m. Tests of Intrusion Detection Equipment and Special Purpose Detectors

Demonstrate the ability to properly test intrusion detection equipment and/or special purpose detectors using appropriate test methods and test devices, as required by site security plans and implementing procedures and manufacturer's specifications.

n. Provision of Compensatory Measures

Demonstrate knowledge of compensatory measures by describing post locations and responsibilities, areas of responsibility, timing of actions, and communication requirements for each assigned posting in accordance with site security plans and implementing procedures.

o. Recognition of and Reaction to Discovery of Contraband and Prohibited Items

Demonstrate appropriate search techniques through the use of equipment capable of detecting contraband or prohibited items assisted by visual and hands-on physical searches to ensure positive identification of all items. Recognize and properly respond to the discovery of contraband and prohibited items in accordance with site security plans and implementing procedures.

p. Response to Protected and Vital Area Alarms

Respond within a specified time frame to the affected area from which a detection was made and an alarm notification was received, investigate the cause of the alarm using established assessment tools and procedures, and report the assessment findings to the alarm station operators for disposition of the alarm event in accordance with Commission-approved security plans and site procedures.

q. Determination of the Proper Level of Force

Demonstrate the proper application of the established site force continuum to prevent unauthorized activities that threaten site personnel or equipment in accordance with applicable State law, approved security plans and site procedures to prevent an unauthorized act or to restrain/detain individuals committing such acts.

r. Alarm Station Functions

Demonstrate routine alarm station functions and contingency response procedures, including communications, in accordance with approved security plans and site procedures.

s. Operation of the Base Station Radio and Security Communications Equipment

Select the proper primary and secondary communications equipment, on the appropriate frequency as required; use correct communications procedures to operate equipment; and contact fixed posts, patrols, responders, and the LLEA in accordance with approved security plans and site procedures.

t. Operation and Monitoring of Access Control, Observation, Detection, and Assessment Equipment

Operate and monitor access control, observation, detection, and assessment systems to verify operability, acknowledge any alarm indication and initiate response within a specified timeframe, annotate appropriate records, and complete other activities in accordance with approved security plans and site procedures.

u. Response to Contingency Events and Execution of Defensive Strategy

Respond to contingency events as directed or required while demonstrating communications with alarm station(s), using contingency equipment as directed, observing/reporting information, and using proper tactics in accordance with approved security plans and site procedures.

v. Direction of Armed Response Team Activities

Implement security response to safeguards contingency events by instructing, directing, deploying, and coordinating individuals and teams as required in accordance with approved security plans and site procedures.

w. Physical Fitness Performance Requirements

Demonstrate a level of physical fitness in accordance with approved security plans and site procedures.

x. Reaction to Bomb, Hostage, and Civil Disturbance Situations

Demonstrate the ability to respond to a potential bomb threat, hostage situation, or civil disturbance at the facility and display an understanding of the interface with external authorities in accordance with approved security plans and site procedures.

y. Demonstration of Proficiency in Use of Handgun

Demonstrate weapons qualification in accordance with approved security plans and site procedures.

z. Demonstration of Proficiency in Use of a Shotgun

Demonstrate weapons qualification in accordance with approved security plans and site procedures.

aa. Demonstration of Proficiency in Use of Semiautomatic Rifle

Demonstrate weapons qualification in accordance with approved security plans and site procedures.

bb. Demonstration of Proficiency in the Use of Enhanced Weapons

Demonstrate weapons qualification in accordance with approved security plans and site procedures.

cc. Demonstration of the Use of Protective Equipment

Demonstrate proper donning, use, and care of personal protective and response equipment in accordance with approved security plans and site procedures.

dd. Nonlethal Defense Measures

Demonstrate weapons qualification in accordance with approved security plans and site procedures.

The licensee's Commission-approved training and qualification plan should reflect the 30 critical tasks listed above, unless the task is not applicable to the security program at a specific facility. Licensees should consider adding additional tasks to their Commission-approved training and qualification plan based on site-specific duties (i.e., spent fuel transfer).

3.2 Training of Facility Personnel

To satisfy the requirements in Section VI, paragraph C.1, of Appendix B to 10 CFR Part 73, and 10 CFR 73.55(k)(6), personnel authorized to have unescorted access to the protected area shall be trained and qualified to ensure that they understand their role in physical security and their responsibility in the event of security incidents. Facility personnel should receive this training before being granted unescorted access and periodically thereafter, in accordance with facility procedures and standard employee training programs. In addition, appropriate facility personnel should be periodically trained in their responsibilities in responding to a hostage or duress situation. This training should include general training for employees who would assist an employee taken as a hostage. This type of general employee training could help the employee, the licensee, and local law enforcement resolve such situations. Facility procedures should describe security-related training requirements for facility personnel.

Facility personnel who perform specific security duties as watch persons (e.g., material searches and vehicle escorts) shall meet the security training and qualification requirements in Appendix B to 10 CFR Part 73 and the Commission-approved training and qualification plan (i.e., employment suitability and physical and mental qualifications). Facility personnel shall be trained and qualified to perform only those critical tasks applicable to the security duty position they will fulfill as identified in Section 3.1.1 of this regulatory guide. Facility personnel shall be requalified on those specific critical tasks in accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph D.2, and the Commission-approved training and qualification plan. The licensee should use the same training methodology, delivery, and implementation to train and qualify facility personnel on specific security-related critical tasks as used for security personnel in the performance of similar critical tasks.

4. On-the-Job Training

In accordance with the requirements of Section VI, paragraph C.2, of Appendix B to 10 CFR Part 73, the licensee training and qualification program shall include on-the-job training (OJT) performance standards and criteria to ensure that each individual demonstrates the requisite knowledge, skills, and abilities needed for effective performance of assigned duties and responsibilities. The licensee shall implement OJT to ensure that individuals receive a basic level of "hands on" experience in nuclear security functions before being considered qualified and assigned associated duties and responsibilities. Licensees shall not use personnel with an OJT status who have not completed the licensee-specified OJT requirements to fill the manpower requirements of the duty force. As recommended later in this section, the licensee should develop its OJT program according to four basic principles and ensure that each duty position outlined in the training and qualification plan is identified separately. Additionally, this guidance recommends that the licensee OJT program divide all duties and responsibilities into specific job tasks. Licensees should consider the use of a formalized OJT checklist to identify those duties and responsibilities associated with each duty position and job task. Typically, qualified security training instructors/field training officers (FTOs) and/or subject matter experts (SMEs) designated by the security training staff conduct the OJT. A qualified security supervisor must attest to all OJT, and the records must be retained in accordance with 10 CFR 73.70, "Records."

Before assignment of normal security duties, it is recommended that the training and qualification program include a minimum of 40 hours of OJT for the following duty positions:

- armed security officer,
- armed responder,
- alarm station operator,
- response team leader, and
- security supervisor.

Watch persons who will be trained and qualified as members of the security organization should receive a minimum of 40 hours of OJT for normal duties. Facility personnel who perform specific security duties should receive a minimum of 24 hours of OJT for their assigned security duties.

In addition to participating in OJT pertaining to basic nuclear security functions, individuals who are assigned duties and responsibilities related to implementing the safeguards contingency plan, including the security supervisors and alarm station operators, shall complete 40 hours of OJT (in accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph C.2.b) in the form of response team activities in which each individual will be required to demonstrate his or her ability to apply the knowledge, skills, and abilities required to effectively implement the site protective strategy. OJT for response team activities and drills shall at a minimum meet the criteria listed in Appendix B to 10 CFR Part 73.

Trained and qualified security personnel reassigned or promoted to new or additional duties and responsibilities should receive OJT commensurate with the assigned duty positions as outlined above. If the new assignment includes duties and responsibilities related to implementing the safeguards contingency plan, the individual shall complete 40 hours of OJT in accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph C.2.c.

Basic principles of an on-the-job program for each duty position may include but are not limited to the following:

a. Ensure that each trainee understands the importance of each duty.
    i. Identify the basis for which each duty is required.
    ii. Identify those requirements that are directly associated with a regulatory requirement.
    ii. Identify duties that may be associated with a site or corporate requirement.

b. Ensure that each trainee observes the task being performed by a trained and qualified employee.
    i. Each trainee should observe each duty as appropriate.

ii. The FTO should consider allowing the trainee to observe multiple trained and qualified employees perform security-related tasks.

c. Each trainee should demonstrate his or her ability to perform the required tasks.

d. The trainee should know the protocols of whom to notify if a problem occurs on duty.

4.1 Duty Positions

It is recommended that the licensee identify each duty position separately within the OJT program. Each duty position would include applicable job tasks to ensure that the trainee understands the knowledge, skills, and abilities required for effective implementation of the Commission-approved physical security plan, the safeguards contingency plan, and the licensee implementing procedures. Licensees should consider, but are not limited to, the following positions:

– watch person,
– armed security officer,
– armed responder,
– alarm station operator,
– response team leader, and
– security supervisor.

4.2 Critical Tasks

Licensees should consider detailing the required actions or functions into elements for each specific critical task. The elements within each critical task should include the knowledge, skills, and abilities required for effective implementation of the Commission-approved security plans and implementing procedures and at a minimum include all critical task areas identified in Section 3.1.1 of this regulatory guide. During weapons training, certified firearms instructors should complete the elements within the critical tasks associated with firearms training, using appropriate facilities (i.e., a firearms range) and taking appropriate safety precautions.

4.3 Field Training Officers/Subject Matter Experts

Licensees could consider using FTOs/SMEs under the direction of a qualified security training instructor to assist with the implementation of the OJT program. FTOs/SMEs should be trained and qualified to perform any duty or responsibility that is the subject of their instruction or evaluation. FTOs/SMEs function as an extension of the security training staff and should not be assigned duties that would preclude them from providing the trainee with the appropriate level of knowledge and experience for each task. When scheduling OJT, licensees should not use the FTO/SME to fill the manpower requirements of the armed response team, as the FTO/SME should be free to conduct OJT on each post or in appropriate areas as needed.

4.4 Level of Knowledge Standard

Licensees should consider evaluating each task to determine the appropriate "level of knowledge standard" as described in the following:

– Memory: The ability to identify basic facts or terms and to recognize and recall information in the same manner it was presented.

– Translation: The ability to explain the relationships of basic facts and state general principles about the material. The ability to recognize and express information in a form different from the manner in which it was presented.

– Application: The ability to analyze facts and principles and draw conclusions about the material. The ability to solve problems by using the material presented.

– Evaluation: The ability to evaluate conditions and make proper decisions based on the material. The ability to evaluate alternatives and select the best solution based on the information presented.

4.5 OJT Checklist

An OJT checklist should be created that identifies the critical elements associated with each critical task for the knowledge, skills, and abilities required to perform the duties and responsibilities of all duty positions. A duty position may comprise multiple critical tasks and elements, and its description should indicate the appropriate level of knowledge standard required for each element and task. The checklist should also have an area identified to log time associated with the performance of OJT to ensure that the trainee has met the program minimum OJT time (40 hours).

As the trainee completes each element and task of the OJT form, the trainee should sign the form acknowledging OJT instruction for that particular section. The FTO/SME conducting the training should also sign the form to indicate that the trainee has completed the OJT for that section and has achieved the knowledge standard. Once completed, the form is submitted to the qualified security training instructor for final assessment and documentation, and in accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph C.2.b, a security supervisor shall attest to the documentation.

5. Tactical Response Drills and Force-on-Force Exercises

To satisfy the requirements of Section VI, paragraph C.3, of Appendix B to 10 CFR Part 73, the licensee shall conduct security tactical response drills and force-on-force exercises to develop security system effectiveness. These evolutions are vital components of a comprehensive training program that enables the security force to gain experience in tactics, protective strategy, and assigned duties within the contingency response plan. In accordance with Appendix C, "Licensee Safeguards Contingency Plans," to 10 CFR Part 73, Section II(l)(2), tactical response drills for each shift shall, at a minimum, be conducted quarterly, and force-on-force exercises for each shift shall be conducted annually. The triennial force-on-force exercise conducted by the NRC may be counted as the annual force-on-force exercise for the contingency response personnel involved.

5.1 Types of Tactical Response Drills and Force-on-Force Exercises

In accordance with Appendix C to 10 CFR Part 73, Section II(l)(2), drills and exercises are training activities that focus on maintaining and improving the knowledge, skills, and capabilities of the individual or the group and thus shall be part of the ongoing training provided to the security force personnel.

Tactical Response Drills: Tactical response drills provide a structured process to train personnel and evaluate key elements of the protective strategy by focusing on specific aspects of the strategy without conducting a fully integrated force-on-force exercise. Drill plans and drill documentation must clearly identify the elements to be evaluated.

The following are examples of types of drills:

a. *Tabletop drills* are performed to demonstrate the protective strategy using a mockup of the facility. Tabletop drills allow security force members to demonstrate their understanding of the protective strategy and their individual response requirements. This type of drill may also be used as an evaluation tool for the protective strategy.

b. *Timeline drills* are performed to demonstrate the response timelines established for the protective strategy. Drills can be used to test either the validity of the timelines established for the protective strategy or to test the ability of the security response personnel to respond to their assigned response position within the established timeline. They are conducted for individuals or portions of a shift to ensure that responders are knowledgeable about their response strategy and capable of meeting their response timelines.

c. *Limited-scope tactical response drills* are performed to evaluate the ability of one or more security response force members to effectively implement their protective strategy responsibilities. They are conducted as needed for each individual, group, or shift to validate/test the protective strategy.

Force-on-Force Exercises: Force-on-force exercises are an integrated response exercise which includes the participation of the licensee's response force executing the protective strategy against an opposing force with the characteristics and attributes of the DBT. Force-on-force exercises are designed to provide training to response force personnel on the complete implementation of the licensee's protective strategy and the evaluation and improvement of that strategy against the characteristics and attributes of the DBT. Force-on-force exercises may focus primarily on security response by using only the members of the response force and a mock adversary team, or they may be fully integrated and consist of a planned response effort across various plant disciplines (e.g., security, plant operations, emergency preparedness) to minimize or mitigate the threat.

The structure of a drill or exercise shall ensure that it provides a credible, realistic, and thorough test of the protective strategy. The drill plan and scenarios used should ensure the satisfaction of the key program elements addressed in Section 5.2 of this regulatory guide. Other program elements that support the key program elements should also be considered in the development of drill plans and scenarios to test, evaluate, and improve these areas. Section 5.2 of this regulatory guide gives examples of these elements.

5.2 Key Program Elements

The licensee should use the following key program elements of the protective strategy in developing scenarios for tactical response drills and force-on-force exercises:

a. Responding with sufficient number of security personnel—The licensee has the required number of response personnel to effectively implement the protective strategy and protect the target sets from the DBT.

b. Responding within appropriate timelines—Response personnel have adequate time to reach their response positions in advance of the adversary timelines.

c. Responding to protected positions—Response personnel use appropriate protection and cover.

d. Responding with appropriate armament—Response personnel are provided or have readily available the weapons and equipment necessary to execute their responsibilities and are appropriately trained and qualified in the use of the weapons and equipment.

e. Providing target set protection—Response plan and response personnel prevent the DBT from completing sabotage of all components of any target set.

To be an effective evaluation tool, each tactical response drill should include at least one key program element. A force-on-force exercise should include all five key program elements.

The following other program elements also contribute to the successful demonstration of the key elements:

– coordination and planning,

– command and control,
– communications,
– alarm station operations,
– individual responder tactics,
– team response tactics,
– use of deadly force as authorized by State law,
– alarm assessment and intrusion detection equipment,
– access control and search equipment,
– weapons handling and proficiency,
– controller participation,
– postdrill briefing/critiques,
– integrated response (plant operations, LLEA, and/or EP),
– proper use of defensive positions, and
– deployment of responders and equipment.

5.3 Drill and Exercise Scenario Development

The effectiveness of a drill or exercise as an evaluation tool is highly dependent on the scenario development phase. To satisfy the requirements of Appendix C to 10 CFR Part 73, Section II(l), "Performance Evaluation Program," the program elements to be tested must be identified and the proposed scenario reviewed to ensure that it adequately challenges the selected program elements. With a properly planned scenario, the critique and evaluation can provide meaningful insights into the effectiveness of the protective strategy and any enhancements or corrections that may be needed.

