



EMERGENCY PREPAREDNESS

For Monroe and Wayne Counties
2019



Please read and keep this booklet

This booklet contains information that could be useful in the event of an emergency at the Fermi 2 Nuclear Energy Facility.

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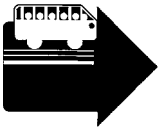


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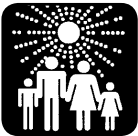


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MAKING SURE YOU'RE PREPARED

DTE Energy, in cooperation with state and local officials, prepared this booklet to explain emergency planning for the Fermi 2 Power Plant. It also provides information about radiation. It is for people who live, work or go to school within 10 miles of the plant, located at 6400 North Dixie Highway, Newport.



Please read this booklet. Talk it over with your family, neighbors and friends. Some of them may need your help and you may need theirs. If you know someone who is blind or does not read well, please share the information in this booklet with them. If you require special assistance, complete one of the post-paid cards (for the county you live in) located inside this booklet and return it in the mail.

You may call your local Emergency Management Division for more information about this program.

Monroe County 734.240.3135

Wayne County 734.728.3711

Knowing what to do ahead of time helps you to be prepared for any emergency. **Save this booklet and keep it handy so you can find it easily in case of an emergency.**

Monroe County Alert Notification System (MCANS)

Monroe County, in cooperation with DTE Energy, is now providing a service to keep you informed about emergencies and other situations relating to public preparedness. Monroe County Alert Notification System (MCANS) will allow DTE Energy and local public safety agencies the ability to provide you with up to date information on your home phone, cell phone, by e-mail, or by text message. This service is **FREE** to Monroe County residents and businesses and enrollment is easy. Just log onto **www.co.monroe.mi.us/mcans** and start being informed.

WHAT TO DO WHEN YOU HEAR THE SIRENS

The siren system has been installed to cover a 10-mile area around the plant and is tested the last Wednesday of each month at 10 a.m. The sirens are controlled by Monroe County and Wayne County officials. They are responsible for alerting you so you can listen to the Emergency Alert System for further information. Boaters on Lake Erie will be warned by marine radio or patrol boats.



A 3-minute steady siren blast will be used to alert you of an emergency at Fermi 2, plus tornadoes and other weather emergencies.

When you hear the sirens, go indoors. Tune your radio or television to the Emergency Alert System (EAS).

Listen to the official directions and information, which will be repeated often. Unless otherwise indicated, the stations broadcast 24 hours a day.

EAS Radio/Television Stations

Radio

WJR-AM 760
Detroit

WWJ-AM 950
Detroit

WDFN-AM 1130
Detroit

WCSX-FM 94.7
Detroit

WMIM-FM 98.3
Monroe

Television

WJBK-TV Ch. 2
Detroit

WDIV-TV Ch. 4
Detroit

WXYZ-TV Ch. 7
Detroit

WMYD-TV Ch. 20
Detroit

WTVS-TV Ch. 56
Detroit

WWJ-TV Ch. 62
Detroit

WHAT TO DO IF YOU ARE INSTRUCTED TO STAY INDOORS

Keep calm. Panic is the greatest enemy in any emergency. If there is an emergency at Fermi 2, in most cases, it will not be necessary to leave your home.

Emergency response officials will broadcast information over EAS stations and may instruct people to shelter, or stay inside. If this happens, the following actions will help protect you:

1. Stay tuned to an EAS station for official information.
2. Stay inside until you are advised it is safe to go out. Close your doors and windows. Turn off your air conditioner, ventilation fans, furnace and other air intakes. Bring all pets inside.
3. If you must go outdoors, cover your nose and mouth with a handkerchief.
4. If you have been outside, remove all outer clothing (i.e. coats, coveralls, hats, gloves and shoes) before entering the home. Put the items you were wearing in a plastic bag, seal it shut, and store it out of the way. Shower immediately, if possible, using tepid water and soap. Do not use conditioner on your hair.
5. Put your food in covered containers or in the refrigerator.
6. Do not use the telephone unless absolutely necessary. All telephone lines will be needed for emergency communication.
7. If possible, go to the basement and take a radio with you so you can continue to listen to the EAS for updated information.



WHAT TO DO IF YOU ARE INSTRUCTED TO MONITOR AND PREPARE

Emergency response officials may instruct people to monitor and prepare. If this happens, it is a precautionary action intended for you to monitor the situation by staying tuned to an EAS station and prepare for the possibility of sheltering in place, evacuation, or other protective actions. Further, if an evacuation is underway, officials should ask individuals who are not involved in the evacuation to remain off the roadways to allow those who are instructed to evacuate to do so.

WHAT TO DO IF YOU ARE INSTRUCTED TO EVACUATE

Emergency response officials will use the EAS to tell you if it is necessary to leave your home. Stay calm and don't panic. The following actions should be taken if you are required to evacuate:



1. Gather clothing and personal items to take with you. See the inside back cover for a list of essential items.
2. Check your house to see that all water faucets, lights and appliances are turned off. Close and lock your doors and windows.
3. Have a plan for your pets. Keep in mind that currently, Reception Centers and Congregate Care Centers will only accept pets if they are service animals. Make arrangements to stay with friends, relatives, or a pet-friendly hotel outside of the area. Remember to bring your emergency pet kit that includes food, water, medicines, leashes and tags.
4. Drive safely, keeping all car windows and vents closed. Offer to take nearby friends and neighbors who may need a ride.
5. Follow the evacuation route given over EAS for your area and go to the designated Reception Center (see page 7) to register. You should go to a Reception Center first so if someone is looking for you, Reception Center personnel can tell them where you are. You may then leave to stay with friends or relatives or go to a Congregate Care Center (see page 9).

