Implications of Security Force Federalization on Nuclear Power Plant Security

An Evaluation by the Nuclear Energy Institute

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Executive Summary

The September 11 attacks have prompted new consideration of security arrangements in the United States. They have caused us all to reconsider past efforts regarding security and to reevaluate the threats we face. The nation, reluctantly, is adapting to heightened security alerts, and airport security personnel have been federalized.

This era of heightened homeland security also has prompted the introduction of legislative proposals to federalize security forces at the nation’s nuclear facilities. This paper addresses the implications of proposals to replace an established, skilled private security force with federal guards at nuclear power plants.

Recently, airport baggage screening functions were federalized for a fixed period to correct deficiencies that could not be solved by any other means. The responsibilities and attributes of airport baggage screeners and nuclear power plant security forces, which protect the plants, are not comparable. Although they performed relatively simple and limited duties, airport security personnel were characterized as untrained, unscreened, transitory, poorly supervised, poorly regulated and low paid.

In sharp contrast, nuclear power plant security forces, many of which have law enforcement or military experience, are subject to FBI background checks, physical and psychological testing and screening and substance abuse testing as part of the hiring process. The nuclear energy industry is unique among energy industries in having a cooperative relationship with the FBI to facilitate such criminal record checks.

Nuclear plant security personnel also undergo rigorous training. Initially, they are provided seven weeks of training, including weapons proficiency and proof of marksmanship, recognition of sabotage devices and equipment, and tactical response training. Nuclear security personnel are required to requalify annually in physical and physical fitness characteristics and in job skills. They are subject to a continuous behavior observation program for substance abuse and psychological fitness. On average, retention of the security force is above 90 percent and the officers are paid an annual salary of $35,000 and provided a full benefits package.

The duties of these personnel involve both traditional industrial security and defense of the facility against a specified, military-capable land assault force. The industry’s security forces are aided in this effort by modern intrusion detection systems and barriers, biometric and other advanced recognition
technology for workers entering vital areas of the plant, internal fortifications and the most capable weaponry permitted under law.

As a part of their training, security officers participate in exercises on an annual basis. As part of the Nuclear Regulatory Commission’s federal oversight of security requirements, the industry’s private security forces must demonstrate their readiness during mock assaults conducted by federally supervised forces. No other private industrial facilities have the combination of robust physical protection, well-trained and armed security forces and emergency response capability that is found at every nuclear power plant in the United States.

All of these attributes of the industry security program are embedded in federal regulations and federal oversight. It is possible for federally employed forces to replace private security officers, but it would result in numerous and significant disadvantages that could result in diminished security at these facilities.

There are more than 5,000 privately employed security officers in the nuclear energy industry. Their compensation levels correspond to GS-9 on the federal scale or E-8 (O-2) on the military scale. Owing to the large number of the current force with prior military or local law enforcement backgrounds and the restrictions imposed by federal law and/or local laws associated with their existing pension credits, many will find federal employment less attractive. They will choose to leave this service and seek different private employment. This will result in potentially thousands of displaced workers and difficulties in recruiting individuals with comparable backgrounds and skills. In addition, hiring a federal work force of more than 5,000 officers at these pay scales may have significant impact on existing federal pay scales for current federal security forces with less sophisticated responsibilities.

Legislative proposals such as S. 1746 to federally employ security personnel at nuclear power plants would have the Nuclear Regulatory Commission manage the program. Adding more than 5,000 employees to the NRC workforce would nearly triple the size of the agency and significantly dilute its focus on safety and oversight. The hiring, training and management of this workforce also could result in a transition period of diminished efficiency and security protection. If a different federal employer is chosen, the NRC as an independent federal agency will be faced with oversight of another federal agency as well as the company that owns and/or operates the power plant. This would dilute the NRC’s safety focus as well.
Federalizing Security Force Would Weaken Coordination With Reactor Operators

Federal employment would result in a bifurcation of responsibility for activities on a privately owned site. There would be two separate chains of command for site employees—one for the security force and one for the plant operating staff. This may result in a cooperative working relationship during routine plant activity. But in the event of a threat against the facility, this division of responsibility could hinder the plant’s response.

Protecting a nuclear facility against intruders requires highly coordinated action on the part of both the reactor operating professionals and the security forces. Reactor safety could be compromised without excellent coordination. Given the variety of tactical situations that could exist under an attack, this coordination must occur in real time and under rapidly changing circumstances. Dual chains of command would make this coordination very difficult, if not impossible.