Consistent with Appendix C to 10 CFR Part 73, Section II(l)(6), and Appendix B to 10 CFR Part 73, Section VI, paragraph C.3, the licensee shall develop a scenario to support the conduct of each drill or exercise. The scenarios shall be designed to encourage open decisionmaking consistent with the protective strategy. In some cases, the scope of a drill may be more narrowly focused and not involve an adversary team. In those cases, only the relevant planning elements need to be included. During scenario planning, attention to the key program elements is essential to the effectiveness of the drill or exercise as an evaluation tool. The design of the scenarios shall ensure that they verify/evaluate the effectiveness of the licensee's protective strategy.

5.4 Identification of Target Sets

Drill and exercise scenarios should also be developed utilizing target sets as the basis for the scenario. Target sets that are identified as "attractive" for reasons of accessibility and the security conditions that exist in the specific area are the optimum choice for a drill or exercise scenario. Scenarios utilizing attractive targets generally pose the greatest challenge to the protective strategy and can be the basis of improvements made to physical protection systems and protective strategies. The licensee may take credit for actions or equipment that protect a target set from destruction/disablement only if that action or equipment is listed as a component of the target set and is agreed to by consensus before initiation of the exercise. A licensee may ***not*** take credit for actions or equipment that are outside of the predetermined target set for the purpose of determining the effectiveness of the protective strategy or the capability of security personnel to carry out their assigned duties and responsibilities. Credit for equipment and actions within a target will be given only if the following criteria are met:

– sufficient time is available to implement these actions;
– environmental conditions allow access where needed;
– adversary interference is precluded;
– any equipment needed to complete these actions is available and ready for use;
– approved procedures exist; and
– training is conducted on the existing procedures under conditions similar to the scenario assumed.

5.5 Simulations/Artificialities

Drill and exercise scenarios should be developed to challenge the execution of the protective strategy during a variety of environmental and plant conditions that could potentially exist at any time. To accomplish this, it may be necessary to incorporate certain acceptable artificialities into the drill or exercise scenarios to provide a means to replicate these conditions. Plant conditions identified in the scenario may range from operating at power to refueling or other major maintenance activities. Environmental conditions identified in the scenarios should include time of day or night, and, if possible, the drill or exercise should be conducted during the time identified to address relative daylight or darkness and various conditions of security readiness.

The scenario may also need to include other intricate artificialities to simulate actions and activities that cannot actually be performed because of considerations of practicality and the safety of personnel and plant equipment. During scenario development, actions and activities such as the use of firearms with blank ammunition, the use of mock explosive devices, and the presence of drill or exercise participants in certain areas must be considered to ensure the continued safe operation of the plant and the safety of personnel. Drill and exercise scenarios should be developed to accommodate overall safety through the incorporation of acceptable artificialities to simulate the occurrence of these actions and activities (e.g., the inclusion of task times, timeouts, tabletop exercises). Simulations/artificialities may apply to both armed responders and mock adversaries and should be thoroughly integrated and accounted for during the planning process. Specific guidance for simulations/artificialities should also be incorporated into the licensee's drill and exercise scenario matrix to enable controllers to properly inject simulations/artificialities into the scenario and provide oversight of the actions resulting from them. The licensee should make every effort to minimize the number of simulations/artificialities in the development of scenarios to ensure that each scenario provides an accurate performance standard.

5.6 Cautions and Restrictions

Certain areas of the plant such as the control room and plant areas where work is being performed may be considered off limits to drill or exercise activity. Participants should receive this information at the drill or exercise briefing, along with details of how the activities will be simulated or affected by these areas being off limit to drill or exercise activity. In addition, certain cautions should be considered during drill and exercise planning:

a. Extreme care will be taken inside areas with sensitive plant equipment.
b. Personnel safety is paramount; risks should be addressed and managed to ensure personnel safety.
c. Radiological controls are adhered to at all times.

5.7 Communications

The means of communication for the drill or exercise activity should be designated during the preparation phase. Planning for communication needs should consider plant operations, the on-duty security force, the participants, the controllers, and the adversaries, as well as a means to communicate the conduct of the drill or exercise to all plant personnel.

5.8 Planning and Scheduling

5.8.1 Schedule

The licensee should develop and maintain a schedule that supports the drill or exercise plan to ensure the efficiency and productivity of drills and exercises. In schedule development, the licensee should consider factors such as projected station outage schedules, requalification requirements, and force-on-force tactical exercise requirements. An effective program schedule provides a detailed listing of the following:

– type of drills/exercises to be conducted,

– when the drills/exercises will be conducted,
– the key program elements/evaluation standards that would be satisfied by the planned evolution, and
– the participants in the evolution.

5.8.2 Planning Guide

The licensee should use a structured plan to assist in the coordination, execution, and documentation activities associated with the drill and exercise process. The plan can provide consistency to the process and help ensure satisfaction of all program requirements. The plan is also the foundation of the remainder of the drill or exercise documentation. The drill or exercise plan should address the following:

– drill or exercise specifics (number, date, shift/personnel involved, location);
– prenotifications (operations, radiation protection, station management, etc.);
– safety briefings;
– radiological briefings;
– specific drill objectives/key elements evaluated;
– participants (participants, controllers, adversaries);
– adversary characteristics (equipment, routes taken, actions taken, target, etc.);
– scenario being used;
– sequence of events (event description, anticipated response, estimated timelines);
– development of a controller matrix (written scenario for controllers) to outline scenario events;
– simulations/artificialities to be considered or that are integrated into the evolution safety review;
– adversary briefings (providing details of the scenario, equipment used, routes, targets, etc., and allowing for intelligence-gathering from an insider);
– controller/evaluator briefings (scenario, assignments, simulations, cautions/concerns, etc.);
– equipment consideration; and
– initial plant/security status.

In accordance with Appendix C to 10 CFR Part 73, Section II(l)(4), planners shall ensure that the scenario maintains consistency with the DBT of radiological sabotage established by the Commission. The mock adversaries are expected to perform in accordance with the DBT capabilities and associated rules of engagement.

In planning the drill or exercise, it is important for the integrity of the process that the confidentiality of the scenario be maintained. It is also important that the licensee adheres to its security plan response requirements by using only the number of committed security response personnel.

5.9 Defining Participation

In accordance with Appendix C to 10 CFR Part 73, Section II(l)(2), drills and exercises are scheduled on an individual or team basis. Individual participation in drills and exercises is required for each duty position in accordance with the site security plans and implementing procedures. Individuals who are trained and qualified to perform contingency duties for multiple-response team duty positions should participate in separate drills and exercises for each position. Licensees shall maintain records of participation in drills and exercises by response team members to monitor and manage individual participation over the training cycle.

When planning drills and exercises, personnel should be identified to fill each of the roles and response team duty positions required to support the selected scenario and the type of evolution being conducted.

The level of support needed for the conduct of a drill will be significantly less than for an exercise, depending on the complexity of the drill. The licensee should consider the following positions of responsibility and personnel when planning for drills and exercises:

a. Lead Controller — The exercise leader with overall knowledge of security shift operations. This individual may be selected from the security staff or other organization as appropriate.

b. Controllers—Designated individuals assigned to specific participants or areas who have the necessary training to observe, evaluate, and control the drill or exercise activities of their assigned participant or control area.

c. Adversaries — Appropriately equipped and trained mock attackers with the required physical abilities to engage the licensee exercise participants in an armed attack to test their ability to defend against the DBT. Within the control and safety parameters established for the exercise, the adversary team will actually perform the normal physical and tactical activities (such as movement, communication, and carrying of simulated explosives/equipment) required to accomplish their assigned mission. To execute such operations and tactics, it is essential that adversary team members are trained in small-unit tactics and scenario planning. Typically, the adversary force is from the licensee's security force, from other nuclear plants, or from local law enforcement tactical response units.

d. Insider — A knowledgeable individual who provides inside/intelligence information to the mock adversaries. This individual could be a member of the plant technical staff, operations staff, or the security force. Before a drill or exercise, sufficient time should be allotted for the adversary team to gain intelligence information from the insider.

e. On-Duty Security Force — Nondrill personnel who are used during a force-on-force tactical exercise to ensure that the exercise meets all requirements identified in the site-specific physical security plan and procedures.

f. Central Alarm Station (CAS)/Secondary Alarm Station (SAS) Participants — Security force members stationed in the alarm stations who will perform CAS/SAS duties as drill participants during the drills and exercises. They will be briefed on drill conditions as required.

g. Security Drill or Exercise Participants — Security responders who respond to the mock security contingency event.

h. Plant Operations Participant(s) — Individual(s) who would normally be assigned to a command and control function. This participant is required only when significant simulated plant operations are expected from the scenario. Only operator actions listed in a target set should be used in determining whether an entire target set was compromised. If credit is taken for operator actions, a careful evaluation must be conducted to ensure that actions credited as part of the target set for mitigation or recovery are achievable under the postulated scenario conditions.

5.10 Preparation and Conduct of Drills and Exercises

The conduct of drills and exercises is a significant element of the security training program. Regardless of the scale of the evolution, preparation, coordination, and control are key to the effectiveness of a drill or exercise.

To ensure exercise safety and provide consistent and effective performance, the licensee should consider the following criteria when conducting drills or exercises:

a. Weapons/Ammunition Safety — Weapons and ammunition safety is paramount. It is crucial that proper attention is given during exercise planning and performance to ensure that drill participants do not carry or have available live-fire weapons or ammunition. The adversaries and the response force team should use training weapons that are easily identifiable as such. If a live-fire weapon is used, it must be rendered safe and incapable of firing. It should also be marked so it can be easily identified as a training weapon.

b. Exercise Participant Safety — The following criteria should be part of the safety briefing for exercise participants:

i. Physical contact should occur only after a participant has been disabled, surrendered, or neutralized and only with the approval of a controller.
ii. No attempt should be made to disarm an opponent in any way.
iii. All ascents and descents from elevated positions will involve a ladder, stairway, or other safe method. There should be no jumping from one elevation to another.
iv. All exercise controllers and participants will be briefed on the radiological and industrial safety restrictions/concerns.
v. Participants should monitor their own condition for overexertion.
vi. Anyone who observes an injured or ill participant should immediately call a timeout, render assistance, and notify a controller/evaluator or CAS/SAS.
vii. The lead controller should discuss plant and weather conditions before the start of each exercise and address limitations on running, jogging, or walking.
viii. All participants should use personal protective equipment unless otherwise determined by a controller.

c. Initiation and Termination — The lead controller should initiate the exercise with the concurrence of the on-duty security supervisor and operations shift manager/supervisor, if applicable. The initiation of the exercise should be communicated on appropriate radiofrequencies and/or the plant paging system. The lead controller should conduct radio checks as appropriate to ensure that all controllers are prepared for the initiation or resumption of the drill/exercise. The exercise will be terminated when one or more of the following occur:

i. All adversaries are neutralized or have given up the mission.
ii. A complete target set has been destroyed.
iii. It is determined that an actual condition exists that cannot be quickly corrected or is of such magnitude as to preclude the continuation of the drill.
iv. A condition adverse to personnel or plant safety exists.
v. The lead controller directs that the exercise stop.

d. Participant Responsibilities — The following criteria should be part of the briefing for participants on their duties and responsibilities associated with the exercise:

i. Each participant is personally responsible for his or her safe conduct.
ii. Each participant is responsible for monitoring his or her condition.
iii. Participants who hear an announcement to stop the exercise should immediately stop all exercise activity and maintain their position until they receive additional instructions.
iv. Participants will comply with all plant operations, security, and radiation protection requirements. The preexercise safety briefing will address radiation protection entry and exit procedures.
v. All participants should follow controller commands and requests. The postexercise critique should address differences in interpretations of scenario evolutions.
vi. After the conclusion of the drill/exercise and before the post-drill/exercise critique, all participants should have an opportunity to document their participation in the drill/exercise so their actions may be discussed and reviewed in the critique process.

e. Controller Responsibilities — The qualification requirements for drill and exercise controllers shall be in accordance with Appendix C to 10 CFR Part 73. Controllers have the responsibility to assist the lead controller in exercise safety and operation. They may be selected from the security staff or other organizations as appropriate. If possible, controllers should be assigned for each of the participants and adversaries involved in the evolution. To ensure that consistent and reliable results are achieved from the individuals executing the duties of controller, personnel assigned these duties should receive proper training. The following criteria should be part of the briefing for controllers on their duties and responsibilities associated with the exercise:

i. The exercise should be suspended any time an uncorrected safety hazard appears.
ii. Controllers should ensure that all safety requirements are met.
iii. Controllers should not engage in any activity that will distract from the exercise assignment.
iv. Controllers should not introduce any additional objectives into the exercise or make any rule changes that affect the exercise objective without the permission of the lead controller.
v. Controllers should not bring participants "back to life" after they have been declared neutralized, unless previously instructed to do so, or an error in exercise play caused the neutralization.
vi. Controllers should limit their contact with participants to exercise control functions and safety intervention.
vii. "Staging" of participants should be allowed as determined by the exercise scenario. The protective strategy delay times and timelines should be used for consistency.
viii. The effects of grenades, satchel charges, or other explosives should be discussed with controllers as required by the exercise scenario.
ix. After the conclusion of the drill/exercise and before the post-drill/exercise critique, all controllers should have an opportunity to document the actions and their evaluation of their assigned participant and the exercise so this information can be captured in the drill/exercise critique for review and potential improvements.

f. Rules of Conduct — The following rules of conduct should be part of the briefing for participants on the conduct of the drill/exercise:

i. Safety is paramount. The safety of participants, controllers/evaluators, plant personnel, and the plant must never be compromised.
ii. If identifying clothing or items such as armbands are assigned, participants should wear them at all times during the drill/exercise.
iii. Participants will follow all instructions given by a controller.
iv. Any participant may stop the drill/exercise for safety reasons. The lead controller will determine the resumption of the drill/exercise.
v. If the drill/exercise is temporarily halted, all participants should stop at their locations, cease all firing and movement, and wait for direction.
vi. Once neutralized, a participant should immediately cease all firing, movement, and communications. The participant should remain in place until the drill/exercise is terminated or the controller directs otherwise.
vii. Alarm station operators and/or participants may not engage in pre-drill/exercise intelligence-gathering. Participants who attempt to circumvent the rules will be removed from the drill/exercise.
viii. The controllers/evaluators observing and evaluating the activity will determine all neutralizations. Training equipment such as multiple integrated laser engagement system (MILES) gear can be used to assist in this determination.
ix. At the conclusion of each drill/exercise, participants should ensure that all radiological boundary controls are intact and security doors involved in the drill/exercise are secure.
x. "THIS IS A DRILL" should be used for drill and exercise verbal communications.
xi. The mock adversaries should actually deposit simulated explosives at doors, gates, and inside the target areas to be successful. If possible, the mock adversary will place the explosive at the specific location where the equipment damage is intended to occur. If the actual equipment cannot be reached, the mock adversary may provide specific detail as to exactly where it intended to place the explosive and the amount to be placed.
xii. On-duty security force personnel should not assist or impede the participants in any fashion unless the circumstance pertains to a safety-related issue or to a real security situation/response.
xiii. Participants should observe the deadly force rules of engagement as authorized by State law and as defined by station policy.

xiv. At no time should drill/exercise participant(s) manipulate any plant component. It should be stressed that extreme caution is to be used near plant equipment, and backpacks, mock weaponry, and associated drill/exercise equipment should be kept clear of plant equipment.
xv. Controllers/evaluators ensure that drill/exercise participants do not voluntarily or accidentally touch plant equipment, controls, or instrumentation. If at any time inadvertent contact is made with plant equipment, controls, or instrumentation, the controller/evaluator should immediately notify operations of the incident.
xvi. The mock adversaries and the insider must conform to the specific characteristics or requirements detailed in the DBT, in accordance with Appendix C to 10 CFR Part 73, Section II(l)(4).
xvii. Sufficient time should be allotted for the mock adversary team to gain intelligence information from the insider.
xviii. Plant familiarity for the mock adversary force should consist of only what the force has developed through information obtained from the insider or from public tours of the facility.
xix. Mock adversaries must begin the exercise from the point where they would first have the potential for identification/interaction with the licensee's security program measures.
xx. During the conduct of drills/exercises, the mock adversaries are required to carry mock equipment with them similar in size, shape, and weight to the equipment indicated within the scenario matrix, in accordance with Appendix C to 10 CFR Part 73, Section II(l)(4).
xxi. The mock adversaries will adhere to the equipment and explosive weight limitations detailed in the DBT, in accordance with Appendix C to 10 CFR Part 73, Section II(l)(4).
xxii. When penetrating barriers (fences, doors, walls, etc.), the mock adversaries' entire task time (e.g., set time, time to achieve standoff distance, time to recover the standoff distance, and traverse through the barrier) must be factored into the act. Proper care should be given to personal safety/protection when making entry. If portable blast protection is used, this equipment may be considered as part of the equipment carried in by the adversary team.
xxiii. Incapacitation criteria detailed in the DBT for weapons such as fragmentation devices, smoke grenades, and distraction devices will be followed during the exercise.

