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APPENDIX B TO PART 73—GENERAL CRITERIA FOR SECURITY PERSONNEL

TABLE OF CONTENTS

- Introduction.
- Definitions.
- Criteria.
 - I. Employment suitability and qualification.
 - A. Suitability.
 - B. Physical and mental qualifications.
 - C. Medical examination and physical fitness qualifications.
 - D. Contract security personnel.
 - E. Physical and medical requalification.
 - F. Documentation.
 - II. Training and qualifications.
 - A. Training requirements.
 - B. Qualification requirements.
 - C. Contract personnel.
 - D. Security knowledge, skills, and abilities.
 - E. Requalification.
 - III. Weapons training and qualification.
 - IV. Weapons qualification and requalification program.

- V. Guard, armed response personnel, and armed escort equipment.
 - A. Fixed site.
 - B. Transportation.
- VI. Nuclear Power Reactor Training and Qualification Plan for Personnel Performing Security Program Duties
 - A. General Requirements and Introduction
 - B. Employment Suitability and Qualification
 - C. Duty Training
 - D. Duty Qualification and Requalification
 - E. Weapons Training
 - F. Weapons Qualification and Requalification Program
 - G. Weapons, Personal Equipment and Maintenance
 - H. Records
 - I. Reviews
 - J. Definitions

INTRODUCTION

Applicants and power reactor licensees subject to the requirements of §73.55 shall comply only with the requirements of section VI of this appendix. All other licensees, applicants, or certificate holders shall comply only with sections I through V of this appendix.

Security personnel who are responsible for the protection of special nuclear material on site or in transit and for the protection of the facility or shipment vehicle against radiological sabotage should, like other elements of the physical security system, be required to meet minimum criteria to ensure that they will effectively perform their assigned security-related job duties. In order to ensure that those individuals responsible for security are properly equipped and qualified to execute the job duties prescribed for

them, the NRC has developed general criteria that specify security personnel qualification requirements.

These general criteria establish requirements for the selection, training, equipping, testing, and qualification of individuals who will be responsible for protecting special nuclear materials, nuclear facilities, and nuclear shipments.

When required to have security personnel that have been trained, equipped, and qualified to perform assigned security job duties in accordance with the criteria in this appendix, the licensee must establish, maintain, and follow a plan that shows how the criteria will be met. The plan must be submitted to the NRC for approval and must be implemented within 30 days after approval by the NRC unless otherwise specified by the NRC in writing.

DEFINITIONS

Terms defined in parts 50, 70, and 73 of this chapter have the same meaning when used in this appendix.

CRITERIA

I. Employment suitability and qualification.

A. Suitability: 1. Prior to employment, or assignment to the security organization, an individual shall meet the following suitability criteria:

a. Educational development—Possess a high school diploma or pass an equivalent performance examination designed to measure basic job-related mathematical, language, and reasoning skills, ability, and knowledge, required to perform security job duties.

b. Felony convictions—Have no felony convictions involving the use of a weapon and no felony convictions that reflect on the individual's reliability.

2. Prior to employment or assignment to the security organization in an armed capacity, the individual, in addition to (a) and (b) above, must be 21 years of age or older.

B. Physical and mental qualifications. 1. Physical qualifications:

a. Individuals whose security tasks and job duties are directly associated with the effective implementation of the licensee physical security and contingency plans shall have no physical weaknesses or abnormalities that would adversely affect their performance of assigned security job duties.

b. In addition to a. above, guards, armed response personnel, armed escorts, and central alarm station operators shall successfully pass a physical examination administered by a licensed physician. The examination shall be designed to measure the individual's physical ability to perform assigned security job duties as identified in the licensee physical security and contingency

plans. Armed personnel shall meet the following additional physical requirements:

(1) Vision: (a) For each individual, distant visual acuity in each eye shall be correctable to 20/30 (Snellen or equivalent) in the better eye and 20/40 in the other eye with eyeglasses or contact lenses. If uncorrected distance vision is not at least 20/40 in the better eye, the individual shall carry an extra pair of corrective lenses. Near visual acuity, corrected or uncorrected, shall be at least 20/40 in the better eye. Field of vision must be at least 70° horizontal meridian in each eye. The ability to distinguish red, green, and yellow colors is required. Loss of vision in one eye is disqualifying. Glaucoma shall be disqualifying, unless controlled by acceptable medical or surgical means, provided such medications as may be used for controlling glaucoma do not cause undesirable side effects which adversely affect the individual's ability to perform assigned security job duties, and provided the visual acuity and field of vision requirements stated above are met. On-the-job evaluation shall be used for individuals who exhibit a mild color vision defect.

(b) Where corrective eyeglasses are required, they shall be of the safety glass type.

(c) The use of corrective eyeglasses or contact lenses shall not interfere with an individual's ability to effectively perform assigned security job duties during normal or emergency operations.

(2) Hearing: (a) Individuals shall have no hearing loss in the better ear greater than 30 decibels average at 500 Hz, 1,000 Hz, and 2,000 Hz with no level greater than 40 decibels at any one frequency (by ISO 389 "Standard Reference Zero for the Calibration of Puritone Audiometer" (1975) or ANSI S3.6-1969 (R. 1973) "Specifications for Audiometers"). ISO 389 and ANSI S3.6-1969 have been approved for incorporation by reference by the Director of the Federal Register. A copy of each standard is available for inspection at the NRC Library, 11545 Rockville Pike, Rockville, Maryland 20852-2738.