Dual chains of command also complicate efficiency of operations. The size and tactical deployment of security forces is highly dependent on physical features and the use of intrusion detection and monitoring systems. The placement and use of these systems also impacts equipment accessibility for plant operating staffs, which in turn has an impact on reactor safety during normal operation and if the facility faces an attack. Resolution of these conflicting interests to achieve high levels of both efficiency and protection will be adversely affected by a bifurcation of accountability.

Security forces at nuclear facilities have multiple responsibilities. They are responsible for industrial security and protection of the plant assets on a daily basis. But they also must demonstrate the ability to protect the facility from a defined attack scenario, as required by NRC regulation.

Undertaking both roles, a federal employer will face a broad range of new liabilities. This will impose a significant new dimension for the federal government and will become a distinct disadvantage to federal employment. Conversely, the dual responsibilities associated with private employment of a federally regulated security force is a significant advantage. It allows the private employer to provide a more diverse set of assignments for security forces. Without such diversity, the security forces would be relegated to armed sentry duties only. Maintaining a highly alert security posture is difficult without this diversity of assignments.
Other Legislative Changes Could Improve Security

Whether the security force is federally or privately employed, there are necessary and beneficial legislative changes directly impacting the effectiveness of the security force that the industry and the Nuclear Regulatory Commission recommend. Without new legislation, some security forces are restricted in the use of deadly force, and state/local laws limit the weapons that may be deployed on private property. Federal legislation is needed to remove these constraints and make security programs consistent nationwide.

Clearly, private employees provide excellent nuclear power plant security. Routine security could be accomplished by federal employees, but entails significant difficulties that, in a practical sense, would result in diminished safety, security and efficiency both during a transition period and in the long run. This paper does not address the protection of nuclear facilities and other parts of the national critical infrastructure from broader acts of war. The industry supports a broad analysis to determine the threats we now face and develop a seamless defense that integrates the capabilities of our industry, state and local governments, and the federal government, including the CIA, FBI, FEMA and the military. Broader acts of war and the relative risks of the facilities should be considered as part of this comprehensive analysis.

Nuclear power plants are the most robust physical structures in the industrial sector and are protected by highly skilled, well-armed paramilitary forces. The industry has been at the highest state of alert since September 11 and is reviewing its security programs to incorporate lessons learned from the attacks. The NRC also is conducting a “top-to-bottom” review of the federal regulations that apply to nuclear plant security and the security. More than 20 of the nation’s governors, state security directors and members of Congress who have toured nuclear power facilities since September 11 have commented on the outstanding security programs.

The nuclear energy industry has always had an uncompromising commitment to safety and security. The industry remains committed to providing the best possible security for workers at our plants, their families and residents of 31 states who live near the nation’s nuclear power plants. The industry will work with the Bush administration and the Congress to review and enhance our security as may be required in light of recent events. However, a transition from private to federal security forces at nuclear power plants is an ill-conceived and misguided proposal that provides no enhanced protection of the public or the nuclear power facilities that provide electricity for one of every five American homes and businesses.
Introduction

The Nuclear Regulatory Commission sets rigorous standards for nuclear power plant security measures and security forces. These security forces represent an elite group of individuals—carefully screened before hiring, trained both in general and facility-specific security knowledge, and required to requalify every year.

Security begins with the hiring process. Applicants for security officer positions must undergo detailed evaluations, including FBI background checks and evaluations of their psychological and physical fitness. Those who are hired are subject to ongoing behavior observation and drug and alcohol screening. They also are trained regularly and evaluated in “anti-terrorist” exercises.

A clear chain of command is necessary for effective security at a nuclear power plant because of the close interrelationship between the security force and plant operators. In the event of a threat, plant operators carry out plant emergency operations and procedures, while the security force protects the equipment that is needed to maintain reactor safety. Close coordination between the security force and plant operators is best achieved when both are integrated under a single management structure. Federalization would undercut this.

A Review of Security Issues

Since September 11, the nuclear energy industry has reviewed nuclear plant security requirements and assessed the advantages and disadvantages of federalizing security professionals. This review included:

1. policy and implementation issues associated with federalizing nuclear power plant security forces

2. attributes of an effective security force, how it might be affected by federalization, and the related NRC regulatory requirements

3. characteristics of the existing nuclear plant security force, regulated under Title 10 of the Code of Federal Regulations (CFR) Part 73

4. industry-supported security improvements that should be implemented.