5.11 Critique and Evaluation

The licensee's physical protection program should integrate a plantwide protective strategy for responding to attempts at radiological sabotage. The licensee's protective strategy may be considered successful or effective if the adversary is detected, assessed, interdicted, and neutralized before successfully disabling all target set components within a single target set for the time necessary to cause significant core damage and spent fuel sabotage. The licensee may take credit for actions or equipment that protect a target set from destruction/disablement only if that action or equipment is listed as a component of the target set and is agreed to by consensus before initiation of the exercise. A licensee may ***not*** take credit for actions or equipment that are outside of the predetermined target set for the purpose of determining the effectiveness of the protective strategy or the capability of security personnel to carry out their assigned duties and responsibilities. In accordance with Appendix C to 10 CFR Part 73, Section II(l)(2), the licensee is responsible for entering identified drill or exercise deficiencies into the plant's corrective action program or training program and for correcting the identified deficiencies commensurate with their evaluated risk significance.

Members of the armed response team should be evaluated in all aspects of response, including but not limited to timeliness, use of cover and concealment, tactical movement and firing techniques, assessment, and communication. Alarm station personnel should be evaluated for assessment, communication, coordination, LLEA notification/coordination, and other aspects of their duties under emergency situations. The response team leader should be evaluated for performance in command and control and direction of response personnel to interdict and neutralize the threat.

The critique process is a crucial aspect of the drill and exercise program. This process involves evaluation of participant performance through specific critique criteria, participant self-assessment, and

observations by controllers/evaluators. The critique criteria should support the evaluation standards and performance criteria identified for the scenario.

5.11.1 Critique/Evaluation Material

The following criteria should be considered when developing critique material for drill or exercise evaluation purposes:

a. Each position and participant should be evaluated.
b. The ability of each participant to satisfy the performance criteria associated with his or her position should be evaluated.
c. Criteria not evaluated should be indicated on the critique. Evaluators should consider using NE (not evaluated) instead of N/A (not applicable).
d. The form should indicate whether the individual satisfied the performance criteria.
e. Any issues identified as a result of the individual's performance should be documented. Issues should be correlated to their respective evaluation standards.
f. Controller/evaluator performance evaluation comments should be solicited.
g. The critique material should give participants the opportunity to self-critique their actions and to provide feedback on the drill or exercise.
h. The critique should include an overall assessment of the success of the drill or exercise in meeting the key program elements identified.

5.11.2 Critique Process

At the conclusion of a drill or exercise, the lead controller should facilitate the critique. All controllers/evaluators, adversaries, and participants should normally participate. These critiques give the participants the opportunity to receive direct feedback from the controllers/evaluators. In addition, they allow the participants to provide direct input to the critique process.

The following sample format can be used as an effective means for performing critiques:

a. All members of the drill or exercise should attend.
b. The scenario, including goals and objectives, should be reviewed with the participants. (Use of a projector can be beneficial in providing this overview.)

Each participant and corresponding controller/evaluator will summarize his or her actions and should consider the following when providing an action summary:

a. If a participant had no interaction with the adversary force and with the outcome of the drill or exercise, he or she should keep the response to a minimum. The use of a simple statement such as "I responded to my assigned location and saw no action" is sufficient. The controller should also provide an evaluation of the participant's actions and reflect that the participant "saw no action."
b. If a participant took action that resulted in his or her neutralization or the neutralization of an adversary or adversaries, then the participant and controller report should provide specific details of the actions taken. The participant/controller information should include engagement distance, number of adversaries engaged, number of rounds fired and number of seconds, the probability of neutralizing the adversary (high, medium, or low) and if the neutralization(s) resulted from MILES.
c. If a participant took action that resulted in friendly fire, then the participant and controller report should provide specific details of the actions as identified in item (b) of this section.
d. A controller/evaluator whose participant had no interaction with the adversary force and with the outcome of the drill or exercise should minimize his or her response.
e. A controller/evaluator whose participant was actively involved in the outcome of the drill or exercise and who interdicted the adversaries should concur with the player's comments if applicable. If there is no concurrence, the controller/evaluator should provide details.

f. At the conclusion of critiques, the lead controller should review the results of the drill or exercise and discuss the positive and negative attributes of the activities.
g. During the review of the results, suggestions for correcting issues and concerns should be requested from participants and discussed.
h. As a conclusion to the critique, the lead controller should review the goals, objectives, and key program elements of the drill or exercise and discuss how each was or was not met.

5.12 Final Report

The final results of the drill or exercise should be detailed in a final drill report. The following information should be part of the final drill report:

- date/time;
- number/identifier;
- lead controller;
- plant conditions, security system status, and weather conditions;
- scenario description;
- key elements and evaluation criteria in the drill;
- deficiencies identified;
- actions taken on deficiencies;
- program/process strengths identified;
- whether the goals, objectives and key program elements of the drill or exercise were or were not met; and
- corrective actions (plant corrective action/training program) timeframe/priority given for resolution and identification of individual responsible for resolution.

Finally, the drill planning package developed for the evolution should be attached.

5.13 Identification and Resolution of Deficiencies

After the final critique results are prepared, the licensee can determine the disposition of each deficiency. In accordance with 10 CFR 73.55(b)(9) and Appendix C to 10 CFR Part 73, Section II(l)(2)(v), the licensee shall handle deficiencies identified during a drill or exercise consistently with the site's corrective action, self-assessment, or training program. The training program normally addresses training and human performance type issues/deficiencies. However, key program element deficiencies will be evaluated, tracked, and resolved using the plant's corrective action program.

Identification of issues from the drills or exercises is only the first step of the corrective action process. Management thoroughly reviews each deficient item identified and promptly develops and implements corrective action. To ensure resolution of issues, the licensee should regularly review the corrective actions identified through the drill and exercise process and evaluate their effectiveness.

5.13 Documentation

It is important that drill and exercise activities be properly documented in accordance with Appendix C to 10 CFR Part 73, Section II(l)(2), to ensure that appropriate levels of review and resolution of issues occur. Not all documents generated in the process of performing drills or exercises must be maintained as records.

The licensee should consider retaining the following documents:

- attendance roster for all drill and exercise-related training and briefings;
- scenarios;
- participation records showing security force personnel's participation in tactical drills and force-on-force tactical exercises;
- completed critique material, including chronologies;
- final drill or exercise report; and

– resolution/proposed resolution of critique items.

Documents that are to be considered as records should be legible and completed appropriately. They must be submitted to the station's records management organization in accordance with their station's policy and maintained in accordance with 10 CFR 73.70.

6. Duty Qualification and Requalification

In accordance with Section VI.C and VI.D of Appendix B to 10 CFR Part 73, individuals assigned duties and responsibilities identified in the Commission-approved physical security plan or safeguards contingency plan shall, before assignment, be trained and qualified to perform these duties and responsibilities in accordance with Appendix B to 10 CFR Part 73 and the Commission-approved training and qualification plan. This requirement also applies to supervisory personnel.

The licensee shall evaluate its protective strategy and training and qualification program to ensure that armed security personnel are trained and fully qualified to perform all aspects of the protective strategy with all required contingency equipment, commensurate with their duties. As necessary, the licensee shall adjust its training and qualification program for implementation of its protective strategy.

The licensee shall monitor the performance of armed security personnel against licensee-established goals and measures, in a manner sufficient to provide reasonable assurance that the protective strategy can be successfully implemented. Such goals and measures shall be established commensurate with the established DBT, including pertinent revisions and required measures.

To satisfy the requirement of Appendix B to 10 CFR Part 73, Section VI, paragraph E.1.e, the licensee shall ensure that each armed member of the security force is instructed in the use of deadly force as authorized by State law. This instruction must be designed to ensure a complete understanding of the principles involved in the application, escalation, and de-escalation of force.

The licensee shall ensure that the training and qualification program is included in the site corrective action program. This will enable the licensee training staff to monitor the training curriculum and make additions, modifications, or other changes as they become necessary.

6.1 Certifications of Instructors/Armorers

6.1.1 Qualified Security Training Instructors

A security training and qualification program is designed to support the station's response strategies and regulatory requirements by providing appropriate training to security personnel to ensure that they have the knowledge, skills, and abilities to properly execute the security plan.

To satisfy the requirements of Appendix B to 10 CFR Part 73, Section VI, paragraphs D.2.b and E.1.b, and to ensure that the site training and qualification program goals are met, each licensee shall establish a formal program for training and qualifying security instructors. The program should include guidance on instructor development and qualification. Security instructors who implement the security training program should normally be included in the station's existing instructor training program. When using contract instructors or trainers, the licensee should either include those personnel in the station's instructor training program or establish comparable criteria to be met through the vendor's program.

The role of the security training instructor is to analyze, design, develop, implement, and evaluate security training within the security training program. Additional duties and responsibilities include management and direct oversight of the security training program. The security instructor is responsible for the final documentation of each critical task qualification performed by individuals who are assigned duties and responsibilities identified in the Commission-approved security plans.

The role of the security supervisor is to verify and attest to the proper documentation and completion of each individual's training record prepared by the security training instructor.

Initial and continuing instructor training is needed to establish and maintain an instructor's competence.

6.1.2 Initial Instructor Qualification

Initial security training instructor qualifications should include, but are not limited to, the following skills:

a. *Presentation skills* include vocal inflection, voice analysis, gestures, eye contact, verbal communication, and nonverbal communication.

b. *Instructional skills* include introducing a lesson; presenting content; administering application; monitoring performance; providing feedback; summarizing a lesson; applying adult learning theory; conducting practical demonstrations; maintaining and using individual trainee records and training program records; designing training programs; planning and developing lessons; selecting, developing, and modifying training materials; presenting laboratory instruction; managing individualized instruction; conducting walkthroughs and plant tours; conducting simulator training; and supervising OJT.

c. *Facilitation skills* include establishing a positive climate, setting up a classroom, starting a course, maximizing learner confidence and self-esteem, increasing participation and involvement, managing classroom time, motivating learners, addressing individual needs, managing small group activities, promoting transfer of skills, managing group dynamics, facilitating discussions, applying questioning techniques, handling resistance, and handling difficult learners.

6.1.3 Continuing Training for Security Instructors

Continuing training for security instructors is recommended and should be conducted in accordance with the station's existing instructor training program. Training needs analysis, feedback on training performance, and other inputs as defined in the following sections should be the basis of continuing training programs. Qualified instructors should review the initial instructor training elements to enhance their knowledge, skill, and ability.

6.1.4 Subject Matter Experts

SMEs may or may not be qualified security instructors. SMEs must be qualified in the tasks they are assigned to instruct and evaluate and should possess a level of knowledge and experience in the subject matter to be considered fully proficient. SMEs should have (at a minimum) the following attributes:

– field knowledge, skill, and ability;
– effective interpersonal communication skills;
– effective observation skills;
– acceptance of self-development; and
– professionalism.

The initial SME training should be based on defined instructor competence and consist of the fundamentals of training techniques. Typically, the program would address the following:

– use of training aids,
– audiovisual equipment,
– presentation skills,
– questioning techniques, and

– conducting a training session.

6.1.5 Firearms Instructor

In accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph E.1.b, licensee firearms instructors shall be trained and qualified by a Federal, State, local, or nationally recognized entity. It is recommended that firearms instructors follow the recertification criteria set by the certifying agency not to exceed 3 years. Certification must be obtained for each weapon type required in the implementation of the site's protective strategy. Additionally, it is recommended that the course be recognized as a law enforcement certification and be designed to train and prepare the student to be a firearm instructor and not designed solely to improve weapon proficiency and qualification for the student.

Examples of a recognized entity would be the National Rifle Association's law enforcement firearms instructor courses and those offered by a Federal, State, or local police commission.

6.1.6 Armorer

To satisfy the requirements of Appendix B to 10 CFR Part 73, Section VI, paragraph G.3.a, armorers who are station employees shall be trained in and qualified to repair or service the licensee firearms by the weapons manufacturer or a contractor working on behalf of the manufacturer. Station armorers should follow the recertification criteria set by the certifying manufacturer. Certification must be obtained for each weapon required in the implementation of the site's protective strategy. Station armorers should attend recertification training according to the manufacturer's standard at an interval not to exceed 3 years. If the licensee does not employ a certified armorer, it may send the weapons to a certified offsite armorer for required maintenance.

6.2 Written Examination

In accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph D.1.b, individuals assigned security duties and responsibilities shall demonstrate the required knowledge, skills, and abilities by completing an annual written exam on each critical task specific to their assigned security duties as identified in the Commission-approved training and qualification plan. Recognition of potential tampering involving both safety and security equipment and systems shall be included. A minimum score of 80 percent is required to demonstrate an acceptable understanding of assigned duties and responsibilities. The licensee shall administer the written examination(s) before assignment of security-related duties and annually thereafter.

The licensee shall conduct an additional examination for armed security personnel to demonstrate the required knowledge, skills, and abilities identified in the Commission-approved training and qualification plan. A minimum score of 80 percent is required to demonstrate an acceptable understanding of assigned duties and responsibilities as an armed member of the security force. Personnel will take the written examination before assignment of security-related duties and annually thereafter.

6.3 Hands-On Performance Demonstration

To satisfy the requirements of 10 CFR 73.55(b)(5) and Appendix B to 10 CFR Part 73, Section VI, paragraph D.1.b, individuals assigned security duties and responsibilities shall demonstrate hands-on performance of assigned duties and responsibilities by performing a practical hands-on demonstration for required tasks. The hands-on demonstration must ensure that theory and associated learning objectives for each required task are considered and that each individual demonstrates the knowledge, skills, and abilities required to effectively perform the task. The hands-on demonstration is considered job performance task training and not critical task qualification. Hands-on demonstration should be used to prepare individuals for critical task qualification.

6.4 Requalification

To satisfy the requirement of Appendix B to 10 CFR Part 73, Section VI, paragraph D.2.a, annual requirements must be met at a nominal 12-month periodicity. Annual requirements may be completed up to 3 months before or 3 months after the scheduled date. However, the next annual training must be scheduled 12 months from the previously scheduled date rather than from the date the training was actually completed.

Individuals qualified in accordance with the Commission-approved training and qualification plan shall periodically requalify by participating in a continuing training program to maintain or improve the individual's proficiency in those skills and abilities that are required to implement the site physical protection program and site protective strategy. The licensee requalification program should emphasize or focus on the effective demonstration of perishable knowledge, skills, and abilities. Perishable knowledge, skills, and abilities would be those that are not utilized on a regular or recurring basis (such handcuffing techniques), and therefore, an individual becomes less proficient or effective in performing a given task over time. Other knowledge, skills, and abilities (such as radio communications) that may be performed daily would require less emphasis in a requalification program. Personnel may demonstrate and be evaluated on these knowledge, skills, and abilities during routine performance as part of normal duties or by requalification in a manner similar to the initial qualification. If requisite requalification is not achieved, the individual shall not be returned to security duties until he or she has completed an acceptable level of remediation and requalification. In accordance with 10 CFR 73.55(d)(3), the licensee shall not allow any individual to be assigned security duties, or any individual to assume or return to duty, who has not satisfied the qualification or requalification requirements of Appendix B to 10 CFR Part 73, Section VI, and the licensee's Commission-approved training and qualification plan, except as otherwise authorized by the Commission. Qualified training instructors shall document all training, qualification, and requalification, and a security supervisor shall attest to the documentation.

6.4.1 Short-Cycle Requalification

In accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph D.2.a, the requalification of annual requirements must be scheduled at a nominal 12-month periodicity. The actual scheduled date for the requalification of an annual requirement can be changed by conducting training earlier than the originally scheduled date. The next scheduled date for requalification, from that point forward, cannot exceed the specified 12-month periodicity.

Licensees shall ensure that, when applying this "short cycle" provision to the training schedule for their annual requirements, their schedule for weapons range activities still meets the nominal 4-month periodicity identified in Appendix B to 10 CFR Part 73, Section VI, paragraph E.1.f.

7. Weapons Training

In accordance with Section VI, paragraphs E and F, of Appendix B to 10 CFR Part 73, the NRC requires that all armed security personnel (i.e., armed security officers, armed responders, and armed response force leaders) receive approved firearms training and successfully qualify, based on the approved firearms qualification courses, for all firearms they are authorized to carry. To satisfy Appendix B to 10 CFR Part 73, Section VI, paragraphs A.5, the licensee should ensure that an individual uses the same type of firearms, model and associated features (i.e., caliber, sighting system), and ammunition (i.e., equivalent in trajectory and recoil) for training and qualification purposes as the individual would use while on duty.

