Nuclear Power

An Unyielding Commitment to Safety, Security and Progress

Nuclear power generation contributes about 35 percent of the electricity used by Duke Energy Progress customers, enough electricity to power 2.6 million homes. In addition to being reliable, cost-effective and resource-efficient, nuclear energy is a safe and clean energy source that helps meet the increasing energy demands of today's technology-driven society.

While the world certainly changed on September 11, 2001, safety and security have always been our top priority. We have strengthened our strong security measures and recommitted ourselves to serving and protecting our plant communities. This brochure was written to answer your questions about the safety and security measures at our nuclear power plants. If there is a question we haven't covered or if you are interested in receiving additional information, please call any of the numbers listed in the contact section or visit our Web site at http://duke-energy.com.

DUKE ENERGY® PROGRESS

Safety

Who is responsible for ensuring plant safety?

The operator of a nuclear plant has the responsibility to ensure that it is operated safely, and Duke Energy Progress' nuclear plants have safety records that are among the best in the nation. The U.S. Nuclear Regulatory Commission (NRC) is the organization charged by the federal government with oversight of all the nation's nuclear power plants. The NRC sets standards for both plant design and personnel, reviews our operations and conducts regular inspections of plant operations and security. There are permanent NRC representatives at each of our nuclear facilities, working with our own professional staff, to ensure safe operation.

How safe are nuclear power plants in case of an accident?

Nuclear plants are designed with multiple layers of safety systems and structures, designed to both protect the plant itself and protect the community. There is the outer containment structure, built of reinforced concrete (3 1/2 to 6 feet of concrete with a steel liner) and the reactor vessel itself, made of steel that ranges from 9 to 12 inches in thickness. The reinforced concrete containment structures have been designed to withstand the impact of hurricanes, tornadoes, floods and airborne objects with tremendous force.

Nuclear plants also have multiple safety and plant shutdown systems. All of these systems have their own back-up systems that are physically separate, to provide even more protection and reliability.

How is the plant protected from illegal entry or sabotage?

Nuclear plants are among the most secure industrial facilities in the world. There are many physical barriers to forced entry. Heavily armed security forces monitor the plant around the clock. These security forces use sophisticated electronic surveillance equipment that scans the area surrounding the plant. The plant is also built with locked access vaults that prevent those without computer-readable security clearances from entering vital areas of the plant.

What about nuclear waste?

Once nuclear fuel has been used to generate power, it is still radioactive and requires safe and secure storage. This "spent fuel" or "used fuel" is stored either in "dry storage" (specially designed and fully lined concrete canisters) or in "wet storage"

(submerged under 23 feet of water in fortified concrete, steel-lined pools). Duke Energy Progress uses both methods and they are considered equally safe. In February 2001, the NRC released a study of spent fuel storage pool accident risk that took into account acts of sabotage and concluded "the risk is low," largely because there should be adequate time to begin alternate cooling procedures even after an extremely severe event that might release water from the fuel pool.

Under current law, the U.S. government is responsible for arranging long-term storage for spent fuel from the nation's nuclear power plants. The Department of Energy and President Bush have recommended a remote site at Yucca Mountain, Nevada, as the nation's permanent nuclear waste repository. Duke Energy Progress' customers have paid more than $540 million since 1983 into a Federal Waste Fund to fund a federal repository. Nationwide, more than $16 billion has been contributed. Once the government has approved a long-term storage site, Duke Energy Progress plants will be able to ship spent fuel there for secure storage.

Security

How secure are nuclear power plants?

Nuclear power plants are among the most secure facilities in the world. In fact, the FBI considers nuclear power plants difficult targets to penetrate due to the combination of robust buildings that protect the reactor, the presence of highly trained, well-armed security professionals on duty around the clock, and a multi-layered strategy to safely shut down reactors to protect public safety.

Are nuclear plants protected against terrorist attacks?

In addition to being guarded 24 hours a day by well-trained security personnel, our nuclear plants have plans already prepared to defend the facilities from terrorists. These plans involve support from local, state and federal law enforcement. The NRC conducts security drills at all plants around the country on a regular basis, and all of the Duke Energy Progress nuclear plants have performed very well on these security tests. We are in constant communication with the NRC and the national intelligence community for current information on security threats. In addition to our own security personnel, the U.S. military is on call to respond to protect nuclear power plants if necessary.