(b) A hearing aid is acceptable provided suitable testing procedures demonstrate auditory acuity equivalent to the above stated requirement.

(c) The use of a hearing aid shall not decrease the effective performance of the individual's assigned security job duties during normal or emergency operations.

(3) Diseases—Individuals shall have no established medical history or medical diagnosis of epilepsy or diabetes, or, where such a condition exists, the individual shall provide medical evidence that the condition can be controlled with proper medication so that the individual will not lapse into a coma or unconscious state while performing assigned security job duties.

(4) Addiction—Individuals shall have no established medical history or medical diagnosis of habitual alcoholism or drug addiction, or, where such a condition has existed, the individual shall provide certified documentation of having completed a rehabilitation program which would give a reasonable degree of confidence that the individual would be capable of performing assigned security job duties.

(5) Other physical requirements—An individual who has been incapacitated due to a serious illness, injury, disease, or operation, which could interfere with the effective performance of assigned security job duties shall, prior to resumption of such duties, provide medical evidence of recovery and ability to perform such security job duties.

2. Mental qualifications: a. Individuals whose security tasks and job duties are directly associated with the effective implementation of the licensee physical security and contingency plans shall demonstrate mental alertness and the capability to exercise good judgment, implement instructions, assimilate assigned security tasks, and possess the acuity of senses and ability of expression sufficient to permit accurate communication by written, spoken, audible, visible, or other signals required by assigned job duties.

b. Armed individuals, and central alarm station operators, in addition to meeting the requirement stated in paragraph a. above, shall have no emotional instability that would interfere with the effective performance of assigned security job duties. The determination shall be made by a licensed psychologist or psychiatrist, or physician, or other person professionally trained to identify emotional instability.

c. The licensee shall arrange for continued observation of security personnel and for appropriate corrective measures by responsible supervisors for indications of emotional instability of individuals in the course of performing assigned security job duties. Identification of emotional instability by responsible supervisors shall be subject to verification by a licensed, trained person.

C. Medical examinations and physical fitness qualifications—Guards, armed response personnel, armed escorts and other armed security force members shall be given a medical examination including a determination and written certification by a licensed physician that there are no medical contraindications as disclosed by the medical examination to participation by the individual in physical fitness tests. Subsequent to this medical examination, guards, armed response personnel, armed escorts and other armed security force members shall demonstrate physical fitness for assigned security job duties by performing a practical physical exercise program within a specific time period. The exercise program perform-

ance objectives shall be described in the license training and qualifications plan and shall consider job-related functions such as strenuous activity, physical exertion, levels of stress, and exposure to the elements as they pertain to each individual's assigned security job duties for both normal and emergency operations. The physical fitness qualification of each guard, armed response person, armed escort, and other security force member shall be documented and attested to by a licensee security supervisor. The licensee shall retain this documentation as a record for three years from the date of each qualification.

D. Contract security personnel—Contract security personnel shall be required to meet the suitability, physical, and mental requirements as appropriate to their assigned security job duties in accordance with section I of this appendix.

E. Physical requalification—At least every 12 months, central alarm station operators shall be required to meet the physical requirements of B.1.b of this section, and guards, armed response personnel, and armed escorts shall be required to meet the physical requirements of paragraphs B.1.b (1) and (2), and C of this section. The licensee shall document each individual's physical requalification and shall retain this documentation of requalification as a record for three years from the date of each requalification.

F. Documentation—The results of suitability, physical, and mental qualifications data and test results must be documented by the licensee or the licensee's agent. The licensee or the agent shall retain this documentation as a record for three years from the date of obtaining and recording these results.

G. Nothing herein authorizes or requires a licensee to investigate into or judge the reading habits, political or religious beliefs, or attitudes on social, economic, or political issues of any person.

II. Training and qualifications.

A. Training requirements—Each individual who requires training to perform assigned security-related job tasks or job duties as identified in the licensee physical security or contingency plans shall, prior to assignment, be trained to perform these tasks and duties in accordance with the licensee or the licensee's agent's documented training and qualifications plan. The licensee or the agent shall maintain documentation of the current plan and retain this documentation of the plan as a record for three years after the close of period for which the licensee possesses the special nuclear material under each license for which the plan was developed and, if any portion of the plan is superseded, retain the material that is superseded for three years after each change.

B. Qualification requirements—Each person who performs security-related job tasks

or job duties required to implement the licensee physical security or contingency plan shall, prior to being assigned to these tasks or duties, be qualified in accordance with the licensee's NRC-approved training and qualifications plan. The qualifications of each individual must be documented and attested by a licensee security supervisor. The licensee shall retain this documentation of each individual's qualifications as a record for three years after the employee ends employment in the security-related capacity and for three years after the close of period for which the licensee possesses the special nuclear material under each license, and superseded material for three years after each change.

C. Contract personnel—Contract personnel shall be trained, equipped, and qualified as appropriate to their assigned security-related job tasks or job duties, in accordance with sections II, III, IV, and V of this appendix. The qualifications of each individual must be documented and attested by a licensee security supervisor. The licensee shall retain this documentation of each individual's qualifications as a record for three years after the employee ends employment in the security-related capacity and for three years after the close of period for which the licensee possesses the special nuclear material under each license, and superseded material for three years after each change.