7.1 General Firearms Training

In accordance with 10 CFR 73.55(d)(5), a licensee's firearms training program shall include explicit provisions to prevent security personnel from returning to armed duty status if they have not achieved te required qualifications on all training and critical tasks.

In accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph E.1.b, armed security personnel shall complete firearms training to demonstrate appropriate procedures for the safe handling of, and to exhibit basic skills with, assigned firearms. The objective is to conduct firearms training drills and courses of fire to teach the necessary skills and abilities to armed security personnel.

The firearms training program should include, but is not limited to, the following range safety guidelines:

a. Firearms range safety rules form a "safety culture" that should be maintained at all times.
b. Firearms range safety guidelines should incorporate industry operating experience and other related events.
c. Firearms range safety guidelines should also address weapons operator safety.
d. Range safety rules should be reviewed before conducting any range activities.

7.2 Firearms Instructors

In accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph E.1.b, each armed member of the security organization must receive training and qualification from an instructor, who in turn also is qualified through a certification process to provide the specified training to others. Section 6.1.5 of this regulatory guide discusses firearms instructor certification in greater detail.

7.3 Annual Firearms Familiarization

Commission requirements for annual firearms familiarization appear in Appendix B to 10 CFR Part 73, Section VI, paragraphs E and F. Annual firearms familiarization shall be conducted for all armed personnel in accordance with the Commission-approved training and qualification plan. Firearms familiarization can be conducted with ammunition other than what is used on duty if it is equivalent in trajectory and recoil.

When firing for the purpose of familiarizing themselves with their weapons, armed security personnel should wear all equipment required by site-specific instructions for duty and tactical responses. Shooters should reload using ammunition pouches, speed loaders, magazines, magazine pouches, or from issued tactical vests or harnesses that are provided and worn for duty. Duty and tactical equipment shall be configured on the range in the same manner that is to be worn for day-to-day job functions.

Firearms familiarization shall include, but is not limited to, the areas described below.

7.3.1 Mechanical Assembly, Disassembly, Weapons Capabilities, and Fundamentals of Marksmanship

In accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph E.1.d, licensees shall ensure that all armed members of the security organization are trained and qualified to disassemble and reassemble each assigned weapon, considering the manufacturers' recommendations. Training on weapons capabilities shall include the maximum range, the maximum effective range, and the penetration capabilities of all licensee-issued firearms and ammunition. Armed security personnel should participate in training on the fundamentals of marksmanship (grip, stance or position, trigger control, sight alignment, sight picture, breathing, follow through) to emphasize the development of shooting skills.

7.3.2 Weapons Cleaning and Storage

The licensee's firearms maintenance program shall include instruction in the care, cleaning, and storage of firearms. Section 8.3 of this regulatory guide discusses firearms maintenance.

7.3.3 Combat Firing

Weapons operators in combat or contingency situations should possess skills in weapons operations, marksmanship, and tactics, which enable success and survivability. The programmatic

format for the training to develop these skills should be based on a consistent, progressive approach. Once overall basic proficiency has been established, shooters should be challenged with more progressive and demanding training to advance their proficiency levels. The skill level of those who will be participating should be considered in the development of advanced training. More important, when conducting this type of weapons training, the skill levels of all shooters participating should be closely monitored to ensure that the training is commensurate with the skill levels demonstrated by the participants and to ensure overall safety. The goal of this type of weapons training should be to achieve a level of conditioning that provides the weapons operator the ability to perform and function successfully without hindering the cognitive thought process, much like "multitasking." The ability to multitask in combat situations supports the ability of a force to gain, regain, and maintain the initiative during a contingency-related event. Training that addresses combat firing should also focus on the weapons operator's ability to identify the opportunities that exist in the combat/contingency environment and to take decisive and effective advantage of them.

Training for combat firing should include exercises that develop individual as well as team proficiency. Training that specifically addresses combat firing should include, but is not limited to, the following aspects:

- assessment
    - (before engagement) situational awareness/surveillance of the operator's horizon/identification of cover and concealment, and
    - (after engagement) adversary status/communications/weapons condition and ammunition management.
- identification
    - identification of friend or foe/decision to engage,
    - threat management (from immediate to impending threats), and
    - situational training (threat amidst nonthreat-related targets).
- target acquisition
    - from the ready, holster or carry (safety circle);
    - rapid acquisition techniques (initial acquisition and adjusted acquisition);
    - single threat/single threat amidst nonthreat-related targets;
    - multiple threat/multiple threat amidst nonthreat-related targets; and
    - threat management (from immediate to impending threats, sequential acquisition).
- engagement
    - use of cover and concealment;
    - techniques of effective rapid fire (all weapons);
    - recovery from malfunctions (immediate action/feedway clearance);
    - weapons transitions;
    - shooting while moving (advancing, evading, and lateral movement);
    - stationary and moving threat;
    - threat management (engagement of immediate to impending threat, sequential fire);
    - multiple threat (sequential fire)/multiple threat amidst nonthreat-related targets;
    - reaction to ambush;
    - recovery from engagement (back to assessment) and continuation of mission; and
    - close-quarter firing.

The training identified above can also be assimilated into a team training program with minor modification and the addition of some of the following aspects:

- team assignments;

– team communication (conventional radio, verbal command, hand and arm signals);
– team threat communications (warning commands);
– team movement (bounding over-watch, in exterior open areas, in interior areas);
– team tactics (room entries, take-back strategies); and
– team engagements (assignments, threat management, sequential fire).

The training identified above should be performed both during the night and during the day. Additional considerations for training at night should include, but are not limited to, employment of the tactical flashlight, limited illumination, and additional range safety measures. This training may also be conducted as dry-fire training or as force-on-force training with the use of MILES, Simunitions®, or paintball systems.

7.3.4 Safe Weapons Handling

Safe weapons handling skills training should be developed for the safety and operation of each type of weapon assigned to the licensee's armed security personnel. The safe weapons handling training should incorporate the following firearms safety rules:

i. Treat all firearms as loaded at all times.
ii. Never allow the muzzle of a firearm to be pointed at anything that one does not intend to shoot, including allowing the muzzle of the weapon to cross any portion of oneself.
iii. Do not place your finger on the trigger, or inside the trigger guard, until one is ready to engage a target and discharge the firearm. A shooter's finger should be flat on the frame of the weapon.
iv. Positively identify the target and be aware of what is beyond the target (i.e., types of walls (concrete, wood, drywall), people (innocent bystanders, friendlies), and critical equipment).

e. Clearing, Loading, Unloading, and Reloading

Clearing, loading, unloading, and (tactical and speed) reloading procedures for each assigned firearm should be conducted. Training for the retention of unused ammunition during tactical reloads should be considered.

7.3.5 Firing Under Stress

Firearms training programs should include training exercises that induce stress, including close-quarter combat, rapid fire, and precision shooting (both short range and extended distance). Stress-induced training may be physical or mental and should strive to include both aspects. In a stress-induced training environment, the body's fine motor skills and attention to detail become difficult to maintain. When training in a stress-induced environment, all personnel need to be aware that the shooters' attention to weapons safety may decrease. Stress-induced training should start with low-level drills and work up to complex stress activities, which could include the licensee's tactical course of fire.

The ability of a weapons operator to function effectively in a combat/contingency environment promotes success. In a training environment, it is difficult to replicate the variables that may occur in a combat/contingency environment; however, methods exist to induce the sense of stress on the weapons operator to provide familiarity with working through and overcoming stress. Stress firing exercises can be performed in conjunction with combat firing exercises because elements of stress are inherent in the principles and concepts of combat firing. Conducting training that specifically induces stress should provide the weapons operator with increased exposure to unfamiliar and difficult conditions, which is the primary purpose of stress firing.

The following are examples of elements that can be introduced into the weapons training environment that will induce stress and that should be performed at night and during the day:

– time limitations (exercise completion times, reduced target exposure times);
– physical activity (running, climbing stairs);
– loud audible noise (simulated small arms fire, explosions);

– weapon malfunctions (immediate action, feedway clearance, weapons transitions);
– limited lighting conditions at night;
– simulated equipment failures (primary sighting system inoperable, magazine fail to feed);
– simulated incapacitation (incapacitation exercises, nondominant/support hand fire); and
– simulated use of chemical agents (wearing of the gas mask for the duration of the exercise).

7.3.6 Zeroing Weapons and Weapons Sighting Adjustments

Firearms training programs should include instruction for all personnel to understand and perform the basic zeroing of all weapons and the adjustment of weapon sighting mechanisms. Some weapons do not allow a shooter to manually perform zeroing without specialized tools. Operators with weapons that have sighting systems that a shooter can manipulate should have a basic understanding of how to adjust the windage and elevation on all devices. Sighting systems should be inspected daily to ensure that they are operable (e.g., front/rear sights not bent or broken, glass in-scope-type systems not cracked, batteries
replaced if needed, night sights illuminate, sighting systems mounted properly and not loose) using appropriate safety rules for weapons handling.

7.3.7 Target Identification and Engagement

Target identification and engagement are key components of firearms proficiency. The ability of the security force to distinguish between friend and foe promotes success, survivability, and safety while minimizing the potential for fratricide. Firearms training programs should include firearms training activities that develop the security officer's ability to correctly identify adversarial threats amidst nonadversarial threats. These situational training evolutions, as well as all firearms training, should also provide for the progressive development of the engagement process through repetition and conditioning exercises. Target identification and engagement training should consist of training that focuses on the development of the following:

– assessment (situational awareness/surveillance of the operator's horizon);
– identification (identification of friend or foe/decision to engage);
– target acquisition (from the ready, holster or carry (safety circle)); and
– engagement (adequate for neutralization/recovery and mission continuation).

Target identification and engagement training should be conducted to reflect the environment and conditions the security force would encounter when exercising the licensee's protective strategy (i.e., while moving, in open, from cover).

Licensees should consider the safety of the shooters when using metal target systems (i.e., pop-up/knock-down targets, shooting trees, metal reactive target systems). When conducting range activities with metal target systems, licensees should establish minimum distances at which a shooter should not engage a metal target system because of the risk that the projectile will fragment and ricochet when it hits a metal target system.

7.3.8 Weapons Malfunctions

Weapons malfunctions may occur at any point during weapons operations. It is important that weapons operators be trained to overcome weapons malfunctions so that they may remain effective in the fire fight and overall contingency environment. The licensee's weapons training program should include training to apply weapons-clearing techniques, such as immediate action as well as weapons feedway clearances. The prescribed method for causing malfunctions during training should include the use of inert training ammunition commonly referred to as "dummy" rounds.

During training preparation, weapons magazines should be randomly loaded with dummy rounds situated among the live rounds in the weapons magazines so that a weapons operator is unaware of the location of the dummy rounds. By prestaging ammunition in this manner, the weapons operator gains experience in the actual identification of a weapons malfunction and rapid reaction to clearing and

returning the weapon to an operable state. The use of dummy rounds provides the exacting realism of a weapons stoppage or malfunction through the physical stimuli associated with the event. Recreating this event in an exacting, realistic manner develops the operator's sense of recognition and reactionary response to actual weapons stoppages or malfunctions.

Audible commands such as "Malfunction" or "Gun Down" should not be used to induce weapons malfunctions in training or in the tactical qualification course because they may condition the weapons operator to react to a weapons malfunction via audible stimuli, which is unrelated to an actual weapons malfunction.

7.3.9 Cover and Concealment

In accordance with Appendix B tor 10 CFR Part 73, Section VI, paragraph E.1.d, all armed personnel shall be trained to recognize and effectively use cover and concealment. Training should include methods of approaching, moving, and shooting around various forms of cover from multiple positions. Considerations that can affect whether or not an object is "cover" or "concealment" may include the type and caliber of the firearm and ammunition being fired, as well as the distance from which it is fired. Cover can deteriorate rapidly under weapons fire and should be considered consumable. Cover may stop one or two rounds, but not multiple rounds. Examples of cover are concrete walls, steel beams, large trees, heavy metal machine parts, or large pipes.

Concealment is protection from observation. It is provided by vegetation, terrain features, terrain relief and drainage, manmade structures, weather conditions, such as fog and precipitation, and darkness. Proper evaluation of these aspects differentiates concealment from cover. Concealment is only effective when individuals do not disclose their location by fire or maneuver.

7.3.10 Weapons Familiarization

In accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph E.1.d, weapons familiarization is a component of every form of weapons training because each time an operator handles a weapon he or she becomes more familiar with the weapon. Weapons familiarization should also be based on a consistent, progressive approach. Once overall basic proficiency has been established, shooters should be challenged with more progressive and demanding training to further enhance their familiarity with the weapons they employ.

Weapons familiarization training should provide a basis of knowledge for the particular weapon systems being used at the site and should include the following basic skills:

- weapons safety (for all weapons being used at the site);
- weapon disassembly;
- weapons nomenclature (safety features, certain design characteristics such as gas operating system);
- weapon functioning (cycle of operation, the action of all working parts);
- basic weapon operation (safety features, firing, loading and unloading);
- dry-fire range familiarization (stressing range safety procedures);
- live-fire range familiarization (e.g., familiarization with the report and recoil of the weapon);
- basic marksmanship (application of the fundamentals of marksmanship);
- stoppages and malfunctions (immediate action, feedway clearance);
- firing positions (e.g., prone, kneeling, sitting); and
- timed fire exercises (e.g., from ready, carry or holster using firing positions, prone, kneeling).

Shooters should possess a high level of proficiency in the above training for all weapon systems before moving to more advanced weapons familiarization training. Continuing familiarization takes place during the conduct of advanced firearms training.

Advanced training for weapons familiarization should be performed for all weapons systems used and should include the following advanced skills:

– target acquisition (rapid acquisition from ready, carry or holster);
– rapid fire techniques;
– stoppages and malfunctions (conditioning recovery and continuation of fire);
– nondominant/support hand fire;
– shooting while moving (laterally, advancing, and evading);
– shooting from cover (simulated hardening (e.g., wooden barricades));
– shooting from elevated positions;
– weapons transitions; and
– firing with field protective (gas) mask donned.

The exercises listed under this section should also be used for weapons familiarization training with the field protective (gas) mask donned.

7.4 Use of Force

To satisfy the requirement of Appendix B to 10 CFR Part 73, Section VI, paragraph E.1.e, each licensee shall ensure that all armed members of the security organization are instructed on the use of the force continuum, including the use of deadly force as authorized by applicable State law. The Commission acknowledges in 10 CFR 73.55(k)(2) that some situations or circumstances could require a security officer to use force in the performance of his or her duties. Therefore, these provisions require that each member of the security organization, commensurate with his or her assigned duties, possess a thorough understanding of the proper use of force within the force continuum to enable security personnel to escalate or de-escalate his or her their response in proportion to the threat or level of resistance being directed at him or her. In addition, the NRC has determined that to enhance officer safety, each member of the security organization should receive instruction regarding the physiological and psychological effects on the human body during intense or life-threatening situations and that armed security personnel should receive detailed and recurring training in weapon retention techniques.

7.5 Range Periodicity

As required in accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph E.1.f, armed security personnel shall participate in range activities specified in the approved training and qualification plan on a nominal 4-month periodicity. The activities may be conducted up to 5 weeks before or 5 weeks after the scheduled date. This provision is intended to account for unexpected site-specific circumstances that may delay any given individual's ability to participate in range activities on a specified date; however, the NRC recommends that all licensees and all participants make every effort to meet predetermined dates, where possible.

7.6 Weapons Qualifications and Requalifications

All armed personnel shall be qualified and requalified on all assigned weapons and weapons systems (including sighting systems), in accordance with Appendix B to 10 CFR Part 73, Section VI, paragraphs E and F. Qualifications should be accomplished with the same type of firearm, model and associated features (i.e., caliber, sight system), and ammunition used while on duty.