Remember, not everyone in the 10-mile Emergency Planning Zone (see page 11) will have to leave. Who leaves depends on the severity of the situation and weather conditions. Listen carefully to the EAS. Emergency officials will give you directions when/if your area is to be evacuated. Follow the route given to the Reception Centers.

Schools have their own evacuation plans, do not attempt to pick up children there. They will be taken to Host Schools outside the Emergency Planning Zone (see page 8). Residents of hospitals, nursing homes and other special care facilities will be kept safe and moved to facilities designated in their individual emergency plans.

During your absence, the police will control access to the evacuated areas and only authorized people will be permitted access.

WHERE RECEPTION CENTERS ARE LOCATED

Note: Not all of the Reception Centers listed may be opened during an evacuation. Listen to your local EAS stations to determine which Reception Centers are open.



MONROE COUNTY RECEPTION CENTERS:

Bedford Senior High School

8285 Jackman Road
Temperance, MI 48182

Dundee High School

130 Viking Drive
Dundee, MI 48131

Ida Public Schools

3145 Prairie Street
Ida, MI 48140

Mason High School

2400 Mason Eagles Drive
Erie, MI 48133

Summerfield High School

17555 Ida West Road
Petersburg, MI 49270

Whiteford High School

6655 Consear Road
Ottawa Lake, MI 49267

WAYNE COUNTY RECEPTION CENTERS:

***Wayne County Community College**

21000 Northline Road
Taylor, MI 48180

Taylor High School

11211 Beech Daly
Taylor, MI 48180

*This is the primary reception center.
Additional centers will be opened as necessary.

WHEN SCHOOL IS IN SESSION

During the day, students at school will be taken by bus to Host Schools located beyond the Emergency Planning Zone. This ensures students are moved to safety quickly and efficiently. Some Host Schools also will serve as Reception and Congregate Care Centers. Parents may pick up their children at Host Schools. This will avoid delays in moving children to safety. You should pick up your children at the Host School only. This includes all public and private schools and licensed day cares.

MONROE COUNTY SCHOOLS

Evacuated School System

Jefferson (Monroe)
Triumph Academy (Monroe)



St. Charles (Newport)



Airport (Carleton)



Monroe (Monroe)



Host Schools

Mason Senior High
2400 Mason Eagles Drive
Erie, MI 48133

St. Stephen School
18800 Huron River Drive
New Boston, MI 48164

Milan Middle School
920 North Street
Milan, MI 48160

Lincoln School District
7425 Willis
Ypsilanti, MI 48197

Bedford Senior High
8285 Jackman Road
Temperance, MI 48182

WAYNE COUNTY SCHOOLS

Evacuated School System

Gibraltar
Flat Rock
St. Mary's (Rockwood)



All pre-school, day care and
Head Start facilities within the
Gibraltar and Flat Rock School Districts

Host School

Taylor High School
11211 Beech Daly
Taylor, MI 48180

OTHER HELP IS AVAILABLE

CONGREGATE CARE CENTERS

The Michigan Department of Health and Human Services (MDHHS) and the American Red Cross have established several Congregate Care Centers. They are for people who have nowhere to stay outside the Emergency Planning Zone. Initially, at the Reception Centers, you will be registered and told which Care Center to go to and how to get there. When you arrive, you will be given food, a place to sleep and clothing, if needed. How long you stay depends on the length of the emergency. You will be notified to return home as soon as state officials decide you can do so safely. See Page 7 for a list of Reception Centers.



TRANSPORTATION

If you, or someone you know, is without transportation, it will be provided. A special transportation hotline telephone number will be announced at the time of the emergency. The number will be broadcast over the EAS stations listed in this booklet. For transportation assistance you should call this number. After you have called, you will be picked up and transported to a Reception Center where you can register.

SPECIAL HELP

Local plans include provisions for people in special care facilities, nursing homes and hospitals. Any person with a functional need requiring travel assistance should fill out the information card enclosed inside the back cover of this brochure and return it to county emergency response officials, or call the phone numbers available, to report these functional needs. **This form should be updated every year (see back cover).** Transportation will be provided to take them to another facility outside the Emergency Planning Zone.

PUBLIC INQUIRY

Special public inquiry telephone lines will be staffed in an emergency to provide accurate information to residents. Public inquiry telephone lines are activated when the Monroe County Emergency Management Division is activated in an emergency.