D. Security knowledge, skills, and abilities—Each individual assigned to perform the security related task identified in the licensee physical security or contingency plan shall demonstrate the required knowledge, skill, and ability in accordance with the specified standards for each task as stated in the NRC approved licensee training and qualifications plan. The areas of knowledge, skills, and abilities that shall be considered in the licensee's training and qualifications plan are as follows:

1. Protection of nuclear facilities, transport vehicles, and special nuclear material.
2. NRC requirements and guidance for physical security at nuclear facilities and for transportation.
3. The private security guard's role in providing physical protection for the nuclear industry.
4. The authority of private guards.
5. The use of nonlethal weapons.
6. The use of deadly force.
7. Power of arrest and authority to detain individuals.
8. Authority to search individuals and seize property.
9. Adversary group operations.
10. Motivation and objectives of adversary groups.
11. Tactics and force that might be used by adversary groups to achieve their objectives.

12. Recognition of sabotage related devices and equipment that might be used against the licensee's facility or shipment vehicle.

13. Facility security organization and operation.

14. Types of physical barriers.

15. Weapons, lock and key control system operation.

16. Location of SNM and/or vital areas within a facility.

17. Protected area security and vulnerability.

18. Types of alarm systems used.

19. Response and assessment to alarm annunciations and other indications of intrusion.

20. Familiarization with types of special nuclear material processed.

21. General concepts of fixed site security systems.

22. Vulnerabilities and consequences of theft of special nuclear material or radiological sabotage of a facility.

23. Protection of security system information.

24. Personal equipment use and operation for normal and contingency operations.

25. Surveillance and assessment systems and techniques.

26. Communications systems operation, fixed site.

27. Access control systems and operation for individuals, packages, and vehicles.

28. Contraband detection systems and techniques.

29. Barriers and other delay systems around material access or vital areas.

30. Exterior and interior alarm systems operation.

31. Duress alarm operation.

32. Alarm stations operation.

33. Response force organization.

34. Response force mission.

35. Response force operation.

36. Response force engagement.

37. Security command and control system during normal operation.

38. Security command and control system during contingency operation.

39. Transportation systems security organization and operation.

40. Types of SNM transport vehicles.

41. Types of SNM escort vehicles.

42. Modes of transportation for SNM.

43. Road transport security system command and control structure.

44. Use of weapons.

45. Communications systems operation for transportation, shipment to control center and intraconvoy.

46. Vulnerabilities and consequences of theft of special nuclear material or radiological sabotage of a transport vehicle.

47. Protection of transport system security information.

48. Control of area around transport vehicle.

49. Normal convoy techniques and operations.
 50. Familiarization with types of special nuclear materials shipped.
 51. Fixed post station operations.
 52. Access control system operation.
 53. Search techniques and systems for individuals, packages and vehicles.
 54. Escort and patrol responsibilities and operation.
 55. Contingency response to confirmed intrusion or attempted intrusion.
 56. Security system operation after component failure.
 57. Fixed site security information protection.
 58. Security coordination with local law enforcement agencies.
 59. Security and situation reporting, documentation and report writing.
 60. Contingency duties.
 61. Self defense.
 62. Use of and defenses against incapacitating agents.
 63. Security equipment testing.
 64. Contingency procedures.
 65. Night vision devices and systems.
 66. Mechanics of detention.
 67. Basic armed and unarmed defensive tactics.
 68. Response force deployment.
 69. Security alert procedures.
 70. Security briefing procedures.
 71. Response force tactical movement.
 72. Response force withdrawal.
 73. Response force use of support fire.
 74. Response to bomb and attack threats.
 75. Response to civil disturbances (e.g., strikes, demonstrators).
 76. Response to confirmed attempted theft of special nuclear material and/or radiological sabotage of facilities.
 77. Response to hostage situations.
 78. Site specific armed tactical procedures and operation.
 79. Security response to emergency situations other than security incidents.
 80. Basic transportation defensive response tactics.
 81. Armed escort deployment.
 82. Armed escort adversary engagement.
 83. Armed escort formations.
 84. Armed escort use of weapons fire (tactical and combat).
 85. Armed escort and shipment movement under fire.
 86. Tactical convoying techniques and operations.
 87. Armed escort tactical exercises.
 88. Armed escort response to bomb and attack threats.
 89. Verification of shipment documentation and contents.
 90. Continuous surveillance of shipment vehicle.
 91. Normal and contingency operation for shipment mode transfer.
 92. Armed personnel procedures and operation during temporary storage between mode transfers of shipments.
 93. Armed escort threat assessment and response.
 94. System for and operation of shipment vehicle lock and key control.
 95. Techniques and procedures for isolation of shipment vehicle during a contingency situation.
 96. Transportation coordination with local law enforcement agencies.
 97. Procedures for verification of shipment locks and seals.
 98. Transportation security and situation reporting, documentation, and report writing.
 99. Procedures for shipment delivery and pickup.
 100. Transportation security system for escort by road, rail, air and sea.
- E. Requalification—Security personnel shall be requalified at least every 12 months to perform assigned security-related job tasks and duties for both normal and contingency operations. Requalification shall be in accordance with the NRC-approved licensee training and qualifications plan. The results of requalification must be documented and attested by a licensee security supervisor. The licensee shall retain this documentation of each individual's requalification as a record for three years from the date of each requalification.
- III. Weapons training.
- A. Guards, armed response personnel and armed escorts requiring weapons training to perform assigned security related job tasks or job duties shall be trained in accordance with the licensees' documented weapons training programs. Each individual shall be proficient in the use of his assigned weapon(s) and shall meet prescribed standards in the following areas:
1. Mechanical assembly, disassembly, range penetration capability of weapon, and bullseye firing.
 2. Weapons cleaning and storage.
 3. Combat firing, day and night.
 4. Safe weapons handling.
 5. Clearing, loading, unloading, and reloading.
 6. When to draw and point a weapon.
 7. Rapid fire techniques.
 8. Close quarter firing.
 9. Stress firing.
 10. Zeroing assigned weapon(s).
- IV. Weapons qualification and requalification program.
- Qualification firing for the handgun and the rifle must be for daylight firing, and each individual shall perform night firing for familiarization with assigned weapon(s). The results of weapons qualification and requalification must be documented by the licensee or the licensee's agent. Each individual shall

be requalified at least every 12 months. The licensee shall retain this documentation of each qualification and requalification as a record for three years from the date of the qualification or requalification, as appropriate.

