

***COOK NUCLEAR PLANT***

**SAFE**  
**STRONG**  
**SECURE**  
**PREPARED**

**to protect you and your electric POWER always.**

**AEP** **INDIANA**  
**MICHIGAN**  
**POWER®**

# Your safety is our number-one priority.

**We recently spoke with people throughout the area. Here are questions they asked and our responses. Let's talk if you have additional questions or concerns.**

*"Many people, myself included, don't usually think about the nuclear plants that are near us. Then the earthquake and tsunami happened in Japan, and the local plants come to the forefront of our minds. Makes me think about what could happen here."*

Business Owner and Dad,  
St. Joseph

## **ROBUSTLY BUILT TO BE IN YOUR COMMUNITY**

### **Is it safe to live and work near the Cook Plant?**

Yes. The Cook Plant, and America's 102 other nuclear units, have exemplary 30-year safety records. They operate 24 hours a day, seven days a week in the majority of states across the country. Employees of the industry live in the communities where nuclear plants operate and take their safety responsibility seriously. The U.S. Nuclear Regulatory Commission (NRC) conducts strict oversight at every plant every day to ensure the industry's continued focus on safety, training, regulatory compliance and continuous improvement. The commercial nuclear industry is arguably the most strictly and thoroughly regulated industry in the nation.

Berrien County has a comprehensive Emergency Preparedness Plan. Through regular training and drills, hundreds of local, county, state and federal officials and Cook Plant personnel demonstrate their capability to make sure you stay safe. The NRC and Federal Emergency Management Agency evaluate biennial exercises at the plant.

Cook Plant and the U.S. nuclear industry have already started an assessment of the events in Japan and are taking steps to ensure that U.S. reactors could respond to events that may challenge safe operation of the facilities. This includes:

- Verify each plant's capability to manage major challenges, such as aircraft impacts and losses of large areas of the plant due to natural events, fires or explosions.
- Verify each plant's capability to manage a total loss of off-site power and that all required materials are adequate and properly staged.
- Verify the capability to mitigate flooding and the impact of floods on systems inside and outside the plant.
- Perform walk-downs and inspection of equipment needed to respond successfully to extreme events like fires and floods.

## **ALWAYS READY FOR NATURE'S FURY**

### **Can the Cook Plant shut down safely after an earthquake?**

Yes. Cook Plant is designed to safely shut down in the event of an earthquake or seismic event. It is important to understand that the Cook Plant is not located in a geologic area known for seismic or earthquake activity. Historically, no major earthquakes have had epicenters within a 400-mile radius of the plant. So Cook Plant is designed to exceed historical geologic events for a 400-mile radius. The design roughly corresponds to withstanding up to a 6.4 earthquake on the Richter scale.

### **Will Cook Plant's shutdown equipment and backup systems work if there is a flood or large wave?**

Yes. All the equipment needed to safely shut down the plant is located above historic flood and high wave levels or is protected by berms. The Cook Plant is protected from flooding to a level more than 16 feet above the current lake level and 11 feet above the highest-ever recorded lake level. It's also important to know that Cook Plant would never encounter a wave with the length or force of a tsunami. However, on very rare occasions, Lake Michigan can produce a large surface wave known as a seiche. A seiche is caused either by prolonged



**Regular security drills test Cook Plant's ability to protect the public during emergencies. Actions are closely coordinated with federal, state and local authorities and their detailed plans have proven to be effective.**

*"I'd like to know how prepared we are; what do we have in place if something like this happens at our local nuclear plants."*

Female Business Owner and Mom,  
St. Joseph

strong winds that push the water or by earthquake activity. The Cook Plant is designed to sustain a seiche up to a height of 11 ft. The highest recorded seiche within 25 miles of the Cook Plant was 8 ft. This occurred in Michigan City, Indiana, in 1954.

### **Can the Cook Plant safely shut down if it is hit by a tornado?**

Yes. The plant is designed to safely shut down if there is a tornado. It is designed to handle the effects of an F5 tornado with 300-mph winds. Historically, the dune area where Cook Plant is built has not been in the path of tornadoes.

### **Is the Cook Plant safe if there is a loss of off-site power or station blackout like they had in Japan?**

Yes. Each of the two Cook reactors has two locomotive-sized backup diesel generators that start automatically if offsite power is lost. Only one is required to safely shut down each reactor. The main fuel tanks for the diesel generators are buried underground. Cook has additional backup diesel generators that the Japanese plants did not have.

The transmission switchyards at Cook are a hub of electrical distribution for our region and we have seven separate high-voltage connections from the grid available to power our plant. Due to upgrades that were made following the 9/11 terrorist attacks, they have

processes and equipment to support safe shutdown of the plant even after the loss of large areas of the plant.

*"I'm not concerned about an earthquake affecting our local nuclear plants. My biggest concern is if there is a terrorist attack."*

Mom, St. Joseph Township

## **COMPLETELY PREPARED TO SAFEGUARD THE PLANT**

### **Is the Cook Plant secure from a terrorist attack?**

Yes. Federal regulations require us to demonstrate we can protect Cook Plant against forced entry by a well-trained paramilitary force, armed with automatic weapons and explosives. We are proud that our security force repeatedly proves in drills and exercises it can handle a hostile attack. In addition, the concrete/steel-reinforced containment structures are designed to withstand the impact of a passenger jetliner without an immediate release of radioactive material.