Public inquiry telephone number is: 734.243.8600

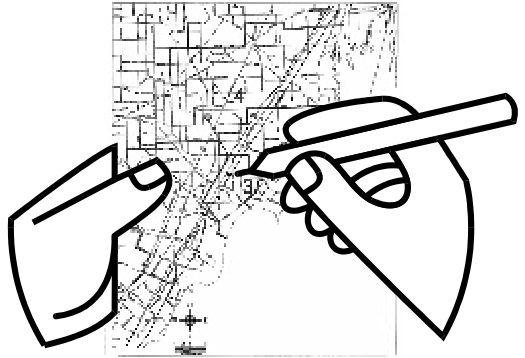
THE EMERGENCY PLANNING ZONE: AN AREA DESIGNED TO ENSURE YOUR SAFETY

A 10-mile area around the Fermi 2 Power Plant has been set up as an Emergency Planning Zone (EPZ). It is required by the Nuclear Regulatory Commission (NRC) and the Department of Homeland Security (DHS).

The areas in Monroe County covered by the EPZ include Ash, Berlin, Frenchtown, and Monroe Townships, the southeastern corner of Exeter Township, and the eastern portion of Raisinville Township, as well as the City of Monroe, Carleton Village, South Rockwood Village and Estral Beach Village.

Wayne County areas in the EPZ are the communities of Gibraltar, Flat Rock and Rockwood, and part of Brownstown Township. A map of the EPZ area is included in the center of this booklet for your information.

Please identify the area where your home is located. This information will help you understand your required actions in the unlikely event of an evacuation.



THE FERMI 2 PROTECTIVE ACTION ORDER AREAS

AREA 1: MONROE

- Berlin Township east of North Dixie Highway, and south of U.S. Turnpike and Reaume Road.
- Frenchtown Township east of North Dixie Highway and north of Brest Road.

AREA 2: MONROE

- Berlin Township south of Sigler Road, west of North Dixie Highway, north of U.S. Turnpike and Reaume Road.

AREA 3: MONROE

- Frenchtown Township west of North Dixie Highway, south of Brest Road, east of I-75 and north of Hurd Road.

AREA 4: WAYNE AND MONROE

Wayne

- Brownstown Township south of Vreeland Road and the municipalities of Rockwood, Gibraltar, and Flat Rock.

Monroe

- Berlin Township north of Sigler Road.
- Ash Township east of Maxwell Road and south of Carelton West Road.
- Exeter Township south of O'Hara Road and east of Finzel Road.

AREA 5: MONROE

- Frenchtown Township west of I-75 and south of Hurd Road.
- Raisinville Township east of Steffas Road and North Raisinville Road and north of North Custer Road.
- Monroe Township east of Herr Road, north of Dunbar Road, east of South Telegraph Road, north of Albain Road, east of I-75, north of Mortar Creek Road.
- City of Monroe.

AREA 6: LAKE ERIE

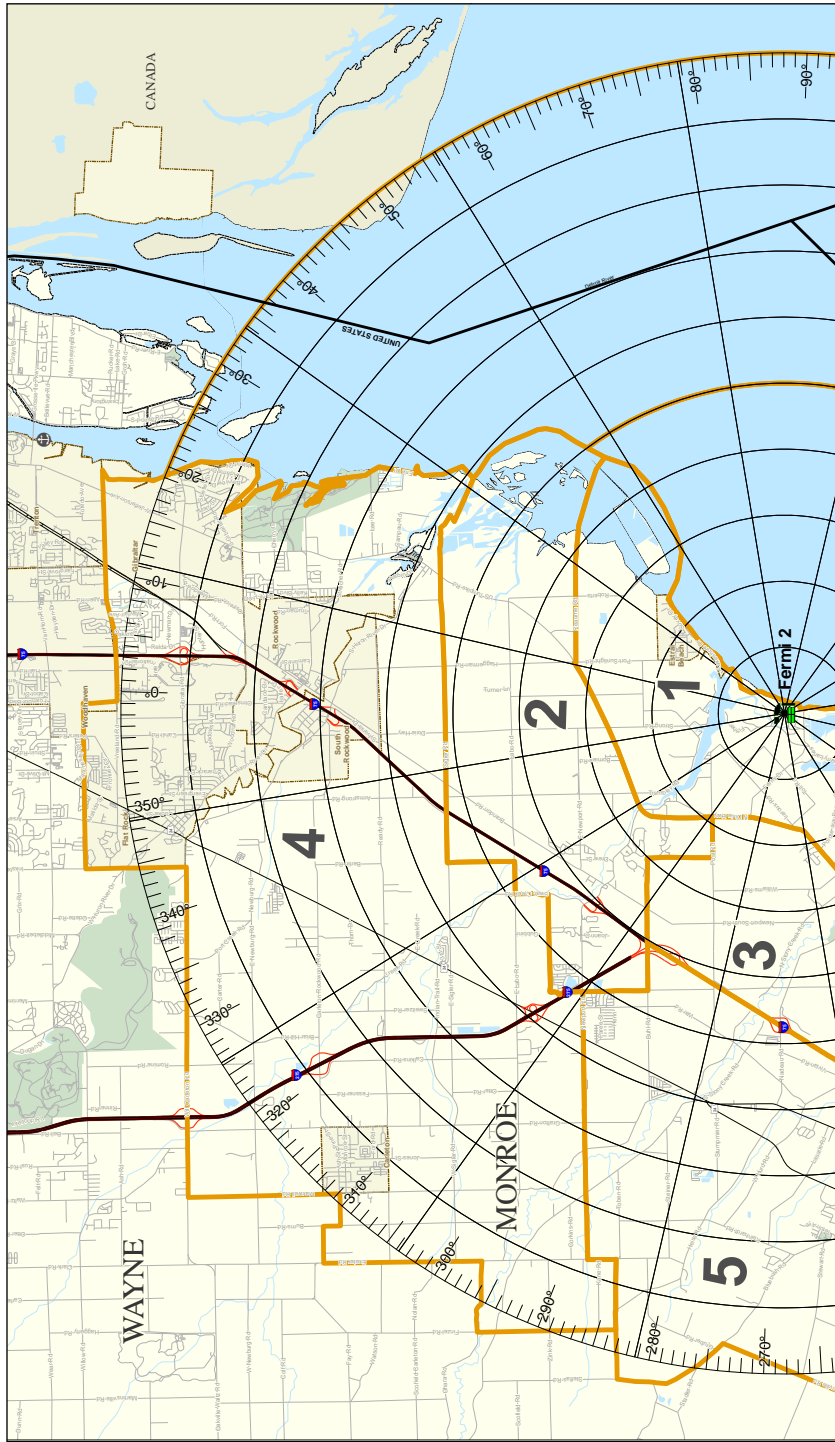
- Lake Erie area 0 to 5 mile radius.