A. Handgun—Guards, armed escorts and armed response personnel shall qualify with a revolver or semiautomatic pistol firing the national police course, or an equivalent nationally recognized course. Qualifying score shall be an accumulated total of 70 percent of the maximum obtainable score.

B. Semiautomatic Rifle—Guards, armed escorts and armed response personnel, assigned to use the semiautomatic rifle by the licensee training and qualifications plan, shall qualify with a semiautomatic rifle by firing the 100-yard course of fire specified in section 17.5(1) of the National Rifle Association, High Power Rifle Rules book (effective March 15, 1976),¹ or a nationally recognized equivalent course of fire. Targets used shall be as stated in section 17.5 for the 100-yard course. Time limits for individuals shall be as specified in section 8.2 of the NRA rule book, regardless of the course fired. Qualifying score shall be an accumulated total of 80 percent of the maximum obtainable score.

C. Shotgun—Guards, armed escorts, and armed response personnel assigned to use the 12 gauge shotgun by the licensee training and qualifications plan shall qualify with a full choke or improved modified choke 12 gauge shotgun firing the following course:

Range	Position	No. Rounds ¹	Target ²
15 yds	Hip fire point	4	B-27
25 yds	Shoulder	4	B-27

¹ The 4 rounds shall be fired at 4 separate targets within 10 seconds using 00 gauge (9 pellet) shotgun shells.

² As set forth by the National Rifle Association (NRA) in its official rules and regulations, "NRA Target Manufacturers Index," December 1976. The Index has been approved for incorporation by reference by the Director of the Federal Register. A copy of the index is available for inspection at the NRC Library, 11545 Rockville Pike, Rockville, Maryland 20852-2738.

To qualify the individual shall be required to place 50 percent of all pellets (36 pellets) within the black silhouette.

D. Requalification—Individuals shall be weapons requalified at least every 12 months in accordance with the NRC approved licensee training and qualifications plan, and in accordance with the requirements stated in A, B, and C of this section.

V. Guard, armed response personnel, and armed escort equipment.

¹Copies of the "NRA High Power Rifle Rules" may be examined at, or obtained from, the National Rifle Association, 1600 Rhode Island Avenue NW., Washington, DC 20036.

A. Fixed Site—Fixed site guards and 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 physical security and contingency plans:

1. Semiautomatic rifles with following nominal minimum specifications:

- (a) .223 caliber.
- (b) Muzzle velocity, 1980 ft/sec.
- (c) Muzzle energy, 955 foot-pounds.
- (d) Magazine or clip load of 10 rounds.
- (e) Magazine reload, < 10 seconds.
- (f) Operable in any environment in which it will be used.

2. 12 gauge shotguns with the following capabilities:

- (a) 4 round pump or semiautomatic.
- (b) Operable in any environment in which it will be used.
- (c) Full or modified choke.

3. Semiautomatic pistols or revolvers with the following nominal minimum specifications:

- (a) .354 caliber.
- (b) Muzzle energy, 250 foot-pounds.
- (c) Full magazine or cylinder reload capability < 6 seconds.
- (d) Muzzle velocity, 850 ft/sec.
- (e) Full cylinder or magazine capacity, 6 rounds.
- (f) Operable in any environment in which it will be used.

4. Ammunition:

(a) For each assigned weapon as appropriate to the individual's assigned contingency security job duties and as readily available as the weapon:

- (1) 18 rounds per handgun.
- (2) 100 rounds per semiautomatic rifle.
- (3) 12 rounds each per shotgun (00 gauge and slug).

(b) Ammunition available on site—two (2) times the amount stated in (a) above for each weapon.

5. Personal equipment to be readily available for individuals whose assigned contingency security job duties, as described in the licensee physical security and contingency plans, warrant such equipment:

- (a) Helmet, combat.
- (b) Gas mask, full face.
- (c) Body armor (bullet-resistant vest).
- (d) Flashlights and batteries.
- (e) Baton.
- (f) Handcuffs.
- (g) Ammunition/equipment belt.

6. Binoculars.

7. Night vision aids, i.e., hand-fired illumination flares or equivalent.

8. Tear gas or other nonlethal gas.

9. Duress alarms.

10. Two-way portable radios (handi-talkie) 2 channels minimum, 1 operating and 1 emergency.

B. Transportation—Armed escorts shall either be equipped with or have readily available the following security equipment appropriate to the individual's assigned contingency security related tasks or job duties, as described in the licensee physical security and contingency plans:

1. Semiautomatic rifles with the following nominal minimum specifications:

- (a) .223 caliber.
- (b) Muzzle velocity, 1,980 ft/sec.
- (c) Muzzle energy, 955 foot-pounds.
- (d) Magazine or clip of 10 rounds.
- (e) Reload capability, 10 seconds.
- (f) Operable in any environment in which it will be used.