This paper discusses the industry’s findings and conclusions.
Policy Implications

There are numerous negative policy and safety implications of legislation introduced by Senator Harry Reid (S. 1746) and the companion bill (H.R. 3382) in the House of Representatives introduced by Congressman Ed Markey. Fundamentally, the legislation would weaken security at nuclear power plants by unnecessarily federalizing nuclear power plant security. The proposed legislation also would have a profound impact on the nation’s energy diversity, environmental well-being, economic security and the national common defense. Those impacts include:

- **Diminishing and disrupting plant security.** Effective security, including a successful response to a terrorist threat at a nuclear power plant, is highly dependent upon coordinated efforts by security forces and power plant operators. By replacing the proven, effective security forces already in place at nuclear plants, the Reid-Markey proposals bifurcate management responsibilities for these functions. Doing so will lessen the industry's ability to fully protect public health and safety.

- **Creating one of the largest law enforcement and security agencies in the country.** The Reid-Markey legislation would require the NRC to hire an estimated 5,000 additional security employees and would make the NRC one of the largest law enforcement/security agencies in the country—larger than the Secret Service or the Bureau of Alcohol, Tobacco and Firearms. By doubling or tripling the workforce of the NRC, the legislation could change the agency’s primary mission from that of protecting public health and safety to providing for the general defense of the country.

- **Reducing the stringent screening requirements for security personnel.** Requiring security forces at nuclear facilities to be federal employees likely would reduce the strict hiring standards, extensive background checks, training and ongoing performance reviews already in place for private security forces. In fact, many Department of Energy nuclear facilities have private security forces, as do federally operated nuclear plants, such as the Tennessee Valley Authority reactors. The qualifications outlined in the Reid-Markey legislation are less stringent than those already in place in the industry.

- **Squandering vital experience.** Replacing private nuclear plant security forces with federal personnel with little or no experience at nuclear power facilities would set aside years of on-the-job experience gained through countless security exercises and NRC-managed drills. Moreover, such a transition raises serious contractual issues regarding existing security forces.
Misallocating vital and limited federal security resources. Nuclear power plants are already among the most secure private facilities in the country, while other components of the nation’s critical infrastructure may require greater protection. Only through a comprehensive review of critical infrastructure security needs can policymakers balance the available resources with the wide spectrum of legitimate security needs. Coordinating the efforts of federal agencies to conduct a comprehensive threat assessment will avoid having regulatory and security decisions made in a political vacuum without necessary guidance from government experts in security and intelligence gathering.

Blurring the line between providing national defense and maintaining industrial security. By placing the burden of providing for the common defense solely upon consumers of nuclear energy, the Reid-Markey proposal undermines both national security and energy diversity.

Reducing economic stability and environmental well-being. Nuclear power provides economic stability to our nation’s consumers and industries by providing a reliable source of electricity at a low cost. By discouraging its use, the legislation erodes that stability and constrains an essential source of electricity that does not produce greenhouse gases or other air pollutants.

Breaching the line between civilian law enforcement and military force. By placing the command of a military-like force—consisting of more than 5,000 personnel—in the hands of an independent U.S. agency, the legislation obfuscates the clear historical line between civilian and military responsibilities.
Nuclear Power Plant Security Is Effective Today

The federal requirements for security at our nation’s nuclear power facilities are designed to provide a high assurance that the nuclear power plants are protected from radiological sabotage. Rigorous requirements, coupled with industry commitment and strong NRC oversight, have resulted in well-designed paramilitary security programs at our nation’s nuclear plants. These plants have multi-layered security programs that effectively combine engineered physical security features, administrative controls, and a highly trained and equipped security response force.

Employment requirements for security force personnel are quite extensive, with specific requirements for employment suitability, medical qualifications, physiological requirements and physical fitness.

They are also very specific and detailed with respect to training and qualification. Security officers are required to complete training in more than 70 security-related areas, including weapons training, tactical response force operations, use of deadly force, and the searching of vehicles, packages and personnel. Security force personnel must requalify every year. In addition to the performance requirements, security officers must re-qualify each year on the employment suitability, physical, psychological and physical fitness requirements.