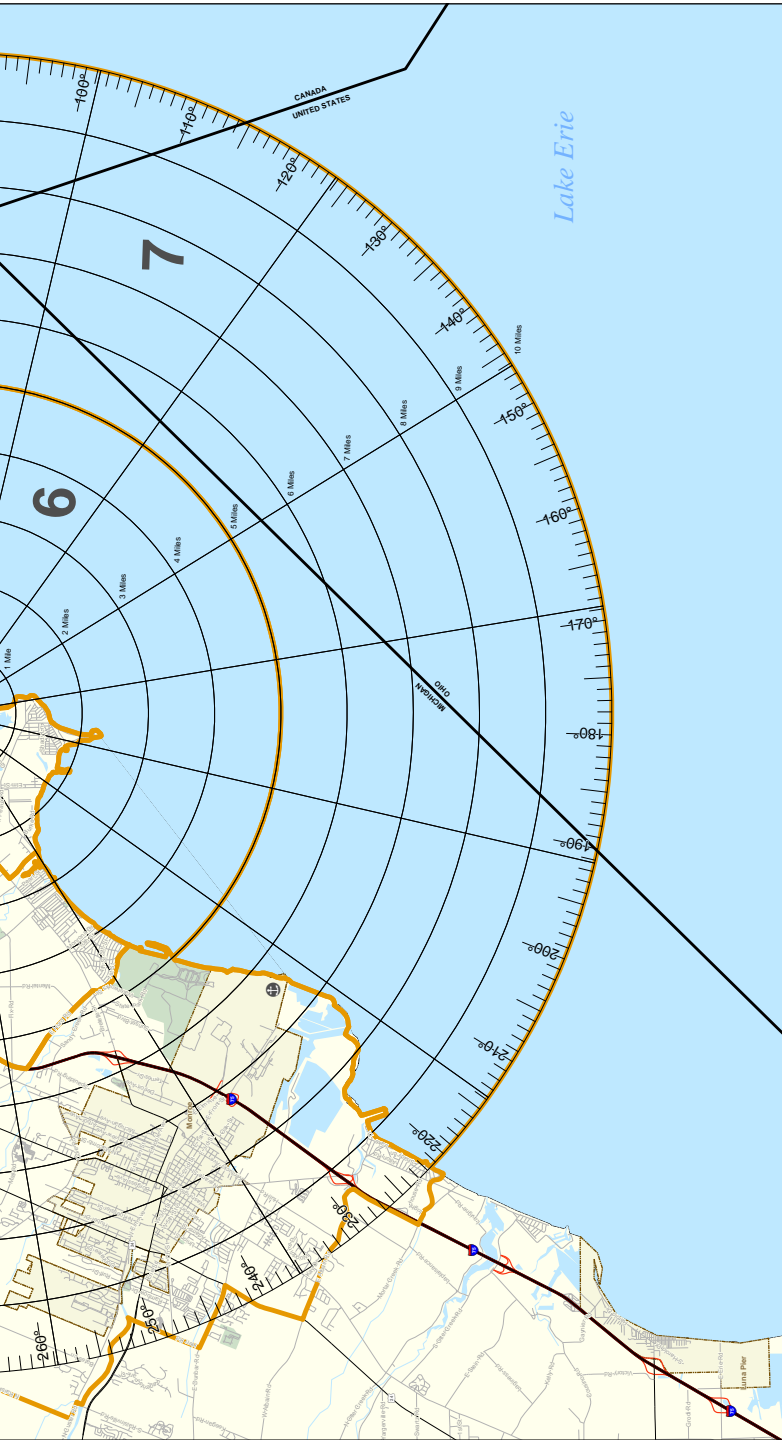
AREA 7: LAKE ERIE

- Lake Erie area 5 to 10 mile radius.