2. 12 gauge shotguns.

- (a) 4 round pump or semiautomatic.
- (b) Operable in any environment in which it will be used.
- (c) Full or modified choke.

3. Semiautomatic pistols or revolvers with the following nominal minimum specifications:

- (a) .354 caliber.
- (b) Muzzle energy, 250 foot-pounds.
- (c) Full magazine or cylinder reload capability 6 seconds.
- (d) Muzzle velocity, 850 ft/sec.
- (e) Full cylinder or magazine capacity, 6 rounds.
- (f) Operable in any environment in which it will be used.

4. Ammunition for each shipment.

(a) For each assigned weapon as appropriate to the individual's assigned contingency security job duties and as readily available as the weapon:

- (1) 36 rounds per handgun.
- (2) 120 rounds per semiautomatic rifle.
- (3) 12 rounds each per shotgun (00 gauge and slug).

5. Escort vehicles, bullet resisting, equipped with communications systems, red flares, first aid kit, emergency tool kit, tire changing equipment, battery chargers for radios (where appropriate, for recharging portable radio batteries).

6. Personal equipment to be readily available for individuals whose assigned contingency security job duties, as described in the licensee physical security and contingency plans, warrant such equipment:

- (a) Helmet, combat.
- (b) Gas mask, full face.
- (c) Body armor (bullet-resistant vest).
- (d) Flashlights and batteries.
- (e) Baton.
- (f) Ammunition/equipment belt.
- (g) Pager/duress alarms.

7. Binoculars.

8. Night vision aids, *i.e.*, hand-fired illumination flares or equivalent.

9. Tear gas or other nonlethal gas.

VI. Nuclear Power Reactor Training and Qualification Plan for Personnel Performing Security Program Duties

A. General Requirements and Introduction

1. The licensee shall ensure that all individuals who are assigned duties and responsibilities required to prevent significant core damage and spent fuel sabotage, implement the Commission-approved security plans, licensee response strategy, and implementing procedures, meet minimum training and qualification requirements to ensure each individual possesses the knowledge, skills, and abilities required to effectively perform the assigned duties and responsibilities.

2. To ensure that those individuals who are assigned to perform duties and responsibilities required for the implementation of the Commission-approved security plans, licensee response strategy, and implementing procedures are properly suited, trained, equipped, and qualified to perform their assigned duties and responsibilities, the Commission has developed minimum training and qualification requirements that must be implemented through a Commission-approved training and qualification plan.

3. The licensee shall establish, maintain, and follow a Commission-approved training and qualification plan, describing how the minimum training and qualification requirements set forth in this appendix will be met, to include the processes by which all individuals, will be selected, trained, equipped, tested, and qualified.

4. Each individual assigned to perform security program duties and responsibilities required to effectively implement the Commission-approved security plans, licensee protective strategy, and the licensee implementing procedures, shall demonstrate the knowledge, skills, and abilities required to effectively perform the assigned duties and responsibilities before the individual is assigned the duty or responsibility.

5. 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.

6. 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.

7. Annual requirements must be scheduled at a nominal twelve (12) month periodicity. Annual requirements may be completed up to three (3) months before or three (3) months after the scheduled date. However, the next annual training must be scheduled twelve (12) months from the previously scheduled date rather than the date the training was actually completed.

Nuclear Regulatory Commission

Pt. 73, App. B

B. Employment Suitability and Qualification

1. Suitability.

(a) Before employment, or assignment to the security organization, an individual shall:

(1) Possess a high school diploma or pass an equivalent performance examination designed to measure basic mathematical, language, and reasoning skills, abilities, and knowledge required to perform security duties and responsibilities;

(2) Have attained the age of 21 for an armed capacity or the age of 18 for an unarmed capacity; and

(3) Not have any felony convictions that reflect on the individual's reliability.

(4) Individuals in an armed capacity, would not be disqualified from possessing or using firearms or ammunition in accordance with applicable state or Federal law, to include 18 U.S.C. 922. Licensees shall use information that has been obtained during the completion of the individual's background investigation for unescorted access to determine suitability. Satisfactory completion of a firearms background check for the individual under 10 CFR 73.19 of this part will also fulfill this requirement.

(b) The qualification of each individual to perform assigned duties and responsibilities must be documented by a qualified training instructor and attested to by a security supervisor.

2. Physical qualifications.

(a) General physical qualifications.

(1) Individuals whose duties and responsibilities are directly associated with the effective implementation of the Commission-approved security plans, licensee protective strategy, and implementing procedures, may not have any physical conditions that would adversely affect their performance of assigned security duties and responsibilities.

(2) Armed and unarmed individuals assigned security duties and responsibilities shall be subject to a physical examination designed to measure the individual's physical ability to perform assigned duties and responsibilities as identified in the Commission-approved security plans, licensee protective strategy, and implementing procedures.

(3) This physical examination must be administered by a licensed health professional with the final determination being made by a licensed physician to verify the individual's physical capability to perform assigned duties and responsibilities.

(4) The licensee shall ensure that both armed and unarmed individuals who are assigned security duties and responsibilities identified in the Commission-approved security plans, the licensee protective strategy, and implementing procedures, meet the following minimum physical requirements, as

required to effectively perform their assigned duties.

(b) Vision.

(1) For each individual, distant visual acuity in each eye shall be correctable to 20/30 (Snellen or equivalent) in the better eye and 20/40 in the other eye with eyeglasses or contact lenses.