The security force weapons and equipment regulations are also extensive and formidable. Armed security personnel are required to be proficient with semiautomatic rifles, shotguns and semiautomatic pistols or revolvers. They also are required to have available tactical response equipment such as tactical helmets, body armor, gas masks, tear gas, night vision equipment and portable radios.

The NRC’s security regulations specifically require that each company operate, develop and maintain a well-designed security response plan for its facility. The response plans must be reviewed and approved by the NRC prior to being implemented. Finally as part of the response plan, the security force is required to develop a strong liaison with local law enforcement to ensure effective coordination of response.

NRC security requirements have resulted in the development of highly professional security programs and security forces at our nation’s nuclear power plants:
1. The nuclear energy industry employs more than 5,000 trained nuclear security professionals.

2. On average, each facility employs 80 nuclear security officers dedicated to protecting the nuclear facility against the threat of radiological sabotage.

3. Approximately 67 percent of the industry’s security officers have prior military, law enforcement or industrial security experience.

4. More than 17 percent have a college degree.

5. Nuclear security officers are well-paid professionals, with an average annual salary of $35,000.

6. Job satisfaction for the security officers is extremely high, as demonstrated by a retention rate of 90 percent.

7. Training for a new security officer is extensive. On average, a nuclear security officer receives 270 hours of training prior to being deployed to the security force.

8. The industry has a strong commitment to continuing training and drills for security officers. On average, the nuclear security officer will spend approximately 60 hours each year completing requalification training, with approximately 30 hours spent on anti-terrorist tactical training exercises.

9. Security officers also participate in considerable training activities with local law enforcement agencies and emergency response agencies. At least annually, and in many cases more often, familiarization and coordination training is conducted with local law enforcement personnel and such organizations as fire departments and emergency medical organizations.

10. Physical fitness is an important requirement for security force officers. Each facility’s security program includes a physical fitness regime that effectively tests the cardiovascular fitness and endurance levels of security force personnel.

11. In addition to security program duties, nuclear security officers also perform a number of other critical safety functions for the plant. These include plant fire brigade, plant fire watch patrols, emergency medical technicians for first aid responses, and designated emergency response plan actions.
Industry Supports Security Changes

The nuclear energy industry took immediate actions to enhance security in response to the events of September 11. However, federal legislation is required to make improvements in some areas, such as the authority to use automatic weapons where state laws preclude their use by nuclear security officers.

In fact, the industry has supported the NRC’s repeated requests to Congress to enhance security, long before the attacks of September 11. Combining these long-requested authorities with additional actions suggested by recent security reviews, the nuclear industry has compiled the following list of industry-supported security improvements.

The nuclear energy industry supports legislation that would contain the following elements:

1. The president, or his designee, should conduct a comprehensive review of nuclear power plant security, including consideration of the entire spectrum of possible terrorist threats.

2. The NRC should determine if changes are needed in the criteria against which nuclear plant security forces must successfully defend the facility—which is called the plant’s design basis threat. Any revisions to the threat against which plant security forces must defend should be based on a reasonable expectation of the security responsibility of the industry. As such, the review of possible terrorist threats against nuclear plants should determine whether the defense against such a threat should be the responsibility of the federal government or the company.

3. The NRC should be granted the authority to permit plant security forces to carry and use weapons commensurate with the plant’s responsibilities to respond to the design basis threat and to permit plant security forces to make arrests without warrants if and as necessary.

4. A nuclear plant’s security forces should be granted the authority to use deadly force, if necessary, to protect the
plant. This authority currently is subject to varying interpretations of state and federal law.

5. Federal law should be expanded to prohibit the unauthorized introduction of firearms into facilities licensed by the NRC and to prohibit the sabotage of NRC-licensed or NRC-certified facilities.

6. Communications between nuclear plants, law enforcement agencies, and, when appropriate, armed services (including the National Guard) should be reinforced, and consideration should be given to placing secure communications equipment at each facility.

The costs of additional security—such as National Guard personnel and state police, which have been and may be necessary to respond to terrorist threats that are clearly acts of war—should be the responsibility of the federal government or the states.
Attributes of Effective Security

Which would provide more effective security at a nuclear power plant—a security force that is federally staffed or one that is federally regulated? Is there a significant difference between the two approaches?