Nonduty ammunition (i.e., frangible ammunition) may be used in lieu of the duty ammunition for firearms qualifications provided the ammunition meets the requirements in Appendix B to 10 CFR Part 73 and the Commission-approved training and qualification plan. The nonduty ammunition should properly function in the firearm like the duty ammunition and should closely replicate the recoil, muzzle flash, and trajectory of the duty ammunition. Firearms instructors should verify the conditions on the range to determine that the nonduty ammunition replicates the stated requirements. To verify recoil and muzzle flash, instructors should blind load the weapon with both types of ammunition and fire the weapon. If no differences are noticeable, then the nonduty ammunition has been validated for recoil and muzzle flash. The two ammunition types can be compared in different ways for similarities in trajectory. First, using a duty firearm, a test shooter can fire the two types of ammunition from the same distances used in the course of fire. The test shooter should be an experienced marksman and fire the weapon from

a supported position. The test shooter should fire at two separate targets, one kind of ammunition for each target, firing three rounds in each target and should verify that the points of impact on the targets closely match each other. Alternatively, the licensee can use trajectory software to produce trajectory tables for the duty round and the nonduty round and then compare the points of impact for both rounds and ensure they are similar. After conducting and documenting the verifications stated above, nonduty ammunition may be used in lieu of the duty ammunition for firearms qualifications.

When firing for qualification or requalification, armed security personnel should wear all equipment required by site-specific instructions for duty and tactical responses. Shooters should reload using ammunition pouches, speed loaders, magazines, magazine pouches, or from issued tactical vests or harnesses that are provided and worn for duty. Duty and tactical equipment should be configured on the range in the same manner that it is to be worn for duty.

If a requisite qualification or requalification is not achieved, an individual shall not be assigned or returned to armed duty until remediation and qualification or requalification on that task is completed (in accordance with 10 CFR 73.55(d)(3)). Remedial training programs should be developed to provide personnel with additional firearms skills training as necessary to qualify on the specific weapons qualification course.

A typical remedial firearms qualification course could include the following:

- one-on-one instruction, requiring correct demonstration of shooting techniques through dry-fire exercises before permitting live-fire practice;
- basic fundamentals of marksmanship, beginning with dry-firing exercises if applicable, advancing to live-fire practice, and culminating in a qualification attempt; and
- analysis of all results with the shooter to remedy the identified problem(s).

In accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph D.2.b, a qualified training instructor shall document, and a security supervisor shall attest to, the qualification and requalification of each individual. In accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph H.2, the licensee shall retain each individual's initial qualification records for 3 years after termination of the individual's employment and shall retain each requalification record for 3 years after it is superceded.

7.6.1 Alternate Weapons

In accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph F.2, upon written request by the licensee, the Commission may authorize an applicant or licensee to provide firearms qualification programs other than those listed in Appendix B to 10 CFR Part 73, if the applicant or licensee demonstrates that the alternative firearms qualification program satisfies the NRC requirements. Written requests shall detail the proposed firearms qualification programs and describe how the proposed alternative satisfies Commission requirements.

7.6.2 Firearms Qualification Courses

All armed personnel assigned duties and responsibilities involving the use of weapons shall be qualified on each weapon type for which the individual will be assigned, in accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph F.5. Armed personnel shall qualify in accordance with the standards and scores established by a law enforcement course or an equivalent nationally recognized course.

A law enforcement course or an equivalent nationally recognized course could include the following:

- Federal, State, or local law enforcement qualification courses of fire; and
- National Rifle Association, military, or International Association of Law Enforcement Firearms Instructors qualification courses of fire.

Once designed, licensees should submit their qualification courses to the recognized entity for certification before the courses are implemented. The licensee may use current qualification courses developed and certified by the above-listed entities; however, such courses may not be modified. When using the qualification courses that have been developed and certified by the recognized entity, the weapons operating system shall be similar to that for which the course was designed (i.e., a revolver course shall not be used to qualify operators on the use of a semiautomatic handgun).

7.6.3 Handgun

In accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph F, licensees shall develop and implement handgun qualification courses for daylight and night fire to evaluate the shooter's marksmanship and firearm manipulation skills under both daylight and reduced-light conditions. The minimum qualifying score for each course shall be 70 percent.

Typical qualification courses should quantify a shooter's ability to accurately discharge his or her firearms in a controlled environment. Licensees should develop and conduct qualification courses as a "performance-based critical-task test" of each shooter's ability to meet the requirements set forth in the licensee's approved training and qualification plan. Qualification courses should include a predetermined amount of ammunition, type of target(s), and scoring system to be used (i.e., 60 rounds fired at a B-27-type target with the maximum score of 300 points divided by 3).

Typical daylight handgun qualification courses may include the following:

- moving from one shooting position to another (i.e., standing to kneeling, standing to prone) before, or during, a course of fire;
- reloading;
- dominant/firing hand and nondominant/support hand shooting;
- timed stages of fire (i.e., two rounds in 3 seconds, two rounds in 5 seconds depending on distance from target) and multiple rounds fired at the target (stationary or turning) during the stage of fire (i.e., two rounds, four rounds, eight rounds, and reload);
- shooters engaging the targets from multiple distances, starting from a close or distant proximity to the target and gradually increasing or decreasing distance from the target (i.e., 7, 10, 15, and 25 yard lines or 25, 15, 10, and 7 yard lines);
- shooters engaging the targets from the standing, kneeling, and prone positions;
- shooters engaging the targets drawing the firearm from the holster; and
- shooters engaging the targets from the ready position (i.e., weapon in shooter's hand with no sight alignment attained).

Reduced-light (night-fire) handgun qualification courses should be developed to include some of the elements listed above for the daylight handgun qualification course. Night-fire qualifications should apply conditions that reasonably approximate expected loss-of-lighting conditions at the site. Licensee light-level standards and procedures should be used during periods of reduced-light range activities and are site specific. Licensee procedures would normally address these requirements. Qualification courses should include a predetermined amount of ammunition, type of target(s), and scoring system to be used (i.e., 60 rounds fired at a B-27-type target with the maximum score of 300 points divided by 3).

A heightened level of safety should be maintained during reduced-light training. Familiarization in reduced-light training should be provided to shooters before qualification courses. Substituting commercially available light-reducing equipment (i.e., welders goggles or dark-light simulator eye wear) should not be used when conducting reduced-light training. Substitute equipment should not be used when conducting reduced-light qualifications in accordance with the licensee's approved training and qualification plan.

Licensees should consider providing luminous night sights for all their assigned handguns. These sighting devices typically consist of three dots, one on the front sight and two on the rear sight. Night sights are effective for reduced-light conditions. When using such devices, shooters typically will

focus on the proper firearms fundamentals and achieve a higher degree of accuracy. However, shooters should also be aware that the lumination of night sights may allow an adversary to identify the shooter's location.

Control of range activities during reduced-light training is critical for the overall safety of all personnel. Firearms instructors should consider policies and procedures for using lighting devices to identify themselves, as well as shooters, during reduced-light training. Flashlights with red filters or chemical sticks could be used to provide the identification needed. Firearms instructors should consider the preservation of all personnel's night vision when using these lighting devices. Firearms instructors should follow a standard ratio of one instructor for every three shooters during reduced-light range activities.

Security staff of licensees that approve the use of flashlights for range activities should become familiar with the equipment. Licensees should develop specific reduced-light courses of fire that include shooting both with and without flashlights. Classroom training and dry-firing exercises should be conducted with the flashlights before live-fire activities.

Licensee light-level standards and procedures should be used during periods of reduced-light range activities and are site specific. Licensee procedures would normally address these requirements.

7.6.4 Semiautomatic Rifle

In accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph F, licensees shall develop and implement semiautomatic rifle qualification courses for daylight and night fire to evaluate the shooter's marksmanship and firearm manipulation skills under daylight and reduced-light conditions. The minimum qualifying score for each course shall be 80 percent.

For licensees that use multiple sighting systems, all armed members of the security organization should qualify separately on each primary, backup, and alternate sighting system (i.e., optics, thermal scope, iron sights) required to implement the site's protective strategy.

Typical qualification courses should quantify a shooter's ability to accurately discharge his or her firearms in a controlled environment. Licensees should develop and conduct qualification courses as a performance-based critical-task test of each shooter's ability to meet the requirements set forth in the licensee's approved training and qualification plan. Qualification courses should include a predetermined amount of ammunition, type of target(s), and scoring system to be used (i.e., 60 rounds fired at a B-27-type target with the maximum score of 300 points divided by 3). For range facilities that cannot accommodate firing at increased distances, licensees may use reduced-size targets to simulate increased distances consistent with the target manufacturer's specifications (i.e., a 50-percent reduction in target size will increase the distance by a factor of 2).

Typical daylight semiautomatic rifle qualification courses could include the following:

- moving from one shooting position to another (i.e., standing to kneeling, standing to prone) before, or during, a course of fire;
- reloading;
- dominant/firing hand and nondominant/support hand shooting;
- timed stages of fire (i.e., two rounds in 5 seconds depending on distance from target) and multiple rounds fired at the target (stationary or turning) during the stage of fire (i.e., two rounds, four rounds, eight rounds, and reload);
- shooters engaging the targets from multiple distances between 25 and 200 yards or up to the maximum distance of the range and/or defensive strategy requirements for engagement with adversaries;
- shooters engaging the targets from the standing, kneeling, and prone positions;
- rifle slings and/or bipods/tripods for shooting support (if used on duty); and
- shooters engaging the targets from the ready/carry positions (weapon in shooter's hand with no sight alignment attained).

Reduced-light (night-fire) semiautomatic rifle qualification courses should be developed that include some of the elements listed above in the daylight semiautomatic rifle qualification course. Night-fire qualifications should apply conditions that reasonably approximate expected loss-of-lighting conditions at the site. Qualification courses should include a predetermined amount of ammunition, type of target(s), and scoring system to be used (i.e., 60 rounds fired at a B-27-type target with the maximum score of 300 points divided by 3).

A heightened level of safety should be maintained during reduced-light training. Familiarization in reduced-light training should be provided to shooters before qualification courses. Substituting commercially available light-reducing equipment (i.e., welders goggles or dark-light simulator eye wear) should not be used when conducting reduced-light training. Substitute equipment should not be used when conducting reduced-light qualifications in accordance with a licensee's approved training and qualification plan.

Licensees should consider providing luminous night sights for all their assigned semiautomatic rifle iron sights. Night sights are effective for reduced-light conditions. When using such equipment, shooters typically will focus on the proper firearms fundamentals and will achieve a higher degree of accuracy. However, shooters should also be aware that the lumination of night sights may allow an adversary to identify the shooter's location.

Control of range activities during reduced lighting is critical for the overall safety of all personnel. Firearms instructors should consider policies and procedures for using lighting devices to identify themselves, as well as shooters, during reduced-light training. Flashlights with red filters or chemical sticks could be used to provide the identification needed. Firearms instructors should consider the preservation of all personnel's night vision when using these lighting devices. Firearms instructors should follow a standard ratio of one instructor for every three shooters during reduced-light range activities.

Security staff of licensees that approve the use of flashlights for range activities should become familiar with the equipment. Licensees should develop specific reduced-light courses of fire that include shooting both with and without flashlights. Classroom training and dry-firing exercises should be conducted with the flashlights before live-fire activities.

Licensee light-level standards and procedures should be used during periods of reduced-light range activities and are site specific. Licensee procedures would normally address these requirements.

7.6.5 Shotgun

In accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph F, licensees shall develop and implement shotgun qualification courses for daylight and night fire to evaluate a shooter's marksmanship and firearm manipulation skills under daylight and reduced-light conditions. The minimum qualifying score for each course shall be 70 percent. Typically, when the target is scored for a shotgun qualification course, any projectile impression or cutting the silhouette of the human form will be scored as one point.

Typical qualification courses should quantify a shooter's ability to accurately discharge his or her firearms in a controlled environment. Licensees should develop and conduct qualification courses as a performance-based critical-task test of each shooter's ability to meet the requirements set forth in the licensee's approved training and qualification plan. Qualification courses should include a predetermined amount of ammunition, type of target(s), and scoring system to be used (i.e., 8 rounds of 00 buckshot fired at a B-27-type target with the maximum score of 72 points or a minimum of 10 rounds of rifle slugs fired at a B-27-type target with the maximum score of 10 points).

Typical daylight shotgun qualification courses could include the following:

- moving from one shooting position to another (i.e., standing to kneeling) before, or during, a course of fire;
- reloading;
- strong hand and support hand, nondominant (commonly known as weak hand) shooting;
- timed stages of fire (i.e., two rounds in 3 seconds, two rounds in 5 seconds depending on distance from target) and multiple rounds fired at the target (stationary or turning) during the stage of fire (i.e., two rounds, four rounds, and reload);
- shooters engaging the targets from multiple distances, starting from close or distant proximity to the target and gradually increasing or decreasing distance from the target (i.e., 10, 15, or 25 yards or beyond for buckshot and out to 50 or 100 yards for slugs, or 100, 50, 25, 15, and 10 yards);
- shooters engaging the targets from the standing and kneeling positions; and
- shooters engaging the targets from the ready/carry positions (i.e., weapon in shooter's hands with no sight alignment attained).

Reduced-light (night-fire) shotgun qualification courses should be developed that include some of the elements listed above in the daylight shotgun qualification course. Night-fire qualifications shall apply conditions that reasonably approximate the expected loss-of-lighting conditions at the site. Qualification courses should include a predetermined amount of ammunition, type of target(s), and scoring system to be used (i.e., eight rounds of 00 buckshot fired at a B-27-type target with the maximum score of 72 points).

A heightened level of safety should be maintained during reduced-light training. Familiarization in reduced-light training should be provided to shooters before qualification courses. Substitute commercially available light-reducing equipment (i.e., welders goggles or dark-light simulator eye wear) should not be used when conducting reduced-light training. Substitute equipment should not be used when conducting reduced-light qualifications in accordance with the licensee's approved training and qualification plan.

Licensees should consider providing luminous night sights for all their assigned shotguns. Night sights are effective for reduced-light conditions. When using such devices, shooters typically will focus on the proper firearms fundamentals and will achieve a higher degree of accuracy. However, shooters should also be aware that the lumination of night sights may allow an adversary to identify the shooter's location.

Control of range activities during reduced lighting is critical for the overall safety of all personnel. Firearms instructors should consider policies and procedures for using lighting devices to identify themselves, as well as shooters, during reduced-light training. Flashlights with red filters or chemical sticks could be used to provide the identification needed. Firearms instructors should consider the preservation of all personnel's night vision when using these lighting devices. Firearms instructors should follow the standard ratio of one instructor for every three shooters during reduced-light range activities.

Security staff of licensees that approve the use of flashlights for range activities should become familiar with the equipment. Licensees should develop specific reduced-light courses of fire that include shooting both with and without flashlights. Classroom training and dry-firing exercises should be conducted with the flashlights before live-fire activities.

Licensee light-level standards and procedures should be used during periods of reduced-light range activities and are site specific. Licensee procedures would normally address these requirements.

7.6.6 Enhanced Weapons

In accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph F.5.d, armed members of the security organization who are assigned duties and responsibilities involving the use of any weapon or weapons not described above shall qualify in accordance with applicable standards and scores established by a Federal, State, or local law enforcement course or an equivalent nationally recognized course for these weapons. Licensees shall develop and implement enhanced weapons qualification

courses for daylight and night fire to evaluate a shooter's marksmanship and firearm manipulation skills under daylight and reduced-light conditions. The minimum qualifying score for each course shall be 80 percent.

7.6.7 Tactical Weapons Qualification Course

In accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph F.3, a tactical qualification course shall be developed to assess the shooter's physical fitness and the ability to perform realistic and simulated aspects of the site's protective strategy with all contingency equipment. The tactical qualification course shall be designed to exercise and evaluate a shooter's ability to perform required weapons operator skills/marksmanship fundamentals while experiencing stress from performing nonroutine tasks, such as tactically moving, pivoting, engaging multiple targets, recovering from simulated weapons malfunctions (using dummy rounds), using available cover, or firing after donning a gas mask. Each site may determine its own specific tactical requirements (e.g., barrier/fence, specific no-shoot areas/devices) and incorporate them into the course. Since range facilities differ from site to site, the courses may be modified to accommodate the safety requirements for each range.

The tactical qualification course emphasizes weapons operator and marksmanship skills relating to assessment and identification, tactical engagement and movement, and advantageous use of environment and resources while facing multiple threats (targets). The course should be designed to replicate licensee defensive positions (e.g., size of shooting ports, elevations), distance or yardage of shots, and potential site situations.

All courses must ensure that the required elements as outlined in the NRC-approved training and qualification plans are accomplished and that an overall qualification score of 80 percent is achieved. The score for the tactical qualification course is based on the standards of weapons qualifications in accordance with Appendix B to 10 CFR Part 73 and nationally recognized scores for qualification courses of fire. The licensee's protective strategy shall be used to develop the course of fire. The course shall reflect specific implementation aspects that the licensee identifies in its contingency plan and implementing procedures, which must be supported by the licensee training and qualification plan and implementing procedures.