(2) Near visual acuity, corrected or uncorrected, shall be at least 20/40 in the better eye.

(3) Field of vision must be at least 70 degrees horizontal meridian in each eye.

(4) The ability to distinguish red, green, and yellow colors is required.

(5) Loss of vision in one eye is disqualifying.

(6) Glaucoma is disqualifying, unless controlled by acceptable medical or surgical means, provided that medications used for controlling glaucoma do not cause undesirable side effects which adversely affect the individual's ability to perform assigned security duties, and provided the visual acuity and field of vision requirements stated previously are met.

(7) On-the-job evaluation must be used for individuals who exhibit a mild color vision defect.

(8) If uncorrected distance vision is not at least 20/40 in the better eye, the individual shall carry an extra pair of corrective lenses in the event that the primaries are damaged. Corrective eyeglasses must be of the safety glass type.

(9) The use of corrective eyeglasses or contact lenses may not interfere with an individual's ability to effectively perform assigned duties and responsibilities during normal or emergency conditions.

(c) Hearing.

(1) Individuals may not have hearing loss in the better ear greater than 30 decibels average at 500 Hz, 1,000 Hz, and 2,000 Hz with no level greater than 40 decibels at any one frequency.

(2) A hearing aid is acceptable provided suitable testing procedures demonstrate auditory acuity equivalent to the hearing requirement.

(3) The use of a hearing aid may not decrease the effective performance of the individual's assigned security duties during normal or emergency operations.

(d) Existing medical conditions.

(1) Individuals may not have an established medical history or medical diagnosis of existing medical conditions which could interfere with or prevent the individual from effectively performing assigned duties and responsibilities.

(2) If a medical condition exists, the individual shall provide medical evidence that the condition can be controlled with medical treatment in a manner which does not adversely affect the individual's fitness-for-duty, mental alertness, physical condition,

or capability to otherwise effectively perform assigned duties and responsibilities.

(e) Addiction. 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 which would give a reasonable degree of confidence that the individual would be capable of effectively performing assigned duties and responsibilities.

(f) Other physical requirements. An individual who has been incapacitated due to a serious illness, injury, disease, or operation, which could interfere with the effective performance of assigned duties and responsibilities shall, before resumption of assigned duties and responsibilities, provide medical evidence of recovery and ability to perform these duties and responsibilities.

3. Psychological qualifications.

(a) Armed and unarmed individuals shall demonstrate the ability to apply good judgment, mental alertness, the capability to implement instructions and assigned tasks, and possess the acuity of senses and ability of expression sufficient to permit accurate communication by written, spoken, audible, visible, or other signals required by assigned duties and responsibilities.

(b) 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.

(c) A person professionally trained to identify emotional instability shall determine whether unarmed individuals 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.

4. 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.

(1) The licensee shall obtain and retain a written certification from the licensed physician that no medical conditions were disclosed by the medical examination that would preclude the individual's ability to participate in the physical fitness tests or meet the physical fitness attributes or objectives associated with assigned duties.

(b) Before assignment, armed members of the security organization shall demonstrate physical fitness for assigned duties and re-

sponsibilities by performing a practical physical fitness test.

(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) The licensee shall describe the physical fitness test in the Commission-approved training and qualification plan.

(3) The physical fitness test must include physical attributes and performance objectives which demonstrate the strength, endurance, and agility, consistent with assigned duties in the Commission-approved security plans, licensee protective strategy, and implementing procedures during normal and emergency conditions.

(4) The physical fitness qualification of each armed member of the security organization must be documented by a qualified training instructor and attested to by a security supervisor.

5. Physical requalification.

(a) 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) The physical requalification of each armed and unarmed individual must be documented by a qualified training instructor and attested to by a security supervisor.

C. Duty Training

1. Duty training and qualification requirements. 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.

(a) The areas of knowledge, skills, and abilities that are required to perform assigned duties and responsibilities must be identified in the licensee's Commission-approved training and qualification plan.

(b) Each individual who is assigned duties and responsibilities identified in the Commission-approved security plans, licensee protective strategy, and implementing procedures shall, before assignment:

(1) Be trained to perform assigned duties and responsibilities in accordance with the requirements of this appendix and the Commission-approved training and qualification plan.

(2) Meet the minimum qualification requirements of this appendix and the Commission-approved training and qualification plan.

(3) Be trained and qualified in the use of all equipment or devices required to effectively perform all assigned duties and responsibilities.

2. On-the-job training.

(a) The licensee training and qualification program must include on-the-job training performance standards and criteria to ensure that each individual demonstrates the requisite knowledge, skills, and abilities needed to effectively carry-out assigned duties and responsibilities in accordance with the Commission-approved security plans, licensee protective strategy, and implementing procedures, before the individual is assigned the duty or responsibility.

(b) In addition to meeting the requirement stated in paragraph C.2.(a) of this appendix, before assignment, individuals (e.g., response team leaders, alarm station operators, armed responders, and armed security officers designated as a component of the protective strategy) assigned duties and responsibilities to implement the Safeguards Contingency Plan shall complete a minimum of 40 hours of on-the-job training to demonstrate their ability to effectively apply the knowledge, skills, and abilities required to effectively perform assigned *contingency* duties and responsibilities in accordance with the approved safeguards contingency plan, other security plans, licensee protective strategy, and implementing procedures. On-the-job training must be documented by a qualified training instructor and attested to by a security supervisor.