To answer these questions, the nuclear energy industry analyzed security force effectiveness and identified 10 attributes of an effective security officer. These qualities are similar to those examined by the NRC in 1976 when it determined that private security forces would be a more effective means of safeguarding nuclear power plants than federal guards. The attributes were evaluated to determine whether a federal security force or a federally regulated force of private security officers would have an advantage for each attribute.

The results indicate areas where plant safety would be disadvantaged by the use of federal officers. Of these, the most important is the introduction of a second chain of command. Who makes decisions during an attack, and how well the security force is coordinated with other activities on site, is extremely important in determining security force effectiveness. Two chains of command, one federal and the other corporate, will significantly complicate coordination. Plant response must be fully integrated during a crisis.

The industry’s review raised other issues related to federalization. A change to federally staffed security would disrupt existing security during the implementation period. This disruption could compromise nuclear plants’ ability to respond to threats at a time when the threats are believed to be greater than usual.

General Observations

- In order to respond to a new assessment of the post-September 11 terrorist threats, federal legislation may be required under either approach.
- The same security standards should be set under either approach. Regulatory changes would be required in either case. NRC regulations contain stringent security standards that the industry must meet.
- Integrating federal security officers into normal plant operations would be essential for smooth day-to-day operations—but such integration would present major challenges.
A dual chain of command for security forces and plant operations personnel would make effective crisis response more difficult.

A transition to federal security employees at nuclear power plants would cause major disruptions in security force stability for several years, displace many of the thousands of current security officers, and potentially undermine security effectiveness at this time of heightened alert.

Detailed Discussion of Security Attributes

1. Physical and Mental Fitness

Physical and mental fitness standards must be applied to applicants for security positions and to security personnel already employed at the facility. Security officers must meet stringent physical standards, be free of psychological disorders and substance abuse problems, and must undergo criminal background checks.

These standards should be appropriate for the expected duties. Thus, standards for a checkpoint officer may differ from those of an armed responder. In both cases, standards would have to be set by federal regulation. There are no generic federal standards that would automatically apply to a federal guard force. Moreover, there is concern that the myriad of civil service requirements may be an impediment to maintaining an effective security force and achieving standards as high as those now in the NRC’s regulations.

Existing NRC regulations require:

*Physical Qualifications* — Prior to employment, or assignment to the security organization, an individual must meet the following physical qualification criteria:

1. A nuclear security officer must have no physical weaknesses or abnormalities that would adversely affect his/her performance of assigned security job duties.

2. The officer must successfully pass a physical examination administered by a licensed physician.
3. Armed personnel must meet the following additional physical requirements:

a) Vision: Distant visual acuity in each eye shall be correctable to 20/30 in the better eye and 20/40 in the other eye with eyeglasses or contact lenses. Field of vision must be at least 70 horizontal meridians in each eye. The ability to distinguish red, green and yellow is required. Loss of vision in one eye is disqualifying. Glaucoma is disqualifying, unless controlled by acceptable medical or surgical means.

b) Hearing: 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 hearing loss exceeding 40 decibels at any one frequency.

c) Diseases: Individuals must have no established medical history or medical diagnosis of epilepsy or diabetes, or any other disease that would adversely affect his or her ability to perform assigned duties.

d) Addiction: Individuals must have no established medical history or medical diagnosis of habitual alcoholism or drug addiction.

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

Mental Qualifications — Prior to employment, or assignment to the security organization, an individual must meet the following mental qualification criteria:

1. Individuals whose security tasks and job duties are directly associated with the effective implementation of physical security and contingency plans must demonstrate mental alertness and the capability to exercise good judgment, implement instructions, assimilate assigned security tasks, and accurately communicate as required by their job duties.

2. In addition, armed officers and central alarm station operators must have no emotional instability that would interfere with the effective performance of assigned security job duties. This determination must be made by a licensed psychologist, psychiatrist, physician or other person professionally trained to identify emotional instability.

3. The company must arrange for continuous observation of security personnel and for appropriate corrective measures by supervisors for
indications of emotional instability of individuals in the course of performing assigned security job duties.

Physical Fitness Qualifications — Security force members must demonstrate physical fitness for assigned security job duties by performing a practical physical exercise program within a specific time period as described in the licensee training and qualifications plan. This program must consider job-related functions such as strenuous activity, physical exertion, levels of stress and exposure to the elements as they pertain to security duties.