Cook Plant stays in close communication with federal, state and local security and intelligence gathering agencies. Our plant has a well-armed and highly trained security force. Many are U.S. military veterans or are active in the reserve. These officers patrol the plant and grounds 24 hours a day, 365 days per year. Security at vital areas, such as the used fuel storage areas and reactors, is extremely high.

Our security force is aided by around-the-clock, highly sophisticated surveillance equipment. There are barriers along access roads and Lake Michigan that make quick entries and exits impossible. Armed officers stop every vehicle at the security plaza to check passenger identification and vehicle contents.

No one enters the Cook Plant without passing through metal detectors, an explosives search device and identification verification equipment. Everyone who works at the plant must undergo a background check and programs to make sure all employees are fit to do their jobs safely. Non-badged visitors cannot move anywhere in the plant without an authorized escort.

## **CONTINUALLY MONITORED FOR RADIATION LEVELS**

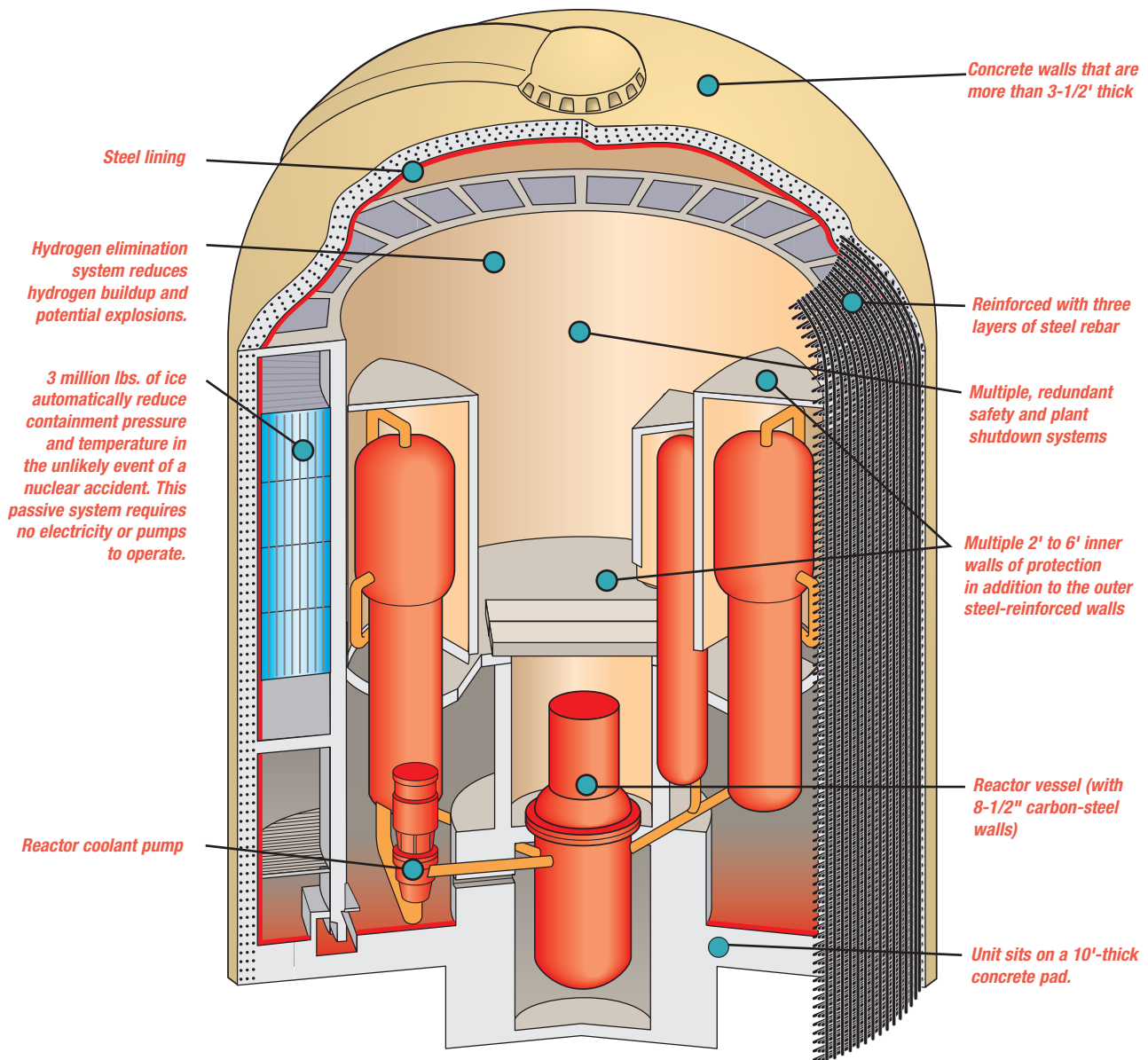
### **How can I be sure that radiation levels are safe around the Cook Plant?**

The Cook Plant has an extensive Radiological and Environmental Monitoring Program that samples and tests groundwater, lake water and air. (This all started even before the plant began operation.) There are 19 wells on the plant property. Fish in Lake Michigan and milk produced in communities around the plant are also tested. Sophisticated air sampling machines monitor the air near the plant and at plant boundaries and this is compared to samples taken well away from the site. There are also numerous state and federal permits and regular reports that are publicly posted. Reports on radiation around the plant, which is within the allowable licensed limits, are also publicly available.



