



NUCLEAR ENERGY INSTITUTE

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Mr. Roy P. Zimmerman  
Director  
Office of Nuclear Security and Incident Response  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

**SUBJECT:** Technical Reports on Template for FSAR Section 13.6, *Physical Security*; and the Generic Security Inspections, Tests, Analyses and Acceptance Criteria for New Plants

**PROJECT NUMBER: 689**

Dear Mr. Zimmerman:

In support of combined license application preparations, the Nuclear Energy Institute (NEI) is submitting two technical reports for NRC review and endorsement:

- A template for Section 13.6 of a Final Safety Analyses Report (FSAR) for a combined license application (Enclosure 1), and
- Generic Inspections, Tests, Analyses and Acceptance Criteria (ITAAC) for Physical Security (Enclosure 2).


The FSAR section for Physical Security and the Generic Security ITAAC are important documents for the design, licensing and construction of new plants. The industry has discussed these two new plant topics with the NRC staff. The Section 13.6 template and the Generic Security ITAAC have been developed based on insights from these meetings.

These generic documents are being used by combined license applicants as guidance in preparing combined license applications and technical reports that will be submitted in 2007. As a result, we request NRC endorsement by the end of November 2006. We understand that, following the NRC review, the NRC will either issue a Safety Evaluation Report (SER) or a letter documenting the NRC's conclusions. This will enable the template and ITAAC report to be incorporated by reference into a new plant combined license application.

Mr. Roy P. Zimmerman  
August 18, 2006  
Page 2

If you have any questions, please contact Jim Fisicaro at (202) 739-8018; [jjf@nei.org](mailto:jjf@nei.org)  
or me.

Sincerely,



Adrian P. Heymer

Enclosures

c: Mr. Glenn M. Tracy, NRC  
Mr. Scott Morris, NRC  
Mr. Douglas Huyck, NRC  
Document Control Desk

## **FSAR 13.6**

### **13.6 PHYSICAL SECURITY**

The physical security program consists of the Security Plan, Training and Qualification Plan and Safeguards Contingency Plan and will be implemented prior to initial fuel arriving on-site. The program satisfies the regulatory requirements for fixed commercial nuclear power plants set forth in 10 CFR 50.34 (c) and (d), 10 CFR 52.79, 10 CFR 26 and 10 CFR 73. Details of the program are included in the plans and are classified as Safeguards Information in accordance with 10 CFR 73.21. The program includes descriptions of and provisions for the following:

- Security organization
- Physical barriers for vehicles and personnel
- Bullet resisting barriers
- Access control for vehicles and personnel
- Fitness for Duty Program
- Searches of personnel, vehicles and packages
- Intrusion alarm systems and detecting unauthorized intrusions
- Security power supply system
- Provisions for monitoring the access to vital equipment
- Selection of security personnel
- Security communications systems
- Testing and maintenance
- Law enforcement assistance
- Training of security personnel
- Response to contingencies
- Security assessment

#### **13.6.1 Security Organization**

The security organization provides a management infrastructure to protect the facility against radiological sabotage. The organization includes a management system to support the development and maintenance of security plans and procedures for the effective implementation of the physical security program. The organization is based on a command structure with implementing procedures and is staffed by appropriately trained and equipped security personnel for the protection against threats as described in the Design Basis Threat (DBT).

#### **13.6.2 Physical Barriers for Vehicles and Personnel**

Physical barriers are installed and designed to protect and control access to the facility. Vehicle barrier systems are installed to prevent the entry of vehicles carrying explosives as defined in the DBT beyond the safe standoff. A protected area barrier is installed to prevent access of unauthorized personnel into the protected area. Personnel access of authorized individuals to the protected area is permitted through designated personnel access portals through the barrier after positive identification is verified. Vital area access is controlled by allowing only authorized personnel and by requiring passage through at least two physical barriers. Access

points to vital areas are locked and alarmed with activated intrusion detection systems.

### **13.6.3 Bullet Resisting Barriers**

The doors, walls, floor and ceiling of the main control room and the continuously manned central alarm station are designed to be bullet resisting in accordance with applicable design criteria.

### **13.6.4 Access Control for Vehicles and Personnel**

An access authorization program provides high assurance that individuals who are permitted unescorted access to the protected area are trustworthy and reliable. All individuals allowed unescorted access to the protected area are issued a photo identification badge, which is displayed while inside the protected area. Access to the protected area is controlled through designated portals to ensure only authorized vehicles, personnel and packages are allowed entry. Vital area access is controlled to permit access to authorized personnel. Vehicle passage through the vehicle barrier system is controlled through designated access points to ensure only authorized vehicles are allowed entry.

### **13.6.5 Fitness for Duty Program**

A fitness for duty program in accordance with 10 CFR 26 provides reasonable assurance that personnel permitted unescorted access to protected and vital areas are not mentally or physically impaired to perform their assigned duties.

### **13.6.6 Searches of Personnel, Vehicles and Packages**

Prior to entry into the protected area personnel, vehicles, packages and materials are searched for firearms, explosives and incendiary devices. This may be accomplished by physical searches and/or the use of detection devices such as metal detectors, explosive detectors and x-ray machines. A secondary physical search is conducted if there is reason to believe an individual is attempting to introduce firearms, explosives or incendiary devices into the protected area or whenever search equipment is out of service.

### **13.6.7 Intrusion Alarm Systems and Detecting Unauthorized Intrusions**

Isolation zones and exterior areas of the protected area are provided with sufficient illumination to permit the observation of these areas during hours of darkness. Surveillance is accomplished by security personnel or surveillance technology. Intrusion alarm equipment detects penetration or attempted penetration of the protected area and vital area barriers. Intrusion detection alarms annunciate in a continuously manned central alarm station and in another continuously manned station so that a single act can not remove the capability of calling for assistance or responding to an intrusion alarm.

### **13.6.8 Security Power Supply System**

Site security systems are powered from a reliable power supply meeting the requirements of IEEE-692, “Standard Criteria for Security Systems for Nuclear Power Generating Stations.” Security equipment that supports critical monitoring functions, such as intrusion detection, alarm assessment and the security communication system, receives power from the security power supply system. The security power supply system is capable of sustaining operation for a minimum of 24 hours.

### **13.6.9 Provisions for Monitoring the Access to Vital Equipment**

An access authorization system is established to limit access to vital areas to only those individuals who require access to perform their duties. The access list is validated at least once every thirty-one days to confirm a continued need for access to vital areas.

### **13.6.10 Selection of Security Personnel**

Prior to employment or assignment to the security organization, personnel must meet minimum requirements with regard to age and education and have no felony convictions that involve the use of a weapon or that would reflect adversely on the individual’s reliability. Personnel assigned to the security organization are screened to ensure they have no physical weaknesses or abnormalities that would adversely affect their performance of security duties.

### **13.6.11 Security Communications Systems**

Communications systems are established within the security organization to ensure the ability of security personnel to communicate with an individual in each continuously manned alarm station. The alarm stations have the ability to communicate with law enforcement agencies to summon assistance. Non-portable communications equipment can be powered from the security power supply system so that it remains operable in the event of the loss of normal power.

### **13.6.12 Testing and Maintenance**

Security systems are maintained by trained personnel to ensure proper functionality and operability. Intrusion detection alarms and communications equipment are tested at an appropriate frequency to verify continued operability and performance effectiveness.

### **13.6.13 Law Enforcement Assistance**

Liaison is established and maintained with local law enforcement agencies to provide assistance to the station when required during a security incident.

### **13.6.14 Training of Security Personnel**

Prior to initial fuel arriving on-site and assignment to security duties, security personnel are trained and qualified in accordance with the Training and Qualification Plan. The Training and Qualification Plan identifies critical tasks applicable to each security position. Through qualification in the applicable critical tasks, security personnel demonstrate the required knowledge, skills and abilities

to perform their assigned position. There is also an annual requalification on selected critical skills.

### **13.6.15 Response to Contingencies**

The Safeguards Contingency Plan provides guidance on responding to contingencies and threats as defined in the DBT. The plan provides a framework of predetermined responses to various safeguards contingencies with the objective of organizing resources to facilitate a coordinated response. A protective strategy that integrates responses of the security force, plant operations personnel and law enforcement agencies is established to prevent radiological sabotage.

### **13.6.16 Security Assessment**

A Security Assessment Report covers target set analysis, the plant protective measures and strategy to address the elements of the DBT and evaluation of the safety/security interface. This report is categorized as Safeguards Information in accordance with 10 CFR 73.21.

Generic Security ITAAC  
Non-System Based Design Description & ITAAC

<b>Table 3 . 6 (cont. Inspections, Tests, Analyses and Acceptance Criteria</b>		
<b>Design Commitment</b>	<b>Inspections, Tests, Analyses</b>	<b>Acceptance Criteria</b>
The walls, doors, ceiling and floors in the main control room and Central Alarm Station are bullet-resistant to a UL level 4 round.	Type test, analysis or a combination of type test and analysis will be performed for the walls, doors, ceilings and floors in the main control room and Central Alarm Station.	A report exists and concludes that the walls, doors, ceilings and floors in the main control room and Central Alarm Station are bullet-resistant to a UL level 4 round.
Central Alarm Station and main control room are defined as vital areas.	An inspection of the as-built central alarm station and main control room will be performed.	Access to the Central Alarm Station and main control room is through at least two security hardened barriers and an intrusion alarm system.
Secondary security power supply system for alarm annunciator equipment and non-portable communications equipment is located within a vital area.	An inspection of the as-built location of the secondary security power supply for alarm annunciator equipment and non-portable communications equipment will be performed.	Access to the secondary security power supply for alarm annunciator equipment and non-portable communications equipment is through an intrusion detection system and at least two security hardened barriers.
Unoccupied vital areas are locked and alarmed with activated intrusion detection systems that annunciate in the Central and Secondary Alarm Stations upon intrusion into a vital area.	A test of the as-built unoccupied vital area door alarms to the Central and Secondary Alarm Stations will be performed.	The unoccupied vital area doors are locked. The intrusion detection systems annunciate in the Central and Secondary Alarm Stations upon intrusion into each unoccupied vital area.
The locks used for the protection of the vital areas are manipulative-resistant.	Type test, analysis or a combination of type test and analysis will be performed for the locks used in the protection of the vital areas.	A report exists and concludes that the locks used for the protection of the vital areas are manipulative-resistant.
The Vehicle Barrier System is installed and located at the necessary stand-off distance to protect against the DBT vehicle bombs.	Type test, analysis or a combination of type test and analysis will be performed for the vehicle barrier system used to protect against the DBT vehicle bombs.	A report exists and concludes that the vehicle barrier system will protect against the DBT vehicle bombs based upon the as-built stand-off distance of the system.
An intrusion detection system is installed to detect penetration or attempted penetration of the Protected Area Barrier and Vital Area Barriers.	Tests will be performed for the as-built intrusion detection system used to detect penetration or attempted penetration of the Protected Area barrier and the Vital Area Barriers.	The intrusion detection system annunciates in the Central and Secondary Alarm Stations upon penetration or attempted penetration into the protected area or vital area.