Requalification — At least every 12 months, security officers are required to demonstrate that they continue to meet the physical, mental and physical fitness requirements.

2. SECURITY KNOWLEDGE

Certain general knowledge of security procedures and skills is important, no matter what type of facility the security officer is protecting. This includes use of equipment and weapons, general tactics, general procedures, self-defense and knowledge of legal authority.

There may be a benefit to standardizing training through a central academy or use of centrally generated training guides and material. The federal government could do this, but the nuclear energy industry already has a proven track record for developing standardized training programs—notably for reactor operator training.

For a specific site, a security officer needs substantial local knowledge to be effective. This includes detailed knowledge of procedures, strategies and the facility’s physical layout. At a nuclear power plant, security officers also must understand plant operations and procedures, radiation protection and safety procedures. This knowledge is site-specific and precludes moving officers from one facility to another without extensive retraining.

Although general security and facility-specific training is integrated into an on-site training program, facility-specific training cannot be effectively integrated into a central security academy program.

Existing NRC regulations require:

Training Requirements — Before performing security-related tasks or duties, an individual must be trained and must demonstrate that he or she can perform these tasks and duties in accordance with the licensee’s documented training and qualifications plan. This training must include knowledge of the threat conditions that must be deterred. These include:
1. a determined violent external assault, attack by stealth, or deceptive actions, by several persons

2. well-trained (including military training and skills), dedicated individuals

3. inside assistance, which may include a knowledgeable individual who attempts to participate in a passive role (e.g., providing information), an active role (e.g., facilitating entrance and exit, disabling alarms and communications, participating in violent attack), or both

4. weapons, up to and including hand-held automatic weapons, equipped with silencers and having long range accuracy

5. hand-carried equipment, including incapacitating agents and explosives for use as tools of entry or for otherwise destroying reactor, or features of the safeguards system

6. a four-wheel drive vehicle for transporting personnel and their hand-carried equipment or explosives.

Qualification Requirements — An individual must be qualified in accordance with the company’s NRC-approved training and qualifications plan before being assigned to perform security-related duties.

1. Educational development: Possess a high school diploma or pass an equivalent performance examination.

2. Criminal history: Have no criminal history that reflects on his or her reliability.

3. Age: An armed officer must be 21 years of age or older.

Security Knowledge, Skills and Abilities — Each individual assigned to perform the security-related task identified in the licensee physical security or contingency plan must demonstrate his or her capability in the following areas:

1. NRC requirements and guidance for physical security at nuclear facilities

2. nuclear security officer’s duties and responsibilities

3. physical security system design and operation

4. security access control system design and operation

5. vehicle, package and personnel contraband search process
6. self defense and weapons use
7. adversary force capabilities, tactics, motivation and objectives
8. tactical response program design and operations
9. security contingency event response program

Requalification — Security personnel must requalify at least every 12 months to perform assigned security tasks and duties for both normal and contingency operations—which include radiological safety, operating practices, quality assurance, industrial safety and fire protection.

3. Alertness, Motivation and Adherence to Requirements

Maintaining an alert security force capable of supporting long periods of routine activity without any hostile activity is essential. Techniques used to maintain alertness include the integration of training and drills, rotation of assignments, and the introduction of varied activity into the security officer’s schedule. Officers need to be involved in day-to-day activity without detracting from their ability to respond to a threat. Involving a federal officer force in routine plant activities would be a challenge. Yet it is very difficult to maintain a highly trained, motivated force whose only responsibility is to sit in a fixed position and respond when there is a terrorist threat.

Motivation is a willingness to endure hardships in the performance of duty, to use force when necessary, and even to risk one’s life. Close integration of the security force in plant operations helps to establish those personal relations with other plant workers that are so important in providing continuous motivation. Under ideal conditions, the security officer is protecting more than a physical structure—he is protecting a closely-knit workforce that operates the facility. Involvement with those he is protecting at the plant and within the local community is a significant motivating factor.

Adherence to requirements is the willingness to enforce unpopular rules and procedures. This is a complex issue that must be fostered by effective management methods. The nuclear energy industry’s strong safety culture fosters strict compliance with rules and procedures.