*From the start of its operation, Cook Plant's team of environmental specialists has sampled the air, water and soil at monitoring stations strategically located on the plant's 650 acres.*

## Cutaway view of a Cook containment building



## Your average yearly radiation exposure

In late March 2011, scientists at Cook took measurements of the radioactive isotope Iodine-131 (carried by winds from the damaged nuclear plant in Japan) and recorded a level of 0.05 millirems (mrem). The graphic below shows how this level compares to other naturally occurring and humanmade radiation that you are exposed to each year.

On average, you'll be exposed to 360-620 millirems annually. People whose jobs expose them to radiation are safe up to 5,000 millirems per year. The Cook Plant has the lowest occupational radiation levels of all Westinghouse Electric Co. reactors in North America.



**0.06 MREM**  
luminous watch



**1-2 MREM**  
watching TV



**10 MREM**  
chest X-ray



**30 MREM**  
cosmic rays



## **The tragedy in Japan ... has turned our eyes globally and locally.**

On March 11, 2011, a terrible earthquake and tsunami crushed communities in Northeastern Japan. As the heartbreaking tragedy unfolded, the world's eyes turned to the Fukushima Daiichi nuclear plant. The plant shut down and functioned appropriately through the earthquake, but the tsunami knocked out backup power generators. Without power, they were unable to keep the reactors and the stored used fuel cooled. We are all aware of the significant damage that occurred.

We at the Cook Nuclear Plant understand that people in Southwest Michigan may have new questions about living near a nuclear plant. We've always been open and available to the community; however, we realize the situation in Japan likely calls for increased dialogue.

Cook and all U.S. nuclear plants are designed to handle extreme environmental hazards including tornados, earthquakes or floods. With this brochure, we'd like to share a little more about that and some of the other safeguards for our plant.

Our thoughts and prayers continue to be with the people of Japan. Rest assured, we are doing everything we can to support them. We are also taking additional actions at Cook to make our plant even safer as we learn more about the events in Japan.

Consider this brochure another step in the continuing dialogue we try to maintain. Please note the contact information on the back page if you have additional questions or comments. Your health, safety and security are, and always will be, our number-one focus.

More than 1,100 men and women at Cook – your neighbors – stand with me on that promise.

**Larry Weber**

Senior Vice President and  
Chief Nuclear Officer  
American Electric Power



# More than 1,100 neighbors safeguard you and your community every second.

*Flip a switch. A light bulb brightens the room. More than 1,100 men and women at our Bridgman and Buchanan, Michigan, facilities work every day to instantly bring you electricity.*

*They are determined to keep your source of power – Cook Plant – safe and secure. They are prepared to handle the toughest emergencies. Because just like you, they want nothing more than to stay safe, keep their families safe, their friends and neighbors safe, their water, land and air safe – always.*

*You are safe because of them.*



## **Be prepared for any severe emergency.**

Each year the Cook Plant sends a calendar with emergency plan information to every residence, school and business in Berrien County. It is written especially for people who live, work or go to school within 10 miles of the Cook Plant in Bridgman. It is also for use by boaters, campers and all other visitors to the area.

In the calendar you will learn how to prepare for severe weather, a chemical spill, nuclear event or other unlikely serious emergency. It explains our county's warning sirens and which radio and television stations will broadcast emergency information. You can see our evacuation routes and evacuation reception centers. After reading it, please post the calendar where you can find it easily.

**If you do not have a current emergency information calendar, contact us.** You can also view our emergency plan at [www.cookinfo.com](http://www.cookinfo.com).

## **Get the facts**

Whenever you worry or grow concerned about the Cook Plant or nuclear power, call or e-mail us. We will give you the most up-to-date, factual information available.

**You also can request a speaker.** Some of the most knowledgeable people in our region and the nation will meet with your group, organization or business to discuss nuclear power issues.

For more information, contact:

## **COOK ENERGY CENTER**

PO BOX 850  
Bridgman, MI 49106  
(800) 548-2555  
E-mail: [cookinfo@aep.com](mailto:cookinfo@aep.com)  
[www.cookinfo.com](http://www.cookinfo.com)

**Get additional nuclear safety and security information at:**

**Nuclear Energy Institute**  
[www.nei.org](http://www.nei.org)

**U.S. Nuclear Regulatory Commission**  
[www.nrc.gov](http://www.nrc.gov)

**U.S. Department of Energy**  
[www.energy.gov](http://www.energy.gov)

**International Atomic Energy Agency**  
[www.iaea.org](http://www.iaea.org)

**American Nuclear Society**  
[www.ans.org](http://www.ans.org)

**Health Physics Society**  
[www.hps.org](http://www.hps.org)