10 MILE EMERGENCY PLANNING ZONE & PROTECTIVE ACTION AREAS

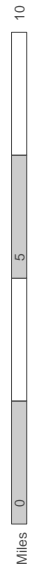
Enrico Fermi 2 Nuclear Power Plant





Legend

- Points
- Points of Interest
- Interstates
- Highways
- Primary Roads
- Local Roads
- Points
- Points of Interest
- Parcs
- Lakes
- Cities
- Counties
- Census



Michigan State Police Emergency Management and Homeland Security Division
 Last Updated: September 19, 2018

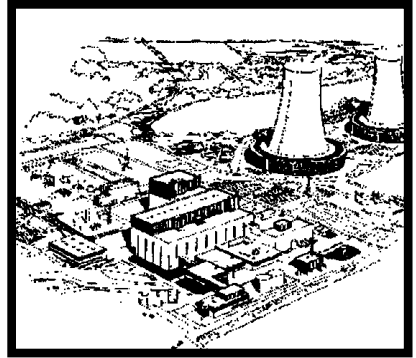
Coordinate System: Michigan Geodetic Reference System 1983 meters
 Contour Interval: 100 feet
 All nuclear plant related data from Michigan State Police Emergency Management and Homeland Security Division



EMERGENCY PLANS ARE EXERCISED REGULARLY

An emergency at Fermi 2 is quite unlikely. Normally, there is no risk to plant employees or the public. However, emergency planning for communities near nuclear plants has proven helpful during other kinds of emergencies, such as severe weather or chemical spills.

The Fermi 2 emergency plans are tested regularly. The federal government requires a complete test of the plan every other year. State and local personnel participate with DTE Energy at least every two years. An ongoing training program for all emergency workers further ensures your safety.



SAFETY AT FERMI 2: MINIMIZING RISKS

Fermi 2 has been designed to reduce the possibility of accidents that could harm the public. Systems are in place to automatically shut down the reactor if a problem develops. There are also a number of different ways to control and cool the reactor.

The Fermi 2 plant was built to and operates under strict safety standards. The plant's construction, safety systems and operations are thoroughly checked by DTE Energy and the Nuclear Regulatory Commission (NRC).

The plant controls a nuclear reaction in uranium fuel. The heat from this reaction turns water into steam. The steam turns a turbine to generate electricity.

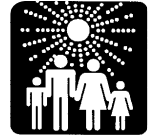
All commercial nuclear power plants in the U.S. have containment structures to contain radioactive materials in the unlikely event of an accident. Radioactive materials would have to penetrate several barriers, including the containment structure, to reach the environment.

FACTS ABOUT RADIATION

WHAT IS RADIATION?

Atoms are the building blocks of all material. If atoms contain excess energy, they are unstable. Materials that are composed of unstable atoms will naturally emit radiation in order to release the excess energy and reach a stable state. The radiation is emitted in waves or particles of energy. Thus, radiation can be defined as energy emitted from the nucleus of unstable atoms in the form of particles or waves.

Radiation is not new or limited to nuclear power plants. Each of us is exposed to some radiation every moment of our lives from radioactive materials that exist in nature.



NATURAL RADIATION

Natural radiation is a by-product of processes and materials created when the earth was formed. The sun, on which we all depend for heat and light, produces very highly charged particles called cosmic rays. We are exposed continuously to this radiation every day. Not many people realize that we all have radiation sources within our bodies, usually in the form of potassium. Radioactive potassium occurs naturally in the earth and is therefore present in trace amounts in the food we eat and the water we drink.

Additionally, radioactivity from uranium and thorium is found in rocks and soil. For example, radon gas is a source of radiation that results from the decay of uranium found in the earth. Radon gas has recently been identified as a concern because it can penetrate through the foundations of homes. Recent studies show that radon gas contributes more than half of our radiation exposure each year.

MAN-MADE RADIATION

Our environment contains many sources of radiation. Some of these sources are natural in origin, either originating from the sun or from radioactive materials that have resided in the earth since its formation. Other sources are man-made. X-ray machines are used for dental and medical purposes, television sets are used for entertainment and microwave ovens are used to cook foods.

Nuclear power plants use the energy of radiation to convert water to steam, which is then used to generate electricity.



MEASURING RADIATION

Each type of radiation has somewhat different characteristics. It is possible to measure the biological effects of the different types of radiation in terms of a unit of exposure called a “rem.” Since this is a relatively large unit, the biological effects of radiation are described in millirem, which are a thousand times smaller than a rem.

Radiation measurement techniques are highly advanced and can detect small changes in the environmental radiation level. Results of extensive environmental monitoring confirm that routine plant operation does not contribute a significant amount of radiation exposure. People living near Fermi 2 receive less than *one millirem* a year due to the plant’s operation. This compares to the average 360 millirem of exposure received annually from natural background radiation and other man-made sources. Since every living thing on earth has been continuously exposed to radiation, such exposure is normal. The level of exposure from natural radiation and man-made sources is considered very low-level exposure. Scientists continue to study the risks associated with low level radiation exposure to determine its effects on humans. The studies show that negative health effects caused by low-level exposures cannot be distinguished from those caused by other environmental sources. After more than 80 years of study, radiation is readily detected, understood and strictly regulated.

POTASSIUM IODIDE

Radioactive iodine (radioiodine) is one of the products that could be released in a serious nuclear power plant accident. Potassium iodide (KI) is a non-radioactive form of iodine that may be taken to reduce the amount of radioactive iodine absorbed by the body’s thyroid gland. KI offers protection only to the thyroid gland and its use would be to supplement evacuation and in-place sheltering.