4. Legal Authority: Weapons, Detention, Search and Use of Force

Security officers must have clear authority under the law to detain and search intruders and to use deadly force, if necessary, to protect public health and safety. They also must be equipped with, and authorized to use, weapons and equipment that are adequate for the threat and defensive strategy being used.
State laws vary in what they permit. In most states, civilian security forces are restricted in the weapons they can use and in their authority to detain and search intruders. These laws would apply equally to federally regulated and federally employed security officers. Regardless of whether nuclear power plant security is federalized, legislation is needed to establish the necessary authority in this area.

Existing NRC regulations require:

**Weapons Training**

Security officers who are armed to perform assigned security duties must be trained in accordance with the licensee’s weapons training program. Security officers must be proficient in the use of assigned weapon(s) and shall meet prescribed standards in the following areas:

1. mechanical assembly, disassembly, range penetration capability of weapon, and bull’s-eye 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. firing under stress
10. zeroing assigned weapon(s)

**Weapons Qualification and Re-qualification Program**

Prior to working as an armed security officer, an individual must qualify on each weapon used at the facility. In addition, each individual must be re-qualify at least every 12 months.

**Handgun** — Armed security officers must qualify with a revolver or semiautomatic pistol firing a nationally recognized course of fire. The qualifying score shall be an accumulated total of 70 percent of the maximum obtainable score.

**Semiautomatic Rifle** — Security officers assigned to use semiautomatic rifle must qualify with a semiautomatic rifle by firing a nationally recognized
course of fire. The qualifying score shall be an accumulated total of 80 percent of the maximum obtainable score.

*Shotgun* — Security officers assigned to use the shotgun must qualify by firing 15 yards from the hip and 25 yards from the shoulder.

*Requalification* — Individuals shall requalify on weapons at least every 12 months.

**Security Officer Weapons and Response Equipment**

*Semiautomatic Rifles*

*Shotguns*

*Semiautomatic pistols or revolvers*

*Ammunition* — For each assigned weapon as appropriate to the individual's assigned contingency security job duties.

5. **SECURITY WORKFORCE STABILITY**

The 90 percent retention rate for the industry’s security forces is an excellent indication of the stability of the current workforce. A transition to a federalized workforce would not improve this outstanding retention rate.

6. **PHYSICAL BARRIERS AND OTHER PROTECTION**

Physical barriers to entry, electronic aids, plant layout, defensive positions, and personnel protective equipment all enhance security force effectiveness. Although these are major factors in effective security of a facility, they are not related to whether guards are private or federalized. However, these physical features affect the number of armed responders needed. Increased use of physical features may reduce the number of responders needed for a given threat but may impact plant operations. There are frequent conflicts between the needs for security and free access of the plant for safe operations.

Existing NRC regulations require:

*Physical Protection* — Vehicle barriers and/or other physical restrictions must be provided as necessary to ensure that the protected area of the plant cannot be breached by a direct vehicular assault or by detonation of a vehicle carrying a bomb. All vehicles, personnel and material entering the protected area must first be thoroughly inspected by security officers to ensure that no weapons, explosive or other such items are brought onto the plant site.
Physical access to the protected area of the plant is controlled through the use of physical barriers, intrusion detection equipment, closed circuit surveillance equipment, a designated isolation zone and exterior lighting. Physical access to the inner areas of the plant where vital plant equipment also is controlled through the use of physical barriers, locked and alarmed doors, and card-reader access control systems. The barriers are substantial enough to effectively delay entry in order for effective armed response by plant security forces.

Within the protected zone, access to all vital areas of the plant must be further protected. This access may be controlled by a security officer or provided by computer-controlled “key-card” access systems. Plant employees must have a documented need prior to gaining access to each vital area.

Physical security plans must document the defensive positions and delaying barriers used to enhance security force effectiveness.

**Personnel Protective Equipment** — The following personal equipment must be readily available for individuals assigned to security duties:

1. combat helmet
2. body armor (bullet-resistant vest)
3. full-face gas mask
4. flashlights and batteries
5. baton
6. handcuffs
7. ammunition/equipment belt
8. binoculars
9. night-vision aids, i.e., hand-fired illumination flares or equivalent
10. tear gas or other non-lethal gas
11. duress alarms
12. two-way portable radios.

**7. Deterrent Image**

The industry’s security programs combine strong physical security features with highly trained paramilitary security professionals. Both features are
highly visible and provide a strong deterrent to anyone considering attacking a nuclear power plant.

