

Supplemental Background Information

NRC Security requirements, plans and objectives

NRC regulation requires that a nuclear power plant establish and maintain of a physical protection system which will have capabilities for the protection against the design basis threats (DBT) against acts of radiological sabotage.

The DBT for radiological sabotage is:

- (i) A determined violent external assault, attack by stealth, or deceptive actions, by an adversary force capable of operating in each of the following modes:

This includes a single group or multiple groups attacking through single, multiple or a combination of entry points with the following attributes, assistance and equipment:

- (A) Well-trained (including military training and skills) and dedicated individuals, willing to kill or be killed, with sufficient knowledge to identify specific equipment or locations necessary for a successful attack;
 - (B) Active or passive, knowledgeable inside assistance.
 - (C) Suitable weapons, including handheld automatic weapons, equipped with silencers and having effective long-range accuracy.
 - (D) Hand-carried equipment, including incapacitating agents and explosives for use as tools of entry or for otherwise destroying reactor, and
 - (E) Land and water vehicles, which could be used for transporting personnel and their hand-carried equipment to the proximity of vital areas; and
- (ii) An internal threat; and
 - (iii) A land vehicle bomb assault, which may be coordinated with an external assault; and
 - (iv) A waterborne vehicle bomb assault, which may be coordinated with an external assault; and
 - (v) A cyber attack.

Security Plans:

Each nuclear power reactor applicant must submit and implement a Commission-approved Physical Security Plan, Training and Qualification Plan, Safeguards Contingency Plan, and Cyber Security Plan.

(1) Physical Security Plan. The licensee shall establish, maintain, and implement a Physical Security Plan which describes how the performance objective and requirements set forth in this section will be implemented.

(2) Training and Qualification Plan. The licensee shall establish, maintain, and implement, and follow a Training and Qualification Plan that describes how the criteria

for “Nuclear Power Reactor Training and Qualification Plan for Personnel Performing Security Program Duties,” will be implemented.

(3) Safeguards Contingency Plan. The licensee shall establish, maintain, and implement a Safeguards Contingency Plan that describes how the criteria set forth in appendix C, section II, to this part, “Nuclear Power Plant Safeguards Contingency Plans,” will be implemented.

(4) Cyber Security Plan. The licensee shall establish, maintain, and implement a Cyber Security Plan that describes how the criteria set forth in § 73.54 “Protection of Digital Computer and Communication systems and Networks” of this part will be implemented.

Nuclear Power Plant Physical Security Requirements

The NRC requires nuclear power plants to also have specific significant security measures in place.

Security enhancements for nuclear power plants were upgraded following the events of September 11, 2001, terrorist attacks to include specific requirements for:

- Increased security officer staffing
- Increased security patrols
- Additional physical barriers
- Greater stand-off distances for vehicle checks
- More restrictive site access controls

Nuclear power plants must show they can defend against a set of adversary Design Basis Threat. The specific details of the DBT and the specifics are not publicly available.

The NRC’s security baseline inspection program is the primary way the agency verifies nuclear power plants are operating according to security regulations. Licensees train and must demonstrate capabilities to defend the plant through Force-on-force security inspections exercises. In these inspections, a specially trained mock adversary force “attacks” the facility using the DBT attributes.

Security Officer Training

Overview of 10CFR73.55 Appendix B – Nuclear Power Reactor Training and Qualification Plan for Personnel Performing Security Program Duties

1. The NRC has developed minimum training and qualification requirements that must be implemented through a Commission-approved training and qualification plan.
2. Each individual assigned to perform security program duties and responsibilities required must demonstrate the knowledge, skills, and abilities required to effectively perform the assigned duties and responsibilities before the individual is assigned the duty or responsibility
3. The licensee shall ensure that the training and qualification program simulates, as closely as practicable, the specific conditions under which the individual shall be required to perform assigned duties and responsibilities.
4. The licensee may not allow any individual to perform any security function, assume any security duties or responsibilities, or return to security duty, until that individual satisfies the training and qualification requirements of this appendix and the Commission-approved training and qualification plan, unless specifically authorized by the Commission.
5. Employment Suitability and Qualification

A. Suitability and Qualification.

1. Physical qualifications.

- (a) General physical qualifications.
- (b) Vision.
- (c) Hearing.
- (d) Existing medical conditions.

2. Psychological qualifications.

(a) A licensed psychologist, psychiatrist, or physician trained in part to identify emotional instability shall determine whether armed members of the security organization and alarm station operators in addition to meeting the requirement stated in paragraph (a) of this section, have no emotional instability that would interfere with the effective performance of assigned duties and responsibilities.

3. Medical examinations and physical fitness qualifications.

(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 and include:

- (1) The physical fitness test must consider physical conditions such as strenuous activity, physical exertion, levels of stress, and exposure to the elements as they pertain to each individual's assigned security duties for both normal and emergency operations and must simulate site specific conditions under which the individual will be required to perform assigned duties and responsibilities
- (2) At least annually, armed and unarmed individuals shall be required to demonstrate the capability to meet the physical requirements of this appendix and the licensee training and qualification plan.

