

An Overview of Nuclear Safety and Security

What's most important to know?

Nuclear power plants are among the world's strongest industrial facilities – massive concrete-and-steel structures with backup safety systems, extensive security programs, federally licensed operators and daily oversight by resident inspectors from the Nuclear Regulatory Commission (NRC), the federal government agency with responsibility for ensuring the safety and security of U.S. nuclear reactors. Progress Energy is committed to maintaining safe and secure facilities.

What would happen in the event of an emergency?

Progress Energy employees train year-round in detailed emergency response to ensure the staffs can respond in the unlikely event of an accident. If a plant is built at the preferred site, the development of critical safety and security plans will be part of the license application, and both plant and off-site response organizations (including law enforcement, hospitals and other emergency-response functions) would be put in place. The detailed plans, developed in conjunction with federal, state and local governments and communities, provide procedures for protecting people, property and the environment.

How is access to nuclear power plants controlled?

Access to a nuclear plant is controlled through concentric security zones that provide defense in depth – i.e., increased levels of protection for the reactor and other vital plant equipment. All protective barriers are substantial enough to effectively delay entry in order for an armed response by plant security forces. The outermost zone is the "owner-controlled area," the first line of security defense.

To gain entry into the plant's protected area (an interior fenced area where the reactor building is located) all vehicles and personnel must first be thoroughly inspected by security officers to ensure that no weapons, explosives or other such items are brought onto the plant site.

Access to the "vital area" (the reactor and its critical safety systems) is further controlled through the use of armed guards, physical barriers, locked and alarmed doors and key-card-reader or hand-geometry access-control systems.

Has nuclear security changed in light of the Sept. 11, 2001, terrorist attacks?

Nuclear plants were safe and secure before Sept. 11, 2001. In the last five years, they have become even more so. Considerable enhancements have been put in place at Progress Energy's nuclear plants and at plants around the country. These include a significant increase in the number of armed security officers, more widespread use of formidable physical security features and improved security training programs. Because of the industry's security programs and the multiple layers of safety and security, the U.S. Federal Bureau of Investigation classifies nuclear power plants as "hard" targets.

- **More security officers:** The U.S. nuclear energy industry has invested more than \$1.2 billion in enhanced security measures at nuclear power plants in the last five years. Added security has included extension of the plant's security perimeter, tightened plant access controls and one-third more officers added to the well-trained, paramilitary security forces. Today, more than 8,000 security officers protect 64 nuclear plant sites.
- **State-of-the-art detection technology and access control:** Nuclear plants also feature state-of-the-art technology in intrusion-detection equipment, closed-circuit TV systems and sophisticated access-control systems, such as hand-geometry readers to keep unauthorized personnel out of sensitive areas at the plant.
- **Rigorous training programs:** Nuclear power plants are required by the Nuclear Regulatory Commission to defend against a larger, more serious potential attack, and training programs have been strengthened to meet this larger threat.
- **Structures protect against aircraft:** The strength of nuclear power plants against aircraft impacts has been tested in state-of-the-art computer simulations. An independent study confirms that the primary structures of a nuclear plant would withstand the impact of a commercial airliner without releasing radioactive materials.

For more information, go to www.progress-energy.com/poweringthefuture.