The tactical qualifications course should be conducted in accordance with all firearms safety instructions and such site-specific safety instructions as applicable. Limitations on range use must be observed, and all tactical shooting courses should be conducted with the ratio of one instructor to one shooter. For all tactical firing courses, the firearms should be loaded in the standard duty configuration and carried in accordance with the site security plans and implementing procedures.

Appendix B to 10 CFR Part 73 states in part that the qualifying score for a revolver or semiautomatic handgun is an accumulated total of 70 percent of the maximum obtainable score and the qualifying score for a semiautomatic rifle is an accumulated total of 80 percent of the maximum obtainable score. Both scores outlined in Appendix B to 10 CFR Part 73 are consistent with nationally recognized scores for qualification courses. Because the annual tactical qualification course includes the combined use of the handgun and shoulder-fired weapons employed in a contingency event at the site, each shooter must achieve an overall qualifying score that accounts for all weapons systems used. The scoring for this course should incorporate proficiency criteria from both weapons operations/marksmanship and physical/tactical ability.

Qualification standards should be based on the percentage derived from the number of targets successfully engaged and the successful completion of the course within the specified time interval. To determine the qualifying score, the licensee should establish a basis for the maximum achievable score/percentage for the weapons operation/marksmanship aspect of the course (i.e., 100/100 percent). A point value should be assigned to each target in accordance with the total number of targets within the course that equals the maximum achievable score/percentage (i.e., 25 targets at four points each equals 100/100 percent). The licensee should then establish a basis for the maximum allowable time to successfully complete the course. For this aspect of the qualification criteria, the licensee should use known timelines consistent with the implementation of its protective strategy for movement, tactics, and

the negotiation of obstacles within the course. The standard should also include reasonable consideration for the time duration of firing engagements (target exposure time), range equipment operations (delays in target system operations), and safety (any measure instituted to increase safety). To minimize inaccuracies and confusion, the standard for the maximum allowable time to successfully complete the course should not be associated with a percentage or score but should remain in the form of a time limitation. Each licensee shall document its methodology for determining that its tactical qualification course demonstrates acceptable proficiency. The expectation for the qualification criteria of this course shall not be less than the minimum total of 80 percent and a time that is less than the maximum allowable time limit as identified in the licensee training and qualification plan and implementing procedures. A qualifying score of less than 80 percent or a course completion time in excess of the maximum allowable time limit as identified in the licensee training and qualification plan may constitute a failure to provide high assurance that the site protective strategy is not inimical to the common defense and security and does not constitute an unreasonable risk to the public health and safety.

7.6.7.1 Course of Fire Requirements for the Tactical Qualification Course

To satisfy the requirements of Appendix B to 10 CFR Part 73, Section VI, paragraph F.5, as a minimum, the course of fire shall include the following:

- the combined use of handguns and shoulder-fired weapons employed during a contingency event according to the site's protective strategy;
- firing from a reasonable and representative facsimile of licensee defensive positions, elevations, and distances;
- appropriate levels of stress and physical demands (e.g., engaging targets while on the move);
- proper cover and concealment tactics while engaging multiple targets, moving targets, and decision making targets;
- the ability to transition from one type of firearm to another;
- the ability to recover from simulated weapon malfunctions (e.g., dummy rounds);
- adherence to the safe handling of firearms during simulated courses of fire;
- firing at multiple targets, loading, and reloading while wearing a protective mask;
- non-dominant/support hand shooting;
- use of the minimum quantity of combined handgun and shoulder-fired weapon ammunition necessary to demonstrate the ability to effectively implement the licensee's protective strategy

Regarding the last requirement listed above, the amount of ammunition distributed among all weapons and fired during the course shall be consistent with the licensee's protective strategy (i.e., the standard ammunition load carried by the armed responder) as identified in the licensee's contingency plan and implementing procedures. If the protective strategy identifies ammunition resupply points, the tactical course of fire may include them as well.

Additionally, in accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph E.1.b,a certified firearms instructor shall conduct all firearms training. The certification shall be attained from a nationally or State-recognized entity and must specify the weapon type(s) for which the instructor is qualified to teach. The licensee's firearms instructors shall be recertified at intervals not exceeding 3 years.

When developing the tactical qualification course, licensees should rely on the experience and expertise of trained and qualified firearms instructors. Certified instructors should use available resource material (internal and external), including firearms manuals and best practices benchmarked throughout the industry. A list of additional resources that may assist a licensee in the development of the tactical course of fire appears at the end of this guidance document. The objectives described below should be considered when developing the tactical qualification course.

A tactical course of fire should challenge the tactical knowledge, skill, and ability of the shooter at various stages of practical demonstration when performing simulated but realistic aspects of the site's protective strategy. The course should reflect specific implementation aspects that the licensee identifies in its contingency plan and implementing procedures and that the licensee training and qualification plan

and implementing procedures must support. For example, in its contingency response plan and implementing procedures, a licensee identifies towers that are located at the perimeter for the interdiction of adversaries approaching the protected area (in accordance with the licensee's use of force continuum). The licensee should consider the development of a stage of fire within its tactical course of fire that addresses this aspect. The licensee's implementing procedures for training would also have to address this aspect, including existing documentation demonstrating that the shooter received (at a minimum) familiarization training in this area.

The course of fire should include specific pieces of equipment staged throughout the range that are designed to provide the shooter with simulated but realistic aspects of the site's protective strategy. The equipment should include barricades to simulate walls or sides of buildings found inside the protected area or actual or replicated pieces of plant equipment (i.e., piping or pumps that have been retired or replaced and plant stairwells) staged throughout the range for added realism. The range design should include replicas or reasonable facsimiles of towers and defensive positions found inside the protected area. The licensee should assess the impact of the changes to the range configuration for shooter safety and overall range safety.

7.6.7.2 Course of Fire Stages for the Tactical Qualification Course

As with any live firearms training or qualification evolutions, certain aspects of an actual firearms engagement cannot be demonstrated as they might actually occur because of safety concerns. It is also understood that a trained and qualified firearms instructor may have to specifically control ceratin aspects of a firearms qualification course in order to cause a shooter to demonstrate all required skills as well as to ensure safety. Actions that address safety and the complete demonstration of all required skills must be considered and implemented in the development and conduct of a tactical qualification course. Licensees should attempt to minimize instructor controls and interaction during the conduct of tactical qualification courses to ensure the shooter possesses the ability to operate in a contingency environment while demonstrating all weapons operator skills identified in the requirements.

Stages within the course of fire may require the shooter to have all contingency equipment donned (or available, commensurate with the licensee's protective strategy). The course of fire should include the elements described below.

Objective: Combined use of handguns and shoulder-fired weapons employed during a contingency event according to the site's protective strategy.

Guidance: The shooter should carry or have available all handguns and shoulder-fired weapons, consistent with the site's protective strategy, for the entire course of fire. Weapons and equipment carried and/or readily available should be consistent with the licensee's protective strategy. The shooter may use any weapon at any stage of the course to effectively engage the required number of targets. If the licensee employs more than one specific type of shoulder-fired weapon in accordance with its contingency plan, protective strategy, and implementing procedures (i.e., M-4 and AR-15 or M-4 and shotgun), then the tactical course of fire should include the additional shoulder-fired weapons. All weapons included in the tactical course of fire should be used in the course consistent with how they are employed and identified in the licensee's contingency plan, protective strategy, and implementing procedures (e.g., AR-15 in fixed posts, M-4 for armed responders). Sighting system configuration and use in the tactical course of fire should be consistent with that identified by the licensee as the primary sighting system for the particular weapon system, as employed and identified in the licensee's contingency plan, protective strategy, and implementing procedures. If other sighting systems are used as secondary sighting systems (e.g., iron sights) or for specific applications (e.g., thermal scopes), training and qualification using those systems will be conducted during the licensee's familiarization fire training and marksmanship qualification courses. The use of sighting systems other than that identified by the licensee as the primary sighting system for the specific weapon during the conduct of the tactical qualification course is left to the discretion of the licensee. The shooter would not have to carry more than one shoulder-fired weapon at any one time unless required by the site protective strategy. Additional shoulder-fired weapons could be located at other stages of the course of fire, and the shooter could transition to those weapon(s) in applicable situations, at a time specified by the certified firearms

instructor or at a predetermined time during the course of fire.

Range designs and range safety should be taken into consideration to determine the use of specific contingency or enhanced equipment or weapons (e.g., considering yard line or distance of target engagement and backstop configuration for the safe use of each weapon) during each stage within the course of fire.

Objective: Firing from a reasonable and representative facsimile of licensee defensive positions, elevations, and distances.

Guidance: The licensee's tactical course of fire should have reasonable facsimiles of licensee defensive positions, elevations, and distances and include those facsimiles as a stage or stages in the course of fire. The shooter should negotiate the course and engage the required targets, in order to provide reasonable assurance that the shooter can effectively execute his or her duties as required by the protective strategy. The facsimile of the defensive positions should be constructed out of alternate materials and built with the objective of giving the shooter a similar perspective of elevations, fields of fire, and distances that exist in the actual defensive positions used for the protective strategy inside the protected area. The elevations and distances of the defensive position facsimiles do not have to exactly match what exists in the protected area. The design of the facsimiles should include consideration of actual protected area shooting positions, shooting port size, and approximate fields of fire and reasonably replicate the height, distance, and angle on a representative scale to produce similar effects. This can be accomplished using firearms training resource manuals and documents for elevated position design and angle calculations. Reduced size targets can be used to simulate distance and distant target acquisition for the shooter.

If the licensee's protective strategy requires the armed responder to engage moving targets from ground defensive positions and elevated defensive positions to defend the facility, then the tactical course of fire should include stages for moving target engagement both from ground and elevated positions.

Each licensee should be able to articulate in writing its methodology for replicating and simulating its actual defensive positions used in the training conducted at the firing range for the tactical qualification course.

Objective: Appropriate levels of stress and physical demands (e.g., engaging targets while on the move).

Guidance: The course of fire should include levels of stress and physical demands representative of the site's protective strategy. Physical stress inducers such as running can be used to mimic the actual physical stress induced on a responder during a contingency event in the protected area. If running is used to induce stress then the specific distance associated with the most demanding timeline should be used. This may be accomplished by actually running the predetermined distance or running in place for a specific period of time before negotiating the course or engaging targets. Mental stress inducers (e.g., having the shooter simulate communication with the CAS or demonstrating tactical reloads) can add realism and mental stress during the course of fire and should be included. Additionally, physical and mental stress can be simulated by having the shooter engage targets while on the move between positions of cover. This demonstration or stage would require the shooter to implement reactionary measures such as engaging the target in the open while advancing to cover, or obtaining cover rapidly and returning fire. The course of fire should also include other physical demands (i.e., moving from multiple positions of cover, out of the prone and kneeling positions, or up and down elevated positions or stairwells) that reflect the plant environment and the implementation of the licensee's protective strategy.

Objective: Proper cover and concealment tactics while engaging multiple targets, moving targets, and decision making targets.

Guidance: The shooter should be able to recognize and then use proper techniques for cover and concealment to successfully complete the course of fire. The shooter should demonstrate appropriate methods of approaching, moving from, and using cover and concealment while engaging multiple targets, moving targets, and situational or decision making targets (i.e., threat vs. nonthreat related). Although the determination of the proper application of this aspect is subjective, licensees should consider some

method of accountability for improper application that may negatively affect the shooter's qualification score.

Objective: The ability to transition from one type of firearm to another.

Guidance: The course of fire should enable the shooter to demonstrate the ability to safely transition from one type of weapon to another during the course of fire (e.g., transition from rifle to handgun). The actual weapons transition should take place without the assistance or direction of the certified firearms instructor. However, the certified firearms instructor should be able to react to safety concerns or unsafe conditions when warranted during the course of fire. A common practice to achieve adequate safety controls for this type of firearms drill is to have an instructor/safety officer accompany each shooter through the course on a one-on-one basis. Safety officers may be other qualified and experienced armed security officers, security supervisors, or other security staff. Acceptable methods for this stage of fire include a built-in weapon malfunction scenario during the course or an instructor-induced weapon malfunction at a certain stage, which would require the shooter to transition to another firearm. Audible commands such as "Gun Down" or "Malfunction" are not recommended to cause a simulated weapon malfunction as they are not consistent with the physical stimuli experienced during an actual weapon stoppage or malfunction. The use of dummy rounds provides the exact replication of a weapons stoppage or malfunction through the physical stimuli associated with the event. Recreating this event in an exact, realistic manner develops the sense of recognition and reactionary response to actual weapons stoppages or malfunctions. The weapon stoppage or malfunction can be accomplished by causing the shooter to perform a retention or tactical reload with a magazine possessing one, two, or three live rounds at the top followed by a dummy round that would cause the malfunction. Either the instructor can provide the magazine to the shooter at the position of cover just before the stage, or the magazine may be color coded and carried by the officer with predesignated instructions to use it at the proper stage in the course. These methods ensure that the malfunction will occur at the proper stage of the course. Alternatively, all of the shooters' magazines could be loaded to have a dummy round in either the second, third, or fourth position (each magazine different) to ensure that a malfunction occurs on each magazine at the desired stage without the officer's absolute knowledge. However, if the shooter performed an immediate action instead of a weapons transition and continued with the primary weapon system, the stage of fire for the weapons transition requirement would be lost. All reloads for this stage of fire should be performed at a position of cover before negotiating this particular part of the course.

Objective: The ability to recover from simulated weapon malfunctions (e.g., dummy rounds).

Guidance: The course of fire should enable the shooter to demonstrate the ability to perform the appropriate immediate action for stoppages or malfunctions occurring with each weapon type used during the course of fire. Recovery also includes the shooter's ability to reacquire the target after the weapon malfunction is cleared or when the shooter transitions to another weapon. This should be accomplished through the use of dummy rounds that are preloaded in the ammunition magazines before the start of the course. A minimum of one dummy round should be loaded in each magazine before the beginning of the course and should be staggered to minimize predictability.

Objective: Adherence to the safe handling of firearms during simulated courses of fire.

Guidance: Throughout the various stages of the course of fire, the shooter should demonstrate the ability to handle each weapon type in a safe manner. This includes consideration for muzzle control; safe movement with loaded, charged, and drawn weapons; trigger finger placement; and properly clearing and restoring all weapons to a safe condition in accordance with licensee range procedures. A demonstrated disregard for the safe handling of firearms and range safety should cause the instructor/safety officer to stop the course, provide the officer remedial training on the safe handling of firearms, and cause the officer to perform the course again in its entirety.

Objective: Firing at multiple targets, loading, and reloading while wearing a protective mask.

Guidance: The course of fire should include the demonstrated ability to use a field protective (gas) mask in accordance with the site protective strategy. While wearing the gas mask, the shooter should engage a

minimum of two targets and demonstrate a reload. For example, a licensee tactical qualification course may require the shooter to don his or her gas mask and fire at multiple targets while loading and reloading with the contingency weapon. This same tactical qualification course does not have to include the use of the gas mask with the handgun; however, the use of a gas mask with the handgun should be demonstrated in another area of the training program (e.g., firearms familiarization). The shooter's use of the gas mask can be initiated by the certified firearms instructor (giving the audible warning of "Gas, Gas, Gas") or at a predetermined stage within the course through the deployment of smoke in the immediate vicinity of the shooter. The mask must be deployed from its staging area or pouch as required by the site protective strategy and within an acceptable timeline identified for the specific mask type and in accordance with manufacturer's specifications and the licensee's training and qualification plan and implementing procedures. During this stage of fire, it is important to ensure that officers do not break the seal of the mask to accommodate stock/cheek weld when firing shoulder-fired weapons.

Objective: Nondominant/Support Hand shooting.

Guidance: During any stage of fire within the course, the shooter should demonstrate the use of the support/nondominant hand to fire. The purpose of this element is for the shooter to gain familiarity with shooting and handling the assigned weapon(s), including reloading and target acquisition, with the support/nondominant hand when aspects of the site's protective strategy or an injury cause the shooter to use this technique to engage a threat. The requirement for support/nondominant hand fire may be met by causing the shooter to engage targets with either shoulder-fired weapon(s), the handgun, or both using the support/nondominant hand technique. Licensees that develop tactical qualification courses that require support/nondominant hand fire using only one of the weapons systems carried by their response force members should ensure that this technique is demonstrated for the remaining weapons systems in another area of their training programs (e.g., firearms familiarization).