B. Duty Training

1. 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 possesses the minimum knowledge, skills, and abilities required to effectively carry out those assigned duties and responsibilities.

On-the-job training for contingency activities and drills must include, but is not limited to, hands-on application of knowledge, skills, and abilities related to:

- (1) Response team duties.
- (2) Use of force.
- (3) Tactical movement.
- (4) Cover and concealment.
- (5) Defensive positions.
- (6) Fields-of-fire.
- (7) Re-deployment.
- (8) Communications (primary and alternate).
- (9) Use of assigned equipment.
- (10) Target sets.
- (11) Table top drills.
- (12) Command and control duties.
- (13) Licensee Protective Strategy.

3. Performance Evaluation Program.

- (a) Licensees shall develop, implement and maintain a Performance Evaluation Program which describes how the licensee will demonstrate and assess the effectiveness of their onsite physical protection program and protective strategy, including the capability of the armed response team to carry out their assigned duties and responsibilities during safeguards contingency events.
- (b) Tactical response drills and force-on-force exercises must be designed to challenge the site protective strategy against elements of the design basis threat.
- (c) Tactical response drills, force-on-force exercises, and associated contingency response training shall be conducted under conditions that simulate, as closely as practicable, the site-specific conditions under which each member will, or may be, required to perform assigned duties and responsibilities.

(d) Each scenario must use a unique target set or target sets, and varying combinations of adversary equipment, strategies, and tactics, to ensure that the combination of all scenarios challenges every component of the onsite physical protection program.

2. Requalification -Armed and unarmed individuals shall be requalified at least annually in accordance with the requirements of this appendix and the Commission-approved training and qualification plan.

C. Weapons Training

(a) Firearms instructors.

(1) Each armed member of the security organization shall be trained and qualified by a certified firearms instructor for the use and maintenance of each assigned weapon to include but not limited to, marksmanship, assembly, disassembly, cleaning, storage, handling, clearing, loading, unloading, and reloading, for each assigned weapon.

(2) Annual firearms familiarization. The licensee shall conduct annual firearms familiarization training in accordance with the Commission-approved training and qualification plan.

(3) Mechanical assembly, disassembly, weapons capabilities and fundamentals of marksmanship.

(a) Weapons cleaning and storage.

(b) Combat firing, day and night.

(c) Safe weapons handling.

(d) Clearing, loading, unloading, and reloading.

(e) Firing under stress.

(f) Zeroing duty weapon(s) and weapons sighting adjustments.

(g) Target identification and engagement.

(h) Weapon malfunctions.

(i) Cover and concealment.

(j) Weapon familiarization.

(k)

(4) The licensee shall ensure that each armed member of the security organization is instructed on the use of deadly force as authorized by applicable state law.

(5) Armed members of the security organization shall participate in weapons range activities on a nominal four (4) month periodicity. Performance may be conducted up to five (5) weeks before, to five (5) weeks after, the scheduled date. The next scheduled date must be four (4) months from the originally scheduled date.

D. Weapons Qualification and Requalification Program

1. Tactical weapons qualification Licensee developed tactical qualification and requalification courses must describe the performance criteria needed to include the site-specific conditions (such as lighting, elevation, fields-of-fire) under which assigned personnel shall be required to carry-out their assigned duties.
2. Firearms qualification courses. The licensee shall conduct the following qualification courses for each weapon used.
 - (a) Annual daylight qualification course with handgun and shotgun, semiautomatic rifle and/or enhanced weapons.
 - (b) Annual night fire qualification course.
 - (c) Annual tactical qualification course.
3. Courses of fire.
 - a) Handgun - Armed members using a revolver or semiautomatic pistol shall qualify in accordance with standards established by a law enforcement course, or an equivalent nationally recognized course.
 - b) Semiautomatic rifle. Armed members using of a semiautomatic rifle shall qualify in accordance with the standards established by a law enforcement course, or an equivalent nationally recognized course.
 - c) Shotgun. Armed members using of a shotgun shall qualify in accordance with standards established by a law enforcement course, or an equivalent nationally recognized course.
 - (d) Enhanced weapons. Armed members using of any weapon or weapons not described previously shall qualify in accordance with applicable standards established by a law enforcement course or an equivalent nationally recognized course for these weapons.
6. Firearms requalification must be conducted using established the courses of fire outlined above

E. Personal Equipment

1. Personal equipment.
 - (a) The licensee shall provide armed security personnel, required for the effective implementation of the Commission-approved Safeguard at a minimum, but is not limited to, the following:
 - (1) Gas mask, full face.
 - (2) Body armor (bullet-resistant vest).
 - (3) Ammunition/equipment belt.
 - (4) Two-way portable radios, 2 channels minimum, 1 operating and 1 emergency.

(c) Based upon the licensee protective strategy and the specific duties and responsibilities assigned to each individual, the licensee should provide, as appropriate, but is not limited to, the following.

- (1) Flashlights and batteries.
- (2) Baton or other non-lethal weapons.
- (3) Handcuffs.
- (4) Binoculars.
- (5) Night vision aids (e.g., goggles, weapons sights).
- (6) Hand-fired illumination flares or equivalent.
- (7) Duress alarms.