(c) 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 that is documented in procedures 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. The Performance Evaluation Program and procedures

shall be referenced in the licensee's Training and Qualifications Plan.

(b) The Performance Evaluation Program shall include procedures for the conduct of tactical response drills and force-on-force exercises designed to demonstrate and assess the effectiveness of the licensee's physical protection program, protective strategy and contingency event response by all individuals with responsibilities for implementing the safeguards contingency plan.

(c) The licensee shall conduct tactical response drills and force-on-force exercises in accordance with Commission-approved security plans, licensee protective strategy, and implementing procedures.

(d) Tactical response drills and force-on-force exercises must be designed to challenge the site protective strategy against elements of the design basis threat and ensure each participant assigned security duties and responsibilities identified in the Commission-approved security plans, the licensee protective strategy, and implementing procedures demonstrate the requisite knowledge, skills, and abilities.

(e) 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.

(f) The scope of tactical response drills conducted for training purposes shall be determined by the licensee and must address site-specific, individual or programmatic elements, and may be limited to specific portions of the site protective strategy.

(g) Each tactical response drill and force-on-force exercise shall include a documented post-exercise critique in which participants identify failures, deficiencies or other findings in performance, plans, equipment or strategies.

(h) Licensees shall document scenarios and participants for all tactical response drills and annual force-on-force exercises conducted.

(i) Findings, deficiencies and failures identified during tactical response drills and force-on-force exercises that adversely affect or decrease the effectiveness of the protective strategy and physical protection program shall be entered into the licensee's corrective action program to ensure that timely corrections are made to the appropriate program areas.

(j) Findings, deficiencies and failures associated with the onsite physical protection program and protective strategy shall be protected as necessary in accordance with the requirements of 10 CFR 73.21.

(k) For the purpose of tactical response drills and force-on-force exercises, licensees shall:

(1) Use no more than the total number of armed responders and armed security officers documented in the security plans.

(2) Minimize the number and effects of artificialities associated with tactical response drills and force-on-force exercises.

(3) Implement the use of systems or methodologies that simulate the realities of armed engagement through visual and audible means, and reflect the capabilities of armed personnel to neutralize a target through the use of firearms.

(4) Ensure that each scenario used provides a credible, realistic challenge to the protective strategy and the capabilities of the security response organization.

(1) The Performance Evaluation Program must be designed to ensure that:

(1) Each member of each shift who is assigned duties and responsibilities required to implement the safeguards contingency plan and licensee protective strategy participates in at least one (1) tactical response drill on a quarterly basis and one (1) force-on-force exercise on an annual basis. Force-on-force exercises conducted to satisfy the NRC triennial evaluation requirement can be used to satisfy the annual force-on-force requirement for the personnel that participate in the capacity of the security response organization.

(2) The mock adversary force replicates, as closely as possible, adversary characteristics and capabilities of the design basis threat described in 10 CFR 73.1(a)(1), and is capable of exploiting and challenging the licensees protective strategy, personnel, command and control, and implementing procedures.

(3) Protective strategies can be evaluated and challenged through the conduct of tactical response tabletop demonstrations.

(4) Drill and exercise controllers are trained and qualified to ensure that each controller has the requisite knowledge and experience to control and evaluate exercises.

(5) Tactical response drills and force-on-force exercises are conducted safely and in accordance with site safety plans.

(m) Scenarios.

(1) Licensees shall develop and document multiple scenarios for use in conducting quarterly tactical response drills and annual force-on-force exercises.

(2) Licensee scenarios must be designed to test and challenge any components or combination of components, of the onsite physical protection program and protective strategy.

(3) 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 and protective strategy to include, but not limited to, equipment, implementing procedures, and personnel.

D. Duty Qualification and Requalification
1. Qualification demonstration.

(a) Armed and unarmed individuals shall demonstrate the required knowledge, skills, and abilities to carry out assigned duties and responsibilities as stated in the Commission-approved security plans, licensee protective strategy, and implementing procedures.

(b) This demonstration must include written exams and hands-on performance demonstrations.

(1) Written Exams. The written exams must include those elements listed in the Commission-approved training and qualification plan and shall require a minimum score of 80 percent to demonstrate an acceptable understanding of assigned duties and responsibilities, to include the recognition of potential tampering involving both safety and security equipment and systems.

(2) Hands-on Performance Demonstrations. Armed and unarmed individuals shall demonstrate hands-on performance for 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 each individual demonstrates the knowledge, skills, and abilities required to effectively perform the task.

(3) Annual Written Exam. Armed individuals shall be administered an annual written exam that demonstrates the required knowledge, skills, and abilities to carry out assigned duties and responsibilities as an armed member of the security organization. The annual written exam must include those elements listed in the Commission-approved training and qualification plan and shall require a minimum score of 80 percent to demonstrate an acceptable understanding of assigned duties and responsibilities.

(c) Upon request by an authorized representative of the Commission, any individual assigned to perform any security-related duty or responsibility shall demonstrate the required knowledge, skills, and abilities for each assigned duty and responsibility, as stated in the Commission-approved security plans, licensee protective strategy, or implementing procedures.

2. Requalification.

(a) 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.

(b) The results of requalification must be documented by a qualified training instructor and attested by a security supervisor.

E. Weapons Training

1. General firearms training.

(a) Armed members of the security organization shall be trained and qualified in accordance with the requirements of this appendix and the Commission-approved training and qualification plan.

(b) 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 re-loading, for each assigned weapon.

(2) Firearms instructors shall be certified from a national or state recognized entity.