8. **Compatibility With Normal Operations**

Nuclear power plant security forces are extremely well integrated into the normal day-to-day operations of the facility. The security officers and staff work closely with reactor operators and other plant staff to help ensure the safe and efficient operation of the facilities. For instance, during plant maintenance and refueling outages, plant management must be able to increase the security force to clear additional worker and vehicles into the plant protected area. They must be able to balance the extra cost of those security assets against the increase in productivity associated with enabling more rapid access to the facility. In addition, basic industrial security must be integrated into the security force responsibility on a redundant force is needed.

9. **Liaison With Local Officials**

Close liaison with local officials is an integral provision of the security regulations and, in fact, has been implemented effectively by the industry. Efforts undertaken since September 11 are an excellent example of the effective working relationships that exist among industry security forces and their counterparts in local law enforcement.

10. **Chain of Command and Control During Crisis**

Security forces also are extremely well integrated into the emergency operations of the nuclear facilities. During plant emergencies, particularly security situations, security forces work very closely with the plant operating staff to help ensure the safe operation and, if required, shutdown of the reactor.
Concentric Rings of Security

Nuclear power plant security is a multifaceted approach that can best be thought of as concentric rings, with security becoming tighter as one reaches the center.

The first layer of security is found at the “owner-controlled area.” This area includes all property associated with the plant. Electric companies generally patrol and control vehicle access to this area.

The second layer of security is in the “protected area.” Access to this enclosed area is strictly controlled. Unescorted access requires a computer-coded badge issued by security personnel. Fences, barbed wire, microwave detection equipment, cameras and other detection devices prevent unauthorized entry.

The third layer of security, and most heavily controlled area of the plant, is the “vital area.” This area contains the equipment essential for operating the plant safely and successfully shutting it down in case of an unusual event. Security contingency plans are designed to protect this area of the plant.
Multiple Layers of Reactor Safety

The Atomic Energy Act and NRC’s regulations are the basis for the industry’s approach to security. These guidelines and the industry’s commitment to safety ensure that nuclear power plants are operated in a manner that protects public health and safety. Licenses issued by the NRC contain technical specifications that establish safety limits for plant operation.

The plant designs and physical features are the first line of defense. By design, our plants provide multiple concrete and steel barriers that protect vital safety systems and the reactor fuel from sabotage. These barriers begin with the fuel-rod casing, or “cladding,” itself, and progresses outward from the fuel to include several-inch-thick steel that makes up the reactor vessel, a bioshield that is composed of steel and leaded concrete, covered by a steel containment vessel, and capped by a several-foot-thick shield building wall.

Nuclear power plants also incorporate systems that are designed to prevent the type of accident that could cause the release of radioactive material into the environment. These include operating and safety systems that ensure full redundancy for necessary supporting equipment, onsite and offsite power sources, redundant sources of emergency power, with additional redundancy in the emergency reactor cooling and shutdown systems.
Conclusion: No Clear Advantage to Federalizing Security Forces

The Nuclear Energy Institute believes that the continued use of private security forces that meet strict federal standards provides greater security at nuclear power plants than replacing these established, well-trained forces with teams of federal officers, as contemplated by legislation proposed in both the U.S. Senate and House of Representatives.

Force effectiveness depends upon personal qualities and actions that are prescribed by standards, regulations or policies essentially independent of the officer’s federal or private status. For example, NRC regulations equally applicable to federal or private officers specify physical and mental requirements, criminal background checks, training, weaponry and duties. Based on established effectiveness criteria, there is no clear advantage to a federal security force. But there are significant disadvantages.

NEI’s findings confirm the results of the original NRC study (NUREG 0015, 1976) used to support rulemaking that established the existing use of federally regulated private nuclear security forces.

Security is enhanced by stability. The current officer forces are well trained and familiar with existing plant-specific security plans, the facility, local law enforcement agencies, the local geography and the local community. Federalizing the nuclear security officers likely would result in major changes to the current security force. This would severely disrupt the current organizational structure and effectiveness of the force. New security officers would require extensive training and orientation. This is particularly imprudent in a time of heightened homeland security.

Opportunities for Improving Security Through Legislation

Notwithstanding the strength of the nuclear industry’s security program, the industry is examining how security programs at nuclear power plants can be augmented in the aftermath of the September 11 events. The industry supports a number of security enhancements that could be achieved through legislation, such as granting nuclear plant security officers the authority to detain and search intruders and to use deadly force when necessary.