Objective: Use of the minimum quantity of combined handgun and shoulder-fired weapon ammunition necessary to demonstrate the ability to effectively implement the licensee's protective strategy.

Guidance: The amount of ammunition distributed among all weapons and fired during the course shall be consistent with the licensee protective strategy. The shooter should carry the minimum amount of duty ammunition required by the protective strategy at the site during the conduct of the tactical qualification course. The standard ammunition load identified in the licensee's contingency plan, protective strategy, and implementing procedures for armed responders should be carried during the tactical course of fire. The total number of rounds includes dummy rounds.

7.6.7.3 General Implementation Guidance

Typically, a tactical qualification course will be a timed evolution for the shooter and consist of a combination of all the elements required in the licensee's contingency response plan, protective strategy, and implementing procedures, which shall be consistent with the licensee's training and qualification plan. The elements should be presented in a continuous evolution (i.e., elements should not be broken out into discrete training evolutions or other courses of fire), with various stages of fire that comprise a single course. All elements and stages of the tactical qualification course should have consideration for range safety. The amount of time given to a shooter for completion of the tactical qualification course should be consistent with response timelines respective to the protective strategy and include consideration for the time to complete each stage of the course and range safely. Each licensee should document and be able to articulate its methodology for determining an acceptable time interval for safe and successful completion of the course of fire.

If a firing range malfunction or a weapon or equipment malfunction beyond the shooter's ability to safely resolve hinders the shooter's ability to complete the tactical qualification course, the shooter should be allowed to continue after resolution of the problem (if feasible) or repeat the course. If such incidents occur, range safety should always be addressed and ensured first (clear and unload the weapon, practice muzzle discipline), then the specific problem. The shooter's time should also be stopped and the shooter held in place while the issue is resolved. Once the issue has been resolved and the firing range is

considered clear, the instructor/safety officer should cause the shooter to load and ready the weapons, then continue the course (along with the shooter's time) when directed.

7.7 Weapons Requalifications

In accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph F.1.c, annual requirements shall be scheduled at a nominal 12-month periodicity. Annual requirements may be completed up to 3 months before or 3 months after the scheduled date. However, the next annual training shall be scheduled 12 months from the previously scheduled date rather than the date the training was actually completed.

7.8 Short-Cycle Requalification

Licensees shall schedule the requalification of annual requirements at a nominal 12-month periodicity. The actual scheduled date for the requalification of an annual requirement can be changed by conducting training earlier than the originally scheduled date. The next scheduled date for requalification, from that point forward, shall not exceed the specified periodicity.

When applying this short-cycle provision to the training schedule for their annual requirements, licensees shall ensure that their schedule for weapons range activities continues to meet the nominal 4-month periodicity as identified in Appendix B to 10 CFR Part 73, Section VI, paragraph E.1.f.

8. Weapons, Personal Equipment, and Maintenance

To satisfy the requirement in Section VI, paragraph G.2.a, of Appendix B to 10 CFR Part 73, the licensee shall ensure that each individual is equipped or has ready access to all personal equipment or devices required for the effective implementation of the Commission-approved security plans, the licensee's protective strategy, and implementing procedures. The security supervisor, or another individual designated by the licensee, should conduct daily equipment inspections to ensure proper care and serviceability of the equipment.

8.1 Weapons

To satisfy the requirement in Appendix B to 10 CFR Part 73, Section VI, paragraphs G.1.a and G.2.b, armed response personnel shall either be equipped with or have available the following security equipment appropriate to the individual's assigned contingency security-related tasks or job duties as described in the licensee's physical security and contingency plans:

- semiautomatic rifles and ammunition with the following nominal minimum specifications:
  - .223 caliber,
  - muzzle velocity of 1980 feet per second,
  - muzzle energy of 955 foot-pounds,
  - magazine or clip load of 10 rounds,
  - magazine reload of less than 10 seconds, and
  - operable in any environment in which it will be used.
- 12-gauge shotguns with the following capabilities:
  - 4-round pump or semiautomatic,
  - operable in any environment in which it will be used, and
  - full or modified choke.
- semiautomatic pistols or revolvers and ammunition with the following nominal minimum specifications:
  - .354 caliber,

- muzzle energy of 250 foot-pounds,
- full magazine or cylinder reload capability of less than 6 seconds,
- muzzle velocity of 850 feet per second,
- full cylinder or magazine capacity of 6 rounds, and
- operable in any environment in which it will be used.

- ammunition:

  - for each assigned weapon as appropriate, consideration of the following minimum requirements of ammunition:

    - two fully loaded licensee-issued handgun magazines per handgun or three fully loaded revolver speed-loaders (minimum of 18 rounds),
    - 100 rounds per semiautomatic rifle, and
    - three basic magazine loads of 00 gauge or slug rounds per shotgun (e.g., a 6-round capacity magazine would have a total of 18 shotgun rounds).

The ammunition available on site should be twice the amount stated above for each weapon. Ammunition should be readily available for armed personnel to resupply if needed during a contingency event.

8.2 Personal Equipment

As stated in Appendix B to 10 CFR Part 73, Section VI, paragraph G.2.a, the licensee shall ensure that each individual is equipped or has ready access to all personal equipment or devices required for the effective implementation of the NRC-approved security plans, the licensee's protective strategy, and implementing procedures. Licensees shall provide armed security personnel, at a minimum, with the following:

a. Gas Mask

Licensees that issue respiratory protection equipment for the purpose of complying with Commission-approved security plans should establish a respiratory protection program in accordance with 29 CFR 1910.134, "Respiratory Protection."

Licensees should develop and implement a written respiratory protection program that outlines specific procedures and elements required for respirator use. A suitably trained program administrator should manage the program. Licensee respiratory protection programs should include the following program elements:

- proper selection of respirators,
- medical evaluation and fit testing,
- care and maintenance,
- training program, and
- program evaluation.

Properly selected and worn respirators are an effective method of protection against designated hazards. Respirators that are improperly used or that are not in proper condition can become a hazard to the user.

Licensees should also consider limitations appropriate to the type and mode of use. When selecting respiratory devices, the licensee should provide for vision correction equipment (i.e., prescription glasses, goggles, or inserts) for each individual assigned respiratory protection. The individual should use this equipment in such a way as to not interfere with the proper operation of the respirator.

Licensees should comply with all instructions provided by the manufacturer on limitations, care, and maintenance of the respirators. Licensees should issue respirators that are tested and certified by the

National Institute for Occupational Safety and Health (NIOSH) to protect against contaminants listed in the DBT. When using equipment that NIOSH has not tested or certified, or for which there is no schedule for testing or certification, licensees should ensure that the material and performance characteristics of the equipment are capable of providing the proposed degree of protection given the anticipated conditions of use. This should be demonstrated either by licensee testing or on the basis of reliable test information. Licensees should evaluate additional site-specific chemicals or materials (e.g., ammonia, caustic soda, or acid) that, if released or damaged in a design-basis attack or explosion, could reduce or incapacitate the security personnel from performing assigned duties in a contingency event.

b. Body Armor

The National Institute of Justice (NIJ) certifies body armor levels. Based on extensive laboratory tests, body armor is designated into one of six levels (I, IIA, II, IIIA, III, and IV). Level I body armor offers the lowest level of protection, and Level IV offers the highest. The type of weaponry a particular type of body armor can guard against is often used to determine its level. The lowest level body armor can only be relied on to protect against bullets with relatively low energy, which tend to have less force on impact. Some higher level body armor can protect against higher energy bullets (i.e., 44 magnum and 357 magnum). Levels I through IIIA are soft and can be concealed. Levels III and IV use hard or semi-rigid plates to defeat high-energy rifle rounds. Licensees that issue body armor equipment for the purpose of complying with Commission-approved security plans shall consider a level of protection commensurate with the DBT.

c. Ammunition/Equipment Belt

Ammunition used for live-fire training and qualification, blank ammunition for Engagement Simulation System training, and ammunition for other nonlethal training (e.g., die-marking-cartridges) should be of suitable quality for the intended use. Reloaded, reprocessed, or military surplus ammunition should not be used. Licensees should conduct quality assurance verifications of blank or live ammunition to identify instances of ammunition that does not meet manufacturer specifications.

Ammunition may also have an adverse impact on weapon performance. The licensee should verify that ammunition is properly stored and rotated. Ammunition stored in a high-temperature area, such as a turbine building, may degrade over time. In addition, ammunition handled on a daily basis may also degrade. Therefore, licensees should factor the rotation of ammunition in the overall assessment of weapon functionality and reliability.

Many types of ammunition pouches, belts, and tactical vests are available to licensees. Multiple individuals should field test all equipment issued to security officers to ensure its practicality and durability. All individuals shall be trained and qualified in the use of the equipment before its issuance. Individuals shall configure the issued equipment during range activities as if they are working assigned security duties.

d. Two-Way Radio

The licensee should establish and maintain continuous communication capability with onsite and offsite resources to ensure effective command and control during both normal and emergency situations. Each on-duty security officer, watch person, vehicle escort, and armed response force member shall be capable of maintaining continuous communication with an individual in each alarm station.

Each two-way radio should have a minimum of two channels for security operations, one for operating and one for emergency. Alternate means of communication (e.g., plant paging system, telephone) should be provided for use in areas of the facility where radio communication is not possible because of radio transmission interference or in situations when it is not advisable.

"Dead spots" created by manmade or natural objects can cause transmission interference. Radio transmissions will be reflected off any large object located between the transmitter and the receiver or

repeater. This commonly occurs when radio transmission is attempted from inside buildings with thick, reinforced concrete walls or at subterranean levels. Cellular telephones are typically used in these instances. Hard-wired telephones or intercom systems can also be used, although they create their own set of tactical disadvantages. In many cases, however, dead spots can be eliminated to a degree by installing radio repeaters in appropriate locations.

Radio transmissions have the potential to create problems with solid-state electrical components. The impact of radio-frequency interference (RFI) on electrical components of nuclear power plants should be evaluated to determine where RFI should be avoided. Areas where RFI has been determined to have a negative impact on electrical components should be identified as such to prevent potential mishaps. (The licensee's safety/security interface program should address shielding of vital electrical components.) Radio transmissions should be avoided when in proximity of any known or suspected explosive device. Explosive initiators are often designed to use RFI to actuate the explosive train. Cellular and cordless telephones also produce RFI, and their use should be avoided under similar circumstances.

8.2.1 Additional Equipment

On the basis of its protective strategy and the specific duties and responsibilities assigned to each individual, the licensee should consider providing the equipment described below.

a. Flashlights and Batteries

Licensees should consider operable flashlights with sufficient lumination a valuable accessory for armed responders. When choosing a flashlight, licensees should consider that the flashlight should be dependable, strong, and bright enough to provide sufficient illumination during a contingency event. Armed responders should be trained and qualified to operate the flashlight while conducting firearms activities. Spare batteries should be available, and a battery replacement schedule should be created.

b. Nonlethal Weapons

Licensees should provide the necessary training for each nonlethal weapon (e.g., baton, Taser, mace, or oleoresin capsicum (O.C.) spray) before issuance. Nonlethal weapons instructors should be certified by a nationally (e.g., National Rifle Association, Federal Bureau of Investigation, military) or State (e.g., Police Officer Standards and Training) recognized entity. This certification should specify the nonlethal weapon type(s) for which the instructor is qualified to teach. The licensee's instructors should be recertified in accordance with the standards recognized by a national or State entity at intervals not to
exceed 3 years. The licensee should provide documentation of training conducted in accordance with the critical-task matrix of the Commission-approved plans.

c. Handcuffs

Handcuffing is a common method of restraint within the law enforcement community and is used to inhibit an individual's upper body mobility, thereby preventing individuals from using their arms to cause harm to themselves or another individual. Handcuffing may fall into more than one level of the force continuum, depending on the situation and how the techniques are applied.

Compliance handcuffing techniques are normally associated with the restraint of a compliant individual who is receptive and cooperative when given verbal commands. Caution should always be exercised when applying compliance handcuffing techniques because a compliant individual may become combative. Because of the lack of physical force associated with compliance handcuffing, it may be associated with soft physical techniques within the force continuum.

Noncompliant handcuffing is the act of forceful physical restraint against the will of an individual who has demonstrated combative characteristics by actively attempting to escape, evade, or engage other individuals in a harmful or offensive manner. Extreme caution should be used before and

during the application of noncompliant handcuffing techniques to ensure the safety of all involved. Because of the physical force associated with noncompliant handcuffing (i.e., defensive tactics such as blows, strikes, take downs), it is normally associated with hard physical techniques within the force continuum.

It is recommended that licensees include both compliant and noncompliant handcuffing techniques and associated defensive tactics in their training programs to ensure the safety of the security force and other plant personnel. Licensees should also consider including in their training programs the conduct of situational training (live scenarios/exercises) that includes the application of the force continuum and the measures within the force continuum (e.g., O.C. spray, defensive tactics, baton, handcuffing). Licensees should provide training by a certified instructor to personnel before issuing of defensive equipment.

d. Security Enhancements (Other Equipment)

Licensees should consider the use of other equipment to augment the equipment they possess and to enhance the capabilities of their physical protection programs. Equipment such as binoculars, night vision aids, illumination devices (hand-fired flares, remote-operated spotlights), and remote-operated duress alarms may be used to enhance detection, assessment, and identification capabilities. Other enhancements such as the use of nonlethal gas (incapacitating agents) through various delivery methods may be employed to delay the approach of adversaries to vital areas and potential targets within the protected area.

8.3 Maintenance

To satisfy the requirements in 10 CFR 73.55(o) and Appendix B to 10 CFR Part 73, Section VI, paragraph G.3, the licensee shall develop a maintenance and accountability program for all licensee-assigned firearms to ensure that the firearms function as intended when needed and as designed by the manufacturer. Licensees should consider implementing the same program for their exercise simulation system equipment (i.e., MILES weapons). No modifications should be made to firearms, firearm accessories (magazines, sights, holsters), or contingency equipment that is not approved by the firearm or equipment manufacturer. A qualified armorer or gunsmith shall perform any modifications to firearms.

8.3.1 Firearms Maintenance Program

At a minimum, the licensee should implement the following maintenance program:

a. Semiannual Test Firing for Accuracy and Functionality

In accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph G.3.a, all firearms, whether licensee- or contractor-owned, shall be test fired on a semiannual basis. A qualified armorer should conduct or observe the test fire to ensure accuracy and reliability. The test firing should be conducted at an interval not to exceed 6 months. The semiannual test fire should include the discharge of 10 or more rounds, at a minimum, to determine the functionality, reliability, and accuracy of each weapon.

The licensee's firearms maintenance procedure should detail this provision. The procedure should also detail a methodology for documenting test-firing results.

This provision can be satisfied during scheduled range activities. However, weapons that are unassigned and those that have not been cycled through the range activities within a 6-month period shall be test fired and the results documented, in accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph G.3.a.

Seasonal conditions should also be factored into the assessment. The licensee should determine whether the weapons are test fired at both the high and low end of a temperature range. Weapons may function flawlessly during the milder temperatures of spring and fall, but they may show increased

malfunctions during the extreme temperatures of summer and winter.

b. Firearms Maintenance and Cleaning Schedule

In accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph G.3.a, the licensee shall develop firearms maintenance procedures and, at a minimum, should document the requirements set forth by the firearms manufacturer's recommendations for proper maintenance. Procedures should outline a regular schedule for inspections, types of preventive maintenance actions, the individual who completed the inspection, the date of the inspection, whether repair is needed, and what actions will take place before placing the firearm into service (i.e., test fire, function check). If maintenance is performed, a new test fire should be completed.

In accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph G.3.a, cleaning procedures shall be established for all licensee- or contractor-owned firearms to ensure that they are operational and can implement the site's protective strategy. Firearms should be cleaned in accordance with the manufacturer's recommendations. A monthly cleaning schedule should be implemented to ensure that all licensee firearms are maintained in a reliable operating condition. All firearms should be cleaned immediately after firing. Firearms that are stored or carried in a high humidity environment or firearms that are exposed to the weather elements (i.e., rain, snow, heavy fog) should be cleaned and lightly lubricated to eliminate the possibility of rusting. All firearms should be unloaded before cleaning. Unloading should be performed in an authorized area. Firearms cleaning procedures should include, but are not limited to, the following activities:

- removing magazine or ammunition source (unloading of firearm);
- inspecting the magazine well area of the weapon;
- locking open the action of the weapon (lock slide to rear or bolt to rear) and opening the action mechanism to the rear);
- inspecting the chamber to ensure that no ammunition is present;
- disassembling the firearm in accordance with the manufacturer's recommendations for standard operator maintenance;
- using solvents, oils, and lubricants that are recommended by the manufacturer(s);
- using cleaning tools that match the caliber of the firearm to avoid damage to the surface areas, barrel, and muzzle areas;
- cleaning all areas of the firearm(s) with a cloth and/or brush treated with a small amount of cleaning solvent in accordance with the manufacturer's recommendations;
- removing all traces of powder residue and fouling from the barrel of the firearm(s);
- lubricating the firearm according to the manufacturer's specifications;
- assembling the firearm in accordance with the manufacturer's recommendations; and
- conducting a function check for the operability of the assembled firearms.

Once cleaned, the exterior of the firearm(s) should be wiped with an oily rag to remove surface fingerprints. The acid content in fingerprints can result in surface rusting. Spray-type oil solutions (e.g., mixtures that are both penetrating and lubricating in design) should never be applied to loaded firearms because of the potential for the oil to penetrate the primers and cartridges, which may make them incapable of discharging.

c. Documentation

In accordance with the requirements in Appendix B to 10 CFR Part 73, Section VI, paragraph H, licensees shall maintain and retain documentation of firearms maintenance in a manner similar to other security equipment that is relied upon for effective implementation of the licensee's protective strategy. The documentation should be detailed enough to determine the nature of the malfunction or inoperable condition, when it occurred, when the weapon was taken out of service, how the problem was resolved and by whom, and when the weapon was brought back into service. The documentation should also positively identify the weapon.

Problems with ammunition and other weapon support gear should be documented in a similar

manner. This includes enhanced weapons sights, especially those that are battery powered, and night vision aids.

In accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph G.3.a, the licensee shall document and maintain firearms testing and maintenance activity in accordance with Commission-approved security plans. The licensee should maintain a record of weapons testing and maintenance for each of its firearms for at least 3 years. The licensee should consider retaining the firearms maintenance records for the life of the firearm to assist in evaluating performance and dependability of the firearm in case of programmatic problems.

d. Accountability (Weapons and Ammunition)

In accordance with Appendix B to 10 CFR Part 73, Section VI, paragraph G.3.a, the licensee shall implement a system of accountability for all firearms and ammunition. Firearms and ammunition should be stored in areas with access limited to personnel who are qualified to perform maintenance on or carry firearms. Licensees should account for all inservice and out-of-service firearms once each shift. The phrase "account for" means to provide a satisfactory record or explanation of the location or disposition of each firearm and all ammunition through visual or physical verification. Licensees should account for firearms that cannot be visually or physically accounted for because of their location (e.g., those that have been shipped off site for maintenance or other reasons) by verifying the documentation for the disposition of the firearm. Accountability for firearms that are stored in weapon safes or other tamper-proof containers, which are sealed with approved tamper-indicating devices (i.e., tamper seals), can be achieved by physically inspecting the integrity of the seal.

Licensees should account for all protective strategy ammunition once per shift. Protective strategy ammunition is the ammunition the licensee requires for the effective implementation of the site's protective strategy and could be stored in the following locations:

– on individual response/supplemental force persons' bodies (i.e., in pouches, belts, and vests);
– in pouches, belts, vests, or containers located in defensive posts or in other licensee-approved locations throughout the site; and
– in additional contingency weapons staged for use during a contingency event.

Visual or physical verification of sealed boxes, loaded magazines, or loose ammunition by licensee personnel assuming post responsibilities is acceptable for part of daily shift accountability.

The licensee should account for additional ammunition (i.e., training ammunition and blank ammunition) once every 6 months. Licensees should consider placing a portion of additional ammunition in appropriate weapon(s) magazines. Ammunition should be readily available for armed personnel to resupply if needed during a contingency event.

e. Firearm and Ammunition Storage

Licensees should consider storing weapons and ammunition in approved storage containers that prevent tampering or unauthorized possession and offer a high degree of assurance for safety and reliability. Storage containers should provide easy access for authorized person(s) to retrieve the weapons and ammunition in an expeditious manner.

The primary considerations for storage are that the weapon does not sustain any damage, particularly to its sights, and that performance is not adversely impacted. In assessing a weapons storage area, the licensee should consider the potential impact on the weapon(s) of temperature, moisture, and particles, such as dust and sand. The storage area should also prohibit unauthorized access to a weapon.

f. Armorer Certification

Section 6.1.6 of this regulatory guide discusses armorer certification.

g. Records

The licensee shall retain all reports, records, or other documentation required by Appendix B to 10 CFR Part 73 in accordance with the requirements of 10 CFR 73.55(r).

9. Audits and Reviews

The licensee should review the Commission-approved training and qualification plan in accordance with the requirements of 10 CFR 73.55(n) and Section VI, paragraph I, of Appendix B to 10 CFR Part 73.

10. Basis

The NRC used additional information in the following documents as a basis for this regulatory guide:

- Federal Law Enforcement Training Center, Firearms Training Lesson Plan, Annex F, "Special Shooting Situations";
- Federal Law Enforcement Training Center, Firearms Training Lesson Plan, Annex D, "Observational Techniques";
- Federal Law Enforcement Training Center, Firearms Training Lesson Plan, "Marksmanship Fundamentals";
- U.S. Marine Corps, MCRP 3-01B, "Pistol Marksmanship";
- U.S. Marine Corps, MCRP 3-01A, "Rifle Marksmanship";
- U.S. Department of the Army, Pamphlet 385-63, "Range Safety";
- National Rifle Association, "Law Enforcement Patrol Rifle Instructor Manual";
- National Rifle Association, "Law Enforcement Handgun/Shotgun Instructor Manual";
- Langevin Learning Services (instructor certification);
- Sigarms Armorer Certification Training Program;
- Colt Carbine and Rifle Armorer Manual;
- NRC Information Notice 89-05, "Use of Deadly Force by Guards Protecting Nuclear Power Reactors Against Radiological Sabotage," dated January 19, 1989;
- 29 CFR 1910.134, "Respiratory Protection";
- 10 CFR Part 73, "Physical Protection of Plants and Materials";
- Nuclear Energy Institute (NEI) 03-09, "Security Officer Training Program";
- NEI 03-12, "Physical Security Plan Template";
- 71130.03, "Contingency Response—FOF Testing";
- Draft SFAQ-05-17, "Scheduling of Annual Training";
- SFAQ-05-10, "Tactical Qualification Course of Fire";
- Marine Rifle Company/Platoon FMFM 6-4;
- IAEA-Tec Doc-1392, "Development of Instructors for Nuclear Power Plants Personnel Training";
- U.S. Department of the Army, FM 23-9, "Rifle Marksmanship";
- NIJ Standard 0101.04, "Ballistic Resistance of Personal Body Armor";
- physical security plan review process;
- NRC-issued security orders;
- security-related NRC generic communications (e.g., information notices and security advisories); and
- insights from conducting the NRC security baseline inspection program (industry best practices).

D. IMPLEMENTATION

The purpose of this section is to provide information to applicants and licensees regarding the NRC's plans for using this draft regulatory guide. No imposition or backfit is intended or approved in connection with its issuance except as discussed below.

The NRC has issued this draft guide to encourage public participation in its development. The NRC will consider all public comments received in development of the final guidance document. Except in those cases in which an applicant or licensee proposes or has previously established an acceptable alternative method for complying with specified portions of the NRC's regulations, the methods described in the active guide will be used in evaluating compliance with the regulations as discussed in this guide for license applications, license amendment applications, and exemption requests. The staff will also use this guide to evaluate license submittals which open the licensing basis for review.

REGULATORY ANALYSIS

The regulatory analysis prepared for the amendment of 10 CFR 73.55 examines the costs and benefits associated with implementing the rule as described in this guide. The NRC's regulatory analysis is available electronically through the Rulemaking-RuleForum on the NRC's public Web site, at http://www.nrc.gov/about-nrc/regulatory/rulemaking.html. A copy of that regulatory analysis is available for inspection and copying (for a fee) at the NRC's Public Document Room (PDR), which is located at 11555 Rockville Pike (first floor), Rockville, Maryland, 20852. The PDR mailing address is USNRC PDR, Washington, DC 20555-0001. The PDR can also be reached by telephone at (301) 415-4737 or (800) 397-4209, by fax at (301) 415-3548, and by email to PDR@nrc.gov.

BACKFIT STATEMENT

The NRC prepared a backfit analysis for proposed 10 CFR 73.55, for which this regulatory guide provides guidance. The NRC has determined that, in accordance with 10 CFR 50.109(a)(3), a substantial increase in the overall protection of the public health and safety or the common defense and security will be derived from the backfit (associated with proposed 10 CFR 73.55), and the direct and indirect costs of implementation are justified in view of this increased protection.

GLOSSARY

NOTE: This glossary only applies to the requirements of Appendix B to 10 CFR Part 73.

Action: Functional parts of a firearm that move together to place a cartridge in the chamber or otherwise ready a cartridge for firing.

Annual: Requirements that should be scheduled at a nominal 12-month periodicity. Performance may be conducted up to 3 months before or 3 months after the scheduled date. The next scheduled date is 12 months from the originally scheduled date.

Automatic: A firearm using gas pressure or force of recoil and mechanical spring action for repeatedly performing the entire firing cycle (i.e., fire, unlock, extract, eject, cock, feed, chamber, and lock) with a single press of the trigger.

Barrel: The part of the firearm, usually made from iron or steel, through which the projectile(s) pass(es) when the firearm is fired.

Barricade: A linear structure used as an obstacle or as support during the firing of a firearm.

Bolt: A metal cylinder or block that drives the cartridge into the chamber, locks the breech, and usually contains the firing pin and extractor.

Bore: The interior of the barrel, the diameter of which determines the caliber or gauge of the firearm.

Breech: The part of the firearm to the rear of the bore that accepts ammunition.

Bullet: The projectile that is expelled from a firearm when it is fired.

Caliber: The diameter of the bore of a firearm or diameter of a bullet.

Carbine: A compact, lightweight, short-barreled, rifled-bore, shoulder-fired firearm.

Cartridge: A single piece of firearm ammunition consisting of casing, powder, primer, and projectile.

Chamber: The part of the barrel's bore that holds the cartridge or a compartment in the cylinder of a revolver.

Charge: To cause the action of a firearm to move, resulting in a cartridge being placed in the chamber and readied for firing.

Clear: To ensure that a firearm has no cartridge in the chamber, cylinder, or loading mechanism and, if magazine fed, that the magazine is also removed.

Clip: A device used to hold multiple cartridges together. It is used as an aid in loading firearms magazines or cylinders. It has no moving parts and is usually not retained in the firearm.

Close-quarter Battle: Intensive combat situations at distances less than 21 feet, generally with multiple participants with firearms, other weapons, or hand-to-hand combat.

Course: An orderly progression of manipulating and shooting a firearm through specified stages and strings designed to exercise and evaluate firearm manipulation and shooting skills.

Cover: Protection from incoming projectiles.

Cylinder: The rotating chambers of a revolver that hold the cartridges.

Draw: To bring out a firearm, usually a handgun, from a holster worn on the body and direct it toward a target.

Dry Fire: To manipulate a firearm and practice firing with no live cartridges or to use inert (dummy rounds) ammunition.

Fire: To discharge a firearm.

Firearm: A weapon from which a projectile(s) is discharged by gun powder, particularly small arms such as rifles or handguns.

Force Continuum: A standard that provides individuals with guidelines as to how much force may be used against a resisting or combative subject in a given situation.

Fratricide: The employment of friendly weapons and munitions with the intent to kill the enemy or destroy his equipment, or facilities, which results in unforeseen and unintentional death or injury to friendly personnel.

Gauge: A measuring system used to determine the bore diameter of a shotgun barrel based upon the number of balls of bore diameter that can be produced from a pound of lead.

Grip: (verb) To place one or more hands on a firearm to permit effective firing.
(noun) The portion(s) of a firearm designed for holding it in order to fire.

Hammer: The part of a firearm that strikes the primer, firing pin, or percussion cap, causing the firearm to fire a projectile.

Handgun: A firearm capable of being held and fired with one hand.

Magazine: A component in some types of firearms, occasionally a detachable metal box, in which cartridges are placed. The magazine contains a spring and a follower and is part of the mechanism by which cartridges are fed into the chamber.

Muzzle: The discharge end of a barrel.

Pistol: A handgun with a chamber that is integral with the barrel.

Print: Perforation on a target caused by a projectile.

Projectile: A fired, projected object, such as a bullet or pellet, having no capacity for self-propulsion.

Quarterly: Requirements that should be scheduled at a nominal 13-week periodicity. Performance may be conducted up to 4 weeks before or 4 weeks after the scheduled date. The next scheduled date is 13 weeks from the originally scheduled date.

Revolver: A handgun with a cylinder of multiple chambers brought successively into line with the barrel and discharged by the same hammer.

Rifle: A shoulder-fired firearm with a rifled barrel designed for single-shot, semiautomatic, or full-automatic firing.

Round: Common term for a single cartridge.

Scope: An optical instrument used to aid the human eye in sighting a firearm.

Semiautomatic: A firearm using gas pressure or force of recoil and mechanical spring action to complete one cycle of the firing sequence (fire, unlock, extract, eject, cock, feed, chamber, lock) with a single pull of the trigger. The trigger must be released and re-pressed to begin a second firing sequence.

Shot: A projectile, such as a bullet or pellet, from a firearm. This term typically refers to small, round pellets fired from a shotgun.

Shotgun: A smooth-bore shoulder firearm for firing single (slug) or multiple projectiles (pellets), usually at moderate distance.

Sight Alignment: Correct positioning of the front sight within the center space of the rear sight. For firearms equipped with a scope, the scope must be aligned with the bore before shooting.

Sight Picture: Correct alignment of the target with the correctly aligned sight(s) to ensure that a projectile strikes the target at the point of aim.

Slug: An elongated projectile of bore diameter for a shotgun that may have a hollow base and spiral driving bands (rifling) on its surface.

Stage: A segment of a firearms qualification course, which may consist of one or more strings using similar techniques at a specified distance.

String: A segment of a stage, usually fired within a specified time limit.

Training Cycle: A period over which the continuing training program is conducted and evaluated.

Zero: To adjust a firearm's sighting mechanism(s) to cause a projectile to strike a target at the point of aim. This term may also refer to the number before 1.

BIBLIOGRAPHY

U.S. Nuclear Regulatory Commission Documents

Regulations[1]

U.S. Code of Federal Regulations, Title 10, *Energy,* Part 50, "Domestic Licensing of Production and Utilization Facilities."

U.S. Code of Federal Regulations, Title 10, *Energy,* Part 52, "Early Site Permits; Standard Design Certifications; and Combined Licenses for Nuclear Power Plants."

U.S. Code of Federal Regulations, Title 10, *Energy,* Part 73, "Physical Protection of Plants and Materials."

Proposed Rules[2]

"Power Reactor Security Requirements," Proposed Rule, *Federal Register*, Vol. 71, No. 207, Part II, October 26, 2006, pp. 62664–62874.

Other Regulations

Public Law 103-322, House of Representatives Bill 3355, "Violent Crime Control and Law Enforcement Act of 1994."

Public Law 104-208, *United States Code*, Section 922(g)(9), "Gun Ban for Individuals Convicted of a Misdemeanor Crime of Domestic Violence" (also know as the 1996 Lautenberg Amendment to the Gun Control Act of 1994).

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[1] All NRC regulations listed herein are available electronically through the Electronic Reading Room on the NRC's public Web site, at http://www.nrc.gov/reading-rm/doc-collections/cfr/. Copies are also available for inspection or copying for a fee from the NRC's Public Document Room (PDR) at 11555 Rockville Pike, Rockville, MD; the mailing address is USNRC PDR, Washington, DC 20555; telephone (301) 415-4737 or (800) 397-4209; fax (301) 415-3548; and email PDR@nrc.gov.

[2] All *Federal Register* notices listed herein were issued by the U.S. Nuclear Regulatory Commission are are available for inspection or copying for a fee from the NRC's Public Document Room (PDR) at 11555 Rockville Pike, Rockville, MD; the mailing address is USNRC PDR, Washington, DC 20555; telephone (301) 415-4737 or (800) 397-4209; fax (301) 415-3548; and email PDR@nrc.gov. Many are also available electronically through the *Federal Register* Main Page of the public GPOAccess Web site, which the U.S. Government Printing Office maintains at http://www.gpoaccess.gov/fr/index.html.