(3) Certification must specify the weapon or weapon type(s) for which the instructor is qualified to teach.

(4) Firearms instructors shall be recertified in accordance with the standards recognized by the certifying national or state entity, but in no case shall recertification exceed three (3) years.

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

(d) The Commission-approved training and qualification plan shall include, but is not limited to, the following areas:

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

(2) Weapons cleaning and storage.

(3) Combat firing, day and night.

(4) Safe weapons handling.

(5) Clearing, loading, unloading, and re-loading.

(6) Firing under stress.

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

(8) Target identification and engagement.

(9) Weapon malfunctions.

(10) Cover and concealment.

(11) Weapon familiarization.

(e) 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.

(f) 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.

F. Weapons Qualification and Requalification Program

1. General weapons qualification requirements.

(a) Qualification firing must be accomplished in accordance with Commission requirements and the Commission-approved

training and qualification plan for assigned weapons.

(b) The results of weapons qualification and requalification must be documented and retained as a record.

2. Tactical weapons qualification. The licensee Training and Qualification Plan must describe the firearms used, the firearms qualification program, and other tactical training required to implement the Commission-approved security plans, licensee protective strategy, and implementing procedures. Licensee developed tactical qualification and re-qualification 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.

3. Firearms qualification courses. The licensee shall conduct the following qualification courses for each weapon used.

(a) Annual daylight qualification course. Qualifying score must be an accumulated total of 70 percent with handgun and shotgun, and 80 percent with semiautomatic rifle and/or enhanced weapons, of the maximum obtainable target score.

(b) Annual night fire qualification course. Qualifying score must be an accumulated total of 70 percent with handgun and shotgun, and 80 percent with semiautomatic rifle and/or enhanced weapons, of the maximum obtainable target score.

(c) Annual tactical qualification course. Qualifying score must be an accumulated total of 80 percent of the maximum obtainable score.

4. Courses of fire.

(a) Handgun. Armed members of the security organization, assigned duties and responsibilities involving the use of 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 of the security organization, assigned duties and responsibilities involving the use 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 of the security organization, assigned duties and responsibilities involving the use 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 of the security organization, assigned duties and responsibilities involving the use 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.

5. Firearms requalification.

(a) Armed members of the security organization shall be re-qualified for each assigned weapon at least annually in accordance with Commission requirements and the Commission-approved training and qualification plan, and the results documented and retained as a record.

(b) Firearms requalification must be conducted using the courses of fire outlined in paragraphs F.2, F.3, and F.4 of this section.

G. Weapons, Personal Equipment and Maintenance

1. Weapons. The licensee shall provide armed personnel with weapons that are capable of performing the function stated in the Commission-approved security plans, licensee protective strategy, and implementing procedures.

2. Personal equipment.

(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 Commission-approved security plans, licensee protective strategy, and implementing procedures.

(b) The licensee shall provide armed security personnel, required for the effective implementation of the Commission-approved Safeguards Contingency Plan and implementing procedures, 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.

3. Maintenance.

(a) Firearms maintenance program. Each licensee shall implement a firearms maintenance and accountability program in accordance with the Commission regulations and the Commission-approved training and qualification plan. The program must include:

- (1) Semiannual test firing for accuracy and functionality.
- (2) Firearms maintenance procedures that include cleaning schedules and cleaning requirements.
- (3) Program activity documentation.
- (4) Control and accountability (weapons and ammunition).

(5) Firearm storage requirements.

(6) Armorer certification.

H. Records

1. The licensee shall retain all reports, records, or other documentation required by this appendix in accordance with the requirements of §73.55(r).

2. The licensee shall retain each individual's initial qualification record for three (3) years after termination of the individual's employment and shall retain each re-qualification record for three (3) years after it is superseded.

3. The licensee shall document data and test results from each individual's suitability, physical, and psychological qualification and shall retain this documentation as a record for three (3) years from the date of obtaining and recording these results.

I. Reviews

The licensee shall review the Commission-approved training and qualification program in accordance with the requirements of §73.55(n).

J. Definitions

Terms defined in parts 50, 70, and 73 of this chapter have the same meaning when used in this appendix.

[43 FR 37426, Aug. 23, 1978, as amended at 46 FR 2026, Jan. 8, 1981; 53 FR 405, Jan. 7, 1988; 53 FR 19261, May 27, 1988; 57 FR 33432, July 29, 1992; 57 FR 61787, Dec. 29, 1992; 59 FR 50689, Oct. 5, 1994; 74 FR 13987, Mar. 27, 2009]

APPENDIX C TO PART 73—NUCLEAR POWER PLANT SAFEGUARDS CONTINGENCY PLANS

I. SAFEGUARDS CONTINGENCY PLAN

Licensee, applicants, and certificate holders, with the exception of those who are subject to the requirements of §73.55 shall comply with the requirements of this section.

INTRODUCTION

A licensee safeguards contingency plan is a documented plan to give guidance to licensee personnel in order to accomplish specific defined objectives in the event of threats, thefts, or radiological sabotage relating to special nuclear material or nuclear facilities licensed under the Atomic Energy Act of 1954, as amended. An acceptable safeguards contingency plan must contain:

- (1) A predetermined set of decisions and actions to satisfy stated objectives;
- (2) An identification of the data, criteria, procedures, and mechanisms necessary to efficiently implement the decisions; and
- (3) A stipulation of the individual, group, or organizational entity responsible for each decision and action.

The goals of licensee safeguards contingency plans for responding to threats, thefts, and radiological sabotage are: