

Nuclear Security

While security of the nuclear facilities and materials the NRC regulates has always been a priority, the terrorist attack of Sept. 11, 2001, spurred even more stringent security requirements. Today, NRC-regulated nuclear facilities are considered among the most secure of the nation's critical infrastructure.

This robust security is achieved in layers, with multiple approaches concurrently at work – just



as safety in nuclear power plants is accomplished through duplicate back-up systems. To begin with, nuclear power plants are inherently secure, robust structures. They are built to withstand hurricanes, tornadoes and earthquakes. Additional security measures are in also place, such as well-trained and armed security officers, physical barriers, and intrusion detection and surveillance systems.

Another layer of protection is in place for coordinating threat information and response. The NRC works closely with the Department of Homeland Security, FBI, intelligence agencies, the departments of Defense and Energy, states, and local law enforcement. These relationships ensure the NRC can act quickly on any threats to its licensed facilities.

Nuclear Facility Security

The NRC requires nuclear power plants and some nuclear fuel facilities to have significant security measures in place. Research and test reactors, radiological material holders and others licensed by the NRC also must have security measures in place.

Security enhancements put in place since 2001 for nuclear power plants include:

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

Nuclear power plants and certain fuel fabrication facilities must show they can defend against a set of adversary characteristics called the Design Basis Threat (DBT). The details of the DBT are not public. But, in general, it outlines threats and adversary characteristics these facilities must demonstrate they can protect against. The DBT is based on realistic assessments of the tactics, techniques and procedures used by terrorist groups and organizations. The NRC is constantly re-evaluating the threat environment and considers changes to the DBT if necessary.

The NRC's security baseline inspection program is the primary way the agency verifies nuclear power plants are operating according to security regulations. Force-on-force security inspections are part of this program. In these inspections, a specially trained mock adversary force "attacks" the facility. In 2004, the NRC implemented more realistic force-on-force exercises on a more aggressive schedule that tests facilities more frequently and with more challenging scenarios. Over the past decade, changes to the program have enhanced the realism of these inspections.

Security Personnel

One of the most important components of security programs at nuclear power facilities is the security force. Regulations enacted since 2001 required power plants to add more training and higher qualification standards for security personnel, while increasing the number of officers on the force. In order to minimize security personnel fatigue and ensure a vigilant and effective security force, the NRC also instituted additional fitness-for-duty requirements and work hours controls.

In January 2006, the NRC entered into an agreement with the federal Terrorist Screening Center to review records of individuals with unescorted access to nuclear power reactor facilities. This collaborative effort streamlined the collection and dissemination of information used to determine the trustworthiness of individuals with unescorted access to certain vital areas of nuclear power plants.



Research

Research has always played a large part in supporting the NRC's mission. Since 2001, changes in the threat environment and improvements in technology that allow more sophisticated analyses have accelerated the pace of power plant research. The NRC initiated a security and engineering review based on the 2001 terror attacks. The review looked at what might happen if terrorists used an aircraft to attack a nuclear power plant. The NRC also assessed the potential consequences of other types of terrorist attacks. To assist the NRC, experts from Department of Energy's laboratories used state-of-the-art experiments and structural and fire analyses. While the details are classified, the studies confirm the likelihood of a radioactive release affecting public health and safety is low. Another study analyzed how nuclear power plants would withstand damage to, or loss of, large areas of the plant caused by large fires or explosions. Based on insights from these studies, additional mitigating capabilities were put in place at all nuclear power plants.

Coordination and Communications

The NRC coordinates with many federal organizations to help assure security of its licensees. The timely sharing of accurate information among the NRC, other federal agencies and the nuclear industry is critical to preventing or mitigating the effects of terrorist attacks. NRC staff members are assigned to the Domestic Nuclear Detection Office and the National Counterterrorism Center to enhance inter-organizational communication. The NRC also has agreements with the Federal Aviation Administration and the North American Aerospace Defense Command to provide early warning of airborne threats to NRC-licensed facilities. Additionally, the NRC's highly-trained specialists review intelligence and threat-related information from a range of sources in order to assess suspicious activity related to its licensees. Secure communications systems allow the NRC to communicate with nuclear regulators in other countries.

NRC Operations Center and Emergency Plans

The NRC's Operations Center is staffed around the clock to receive information regarding events involving licensed nuclear materials, assist in emergency response activities, and promptly notify other federal agencies of those events. Upgrades to the center have enhanced effectiveness of response and coordination. Similar upgrades have also been completed in the NRC's four Regional Incident Response Centers. The NRC has increased its participation in emergency exercises related to security and terrorism, and participates in national-level interagency exercises.

More Information

While many of the details of the NRC's security requirements are not public to avoid assisting potential adversaries, general information about security at nuclear power plants is available to the general public through the NRC Web site and a variety of NRC publications. See related information about security here:

[Cyber Security](#)

[Force on Force Inspections](#)

[Protecting our Nation](#)

[Dirty Bombs](#)

[National Source Tracking System](#)

[Incident Response](#)

[Emergency Preparedness](#)