How are nuclear plants protected from a terrorist attack using a commercial airliner?

The first line of defense to protect our nation's nuclear plants from an attack using a commercial airliner is to improve security at airports and on board airliners to prevent hijackings from occurring in the first place. The government and the airline industry have made great strides in that area since September 11. In addition, the air space around nuclear plants is monitored by the Federal Aviation Administration (FAA) and the U.S. military.

While nuclear power plants cannot be guaranteed to be impervious to every form of attack that can be imagined, the reinforced concrete containment structures – coupled with redundant safety and plant shutdown systems – are designed to protect the public.

Has plant security been increased?

Yes. Our plants have operated on heightened security since the attacks on September 11, just as they did after the 1993 World Trade Center bombing and the Oklahoma City bombing. In the interest of security, we cannot discuss specific measures that are being taken at our nuclear plants. Under federal law, this information must be kept confidential. What we can say is these new security measures include additional restrictions on access, as well as an increased security presence and closer coordination with our partners in intelligence, military, law enforcement and emergency response at the federal, state and local level. The NRC has recently issued new security orders that formalized many of the steps taken since September 11.

Tight security at nuclear facilities is nothing new. The plants have always been guarded 24 hours a day by heavily armed, well-trained security personnel. All of Duke Energy Progress' nuclear plants have performed very well on the government's security tests, including the NRC's mock terrorist attacks. In fact, none of our plants have ever failed one of these security tests.

Who is responsible for plant security?

In addition to our NRC-mandated security plans, Duke Energy Progress works closely with local, state and federal law enforcement authorities or officials. The U.S. military – working with the national intelligence community – is also on call to respond to credible threats at nuclear power plants.

What about terrorists targeting spent fuel storage or shipping?

Spent fuel is stored in secure and protected facilities. In addition to the physical design and on-site protection that exists, spent fuel storage facilities would be a very small target for an aircraft

assault, especially with the ongoing FAA and military surveillance of air space around nuclear plants.

The federal government also closely regulates the shipment of spent fuel, with measures that under federal law we are required to keep confidential. The fuel is shipped in specially designed, fortified shipping casks, and security is coordinated with state and local law enforcement. Duke Energy Progress has been safely shipping used nuclear fuel by rail for more than 12 years, and our ability to do so allows us to continue to operate our nuclear facilities. Once the federal government opens its national spent fuel storage site, all U.S. nuclear plants will be required to send their spent fuel there for long-term storage.

Emergency Response

What if there is an accident or attack at a nuclear plant?

All of our nuclear plants have contingency plans and support agreements with state and local law enforcement and emergency management officials in the unlikely event of an accident or terrorist attack. These detailed plans include procedures for notifying the public and measures they should take to protect themselves. These measures may include evacuation of surrounding areas if the local or state officials responsible for protecting the public decide this action is necessary. Each of Duke Energy Progress' nuclear facilities maintains a program of community outreach and education for those who live near the plants.

Who is responsible for protecting citizens in the event of an incident?

Local counties where plants are located, state and federal agencies including the NRC and the Federal Emergency Management Agency (FEMA), and Duke Energy Progress work together to establish and maintain emergency response plans for nuclear plants and the surrounding communities. Duke Energy Progress works closely with community members and coordinates with emergency management officials at the state and local level who are responsible for measures intended to provide public protection in the event of an emergency. The plans are regularly updated and drilled four times a year. Performance on these practice sessions is evaluated and graded by FEMA every two years. Federal and local law enforcement agencies are in close contact with the plants throughout the year and participate in some of the drills. All of our plant community emergency response agencies have always performed well on these drills.

Additional Questions

Where can I get additional information?

Visit our Web site at http://duke-energy.com
or call us at:

Brunswick Nuclear Plant
910/457-3113

Crystal River Nuclear Plant
352/563-4489

Harris Nuclear Plant
919/362-3261

Robinson Nuclear Plant
843/857-1000