Evacuation and in-place sheltering are the primary means of protection in a radiological emergency. State and county officials will use the Emergency Alert System (EAS) to notify the public of the need to evacuate, to shelter, or to take KI. KI is available to persons within 10 miles of Fermi 2 through the Michigan Department of Health and Human Services (MDHHS). KI distribution is “Pre-Event” and detailed instructions on the distribution of KI can be found on the blue insert at the center of this booklet provided by MDHHS and on their website at www.michigan.gov/KI.

KI should not be used by people who are allergic to iodine. In the event of an allergic reaction, contact a doctor immediately.

NUCLEAR EMERGENCY CLASSIFICATION TERMS YOU SHOULD KNOW

There are four classifications for a nuclear emergency. They are explained in the order of their seriousness to help you understand their meaning.



1. UNUSUAL EVENT

The least serious of the four classifications. It means there is a minor problem at the plant. The NRC, state and local agencies are notified. Because of strict federal regulations, a number of problems are reported as unusual events even though they pose no danger to the public. No action on your part is necessary.

2. ALERT

This is an event which could reduce the plant's level of safety. There would be no danger to the public and you would not be required to take any action. Federal, state and local officials are notified. County and state officials and DTE Energy would activate their emergency operation centers.

3. SITE AREA EMERGENCY

A more serious accident has occurred at the plant. Radiation **could** be released from the plant, but at low levels which do not require you to take any action. Federal, state and local officials are notified.

4. GENERAL EMERGENCY

The most serious of the four classifications. A large amount of radioactive material is being released or could be released from the plant into the environment. Federal, state, local and DTE Energy officials would take actions to protect the public. EAS stations would broadcast information and instructions. Please follow those directions closely for your safety.

GLOSSARY OF TERMS

Background Radiation:

Radiation from natural radioactive materials in the environment. Includes solar and cosmic radiation and radioactive materials in the upper atmosphere, the ground, building materials, and the human body.

Boiling Water Reactor:

A nuclear power reactor cooled and moderated by water, which is allowed to boil in the core to generate steam that passes directly to the turbine. Fermi 2 has a boiling water reactor.

Congregate Care Center:

A designated location at which housing and food are provided for people who have been evacuated.

Decontamination:

The controlled removal of radioactive material from places or things where it does not belong.

Department Of Homeland Security (DHS):

An agency of the federal government responsible for approving state and local government emergency plans.

Emergency Alert System (EAS):

A communications system designed to broadcast emergency information to the public over designated radio and TV outlets.

Emergency Operation Center:

A place where state and local government officials manage the response to an emergency.

Emergency Planning Zone (EPZ):

An area surrounding a nuclear plant site for which planning has been done to ensure prompt and effective protection of the public in the event of a potential release or actual release of radioactivity.

Functional Needs:

The needs of an individual who under usual circumstances is able to function on their own or with support systems. However, during an emergency, their level of independence is challenged.

Joint Information Center (JIC):

The place where news reporters receive official information on a nuclear plant accident from government and utility officials. For Fermi 2, this is located at Monroe County Community College.

Millirem:

A unit used to measure radiation dose. It is 1/1000th of a rem (Roentgen Equivalent Man).

Nuclear Regulatory Commission (NRC):

The federal agency that regulates the nuclear industry.

Potassium Iodide (KI):

A non-radioactive form of iodine that may be taken to reduce the amount of radioactive iodine absorbed by the body's thyroid gland.

Protective Actions:

Emergency measures such as sheltering or evacuation that are taken to prevent or minimize radiation exposure.

Radiation:

Energy in the form of rays or particles, which is given off by radioactive materials.

Reception Center:

A designated location for receiving evacuees, including registration, first aid and assignment to a Congregate Care Center or medical facility.

Roentgen Equivalent Man (REM):

A standard unit of radiation that measures impact on human cells. Frequently, radiation dose is measured in millirem for low-level radiation.

NOTICE TO FARMERS, FOOD PROCESSORS & DISTRIBUTORS

PROTECTING THE FOOD SUPPLY DURING A RADIOLOGICAL EMERGENCY

This portion of the emergency preparedness booklet outlines plans to protect the food supply in the event of an emergency. Information in this section includes the following:

- How you will be notified in an emergency
- Actions which may be necessary to protect the food supply
- Who to contact for more information



SUMMARY

The public could be exposed to radioactive material in several ways following an accident. At first, particles and gases released into the air could be ingested or inhaled directly. Additional exposure could result from the consumption of food or milk contaminated by traces of the material. Farmers, food processors and distributors will be required to take steps to address the issue of food supply contamination. Proper actions will ensure that contamination is minimized or avoided.

If you are alerted to a radiological emergency by warning sirens or some other means, tune your radio to an EAS station (see page 4) for immediate information. You may also contact your Cooperative Extension Service agent or the Michigan Department of Agriculture and Rural Development for specific information. Locations and telephone numbers of local Cooperative Extension Service offices are listed at the end of this section of the booklet.

WHO PAYS FOR LOST OR DESTROYED FARM PRODUCTS

Farmers, food processors and distributors could face serious financial losses following a radiological emergency. However, federal law ensures that such losses will be reimbursed. The Price-Anderson Act, enacted by Congress in 1957, requires that the operators of nuclear power plants and certain other nuclear facilities purchase nuclear liability insurance policies for the protection of the public. As a result, no-fault insurance pools are in place to pay claims promptly without lengthy court hearings. Claimants need only prove that the injury or property damage resulted from the radiological emergency. Commercial insurance policies exclude coverage for nuclear accidents because Price-Anderson's provisions make such coverage unnecessary.

CONTAMINATION AND RADIATION

The term "contamination" is used in this portion of the booklet. It means, quite simply, radioactive material where it is not supposed to be. Food, water, or air is considered to be contaminated if it contains more or different types of radioactive material than would normally be present. Our bodies, for example, contain very small amounts of the radioactive elements potassium 40, carbon 14 and tritium. However, we are not considered to be contaminated because these elements exist within us naturally.



CONTAMINATION AND RADIATION (CONT.)

On the other hand, the presence of strontium 90, (a by-product of nuclear weapons testing) in food, air or water may be indicative of contamination. "Radiation" refers to the particles and waves given off by radioactive material. The radiation given off by contaminants could be considered harmful if the levels are high enough and the exposure lasts long enough.

HOW CONTAMINATION CAN OCCUR

Dust-sized radioactive particles released into the air during an accident could fall on fruits, vegetables or grains which could enter the food supply and be eaten by the public. For example, dairy cows and goats could eat grasses covered with radioactive iodine 131. Traces of the iodine could be passed through to the milk and then consumers. Iodine 131 has the potential to concentrate in the human thyroid gland where it could cause thyroid cancer (see page 16).

PUBLIC WARNING PROCESS

The State of Michigan is responsible for evaluating the severity of a nuclear emergency and ordering actions to protect the public and the food supply. If you live within 10 miles of the Fermi 2 power plant, your first warning may be the sounding of local emergency sirens activated at the state's direction. If you hear a siren, turn your radio on and tune it to a local station for immediate information transmitted through the Emergency Alert System (EAS).

If you live farther away, your first notification could come from the news media, EAS broadcasts, or a Cooperative Extension Service official. You may contact the Michigan Department of Agriculture and Rural Development directly if you have questions about a real or potential emergency.



DATA COLLECTION HELPS DETERMINE PROTECTIVE ACTIONS

Following an accidental release of radioactive material, emergency workers from the Michigan Department of Environmental Quality and the Michigan Department of Agriculture and Rural Development will collect air, water and soil samples to determine the existence, amount and location of any contamination. Samples of milk, forage, crops and processed foods may also be obtained. Field data and other factors will be used by the state to determine the best course of action to protect the public and the food supply. Because naturally occurring radioactive materials can always be found in the environment, DTE Energy and the Michigan Department of Environmental Quality conduct a continuous program to sample air, water, milk, vegetation and animal life near Fermi 2. In this way, they are able to establish a baseline for comparison in the event of an emergency.

The area designated for post-accident environmental sampling could extend as far as 50 miles from the plant site. Specific instructions regarding the collection and testing processes will be made available to farmers, food processors and distributors in the affected area by the Michigan Department of Agriculture and Rural Development.

SHELTERING IN AN EMERGENCY

If you are told to take shelter because of an emergency at a nuclear power plant, limit your outdoor activities as much as possible. Refer to page 5 of this booklet for specific actions you and your family should take for personal protection. Steps to protect the food supply are different and are outlined in this section of the booklet.



WHAT TO DO IF AN EVACUATION IS ORDERED

If you live within 10 miles of Fermi 2, you could be evacuated from the area in an emergency. You may be permitted, at the direction of the state, to re-enter the evacuation area temporarily to tend to the needs of your farm. You will receive specific instructions on routes to use, safety precautions and decontamination procedures. Your Cooperative Extension Service agent will be able to provide animal health and feeding guidance (see page 24).

PROTECTION OF LIVESTOCK/DAIRY ANIMALS

It is essential that priority be given to protecting dairy animals because radioactive materials can quickly enter the food chain through milk and other dairy products. If sheltering is required, shelter these animals first. Shelter livestock in covered barns or sheds unless extremely hot weather or other factors make this impossible. Provide your animals stored feed such as hay, silage and grain that has been stored in buildings or containers with limited water and dust exposure. Whenever possible, animals should be provided water drawn from wells. Open sources such as ponds, creeks or rivers should be avoided, if possible.



These protective measures will minimize the amount of radioactive material available to the animals. Since evacuation of farm animals will not normally be possible after a nuclear accident, sheltering and the use of stored feed are the most effective means of limiting contamination. If your poultry animals are normally kept outdoors, they should be brought inside if possible. Poultry raised in enclosed facilities and that receive stored feed and well water are more sheltered from radioactive contamination.

If animals have been exposed to radioactive particles carried by winds or rain from the accident site, they should be washed with uncontaminated water before being brought into a shelter.

SAVE YOUR ANIMALS

Do not destroy any animals unless directed to do so by state or federal authorities. Do not slaughter any animals except for immediate food needs. Generally, animals that are exposed to radioactive contaminants and rain water will survive and may be marketable and safe for human consumption. Do not allow animals to graze in open fields unless so directed by the State of Michigan, your Cooperative Extension Service agent or other governmental officials.

CONTAMINATED FEED*

Only in extreme emergencies may contaminated grain or hay be used for feed. If you must use feed which has been identified as contaminated, you may be able to reduce the level of contamination. For example, if the feed was stored outside, the contamination may be greatest at or near the surface of the feed pile. Removal of the top portion may greatly reduce the amount of contamination present.

Do not dispose of contaminated feed or hay because it may be salvageable over time. You should, however, keep it separated from non-contaminated feed supplies and animals so that the contamination is not spread. Contact your Cooperative Extension Service agent for guidance.

CONTAMINATED MILK AND OTHER FARM PRODUCTS*

If particles of radioactive material are present in large amounts, you may be advised not to use, consume or sell garden produce or animal products until the environment and food products are sampled and assessed by the Michigan Department of Environmental Quality and the Michigan Department of Agriculture and Rural Development. The presence of contamination may not mean that all of your crops will be lost. Iodine 131, an element produced in nuclear plants that could be released accidentally, loses half of its radioactivity in eight days.

Do not destroy food or feed unless spoilage has made it inedible. Generally, contaminated products may be salvageable after adequate time passes and they are properly processed.

Your Cooperative Extension Service agent can provide specific information. Milk contaminated at low levels by iodine 131 may be converted to powdered milk or cheese and then stored while the iodine's radioactivity diminishes. It may also be usable as animal feed.



FISH AND MARINE LIFE

Fish and other marine life raised in ponds, or taken from rivers, streams or lakes may continue to be harvested unless the Michigan Department of Natural Resources, Michigan Department of Agriculture and Rural Development, or Michigan Department of Environmental Quality have determined through laboratory analysis of samples that they are contaminated.



WATER SUPPLIES

Store as much water as possible for livestock. Cover open wells, tanks, and other storage containers to prevent or limit contamination. Close off the intakes from contaminated water sources (ponds, streams or cisterns) to prevent circulation of contaminated water. Generally, water from wells and water heaters should be safe to use.



Unless soils are highly permeable, contaminants deposited on the ground will normally travel very slowly into the aquifer. Contaminants may fall directly onto the surfaces of lakes and rivers where they can infiltrate ground water supplies. Streams and lake currents can transport contaminants many miles in a few hours.

CROPS IN THE FIELD*

Standing crops should generally be allowed to grow to maturity. The level of radiation exposure to plants that is likely to occur will not affect their growth. Most contaminants will be washed off or will diminish in strength naturally to safe levels during the growing process. If special harvesting procedures are necessary, your Cooperative Extension Service agent will advise you.

The extent to which pasture and forage plants collect and retain contaminants depends on the amount and type of contaminants involved, foliage characteristics and the amount of rain and wind occurring after the accident.

FRUITS AND VEGETABLES IN THE FIELD

Unprotected plants may have particles of contaminants on their surfaces. Leaves, pods and fruits should be washed, brushed, scrubbed or peeled before eating. Some leafy vegetables may be eaten after removal of the outer layers and a thorough washing.



Ripe fruits and vegetables may be lost through spoilage if high levels of contamination prevent the entry of field workers to harvest them. Those that do not need to be harvested immediately can be salvaged later when the area has been determined to be safe for harvesting.

HONEY AND APIARY PRODUCTS

Honey and bee hives should be sampled and analyzed by the Michigan Department of Environmental Quality or the Michigan Department of Agriculture and Rural Development if radioactive contamination is detected in the area. Contact your Cooperative Extension Service agent for guidance.



ROOTS AND TUBERS

Potatoes, carrots and similar plants can generally be eaten after they are thoroughly washed and peeled to remove soil particles and contaminants.

OTHER PLANTS OR WILDLIFE GUIDANCE

Wild plants, such as native herbs, mushrooms, dandelion greens, spearmint, peppermint or wintergreen may have particles of contamination on their surfaces. They should be washed, brushed, scrubbed or peeled before eating.



Wild game, such as deer, rabbit, squirrel, pheasant, or partridge, may have ingested contaminants through their normal browse. You may be advised by the Michigan Department of Natural Resources, Department of Environmental Quality, or the Michigan Department of Agriculture and Rural Development not to consume wild game until it has been sampled and assessed as safe.

After an event, there may be additional guidance from government officials on food, fruits and vegetables, feed and animal health.

** Government officials may restrict the movement of food and farm products and withhold them from the marketplace if they are suspected to be contaminated, until they are assessed to be safe.*

WEATHER AND TIME PLAY A PART

All radioactive materials lose their radioactivity over time. For example, some radioactive gases lose their radioactivity in a matter of minutes. Wind or heavy rain tend to remove radioactive materials rapidly from surfaces of plants. In some cases, however, hard rain falling on contaminated soil could splash the soil onto plant surfaces, thus increasing the amount of radioactive material on low standing plants.



SOIL RECOVERY

Several steps may be taken to restore soils contaminated in an accident. Non-use for a period of time may be required. In a worst-case situation, heavily contaminated soil may require removal and disposal elsewhere. Such a drastic action may not be feasible for large fields, but may be appropriate for small plots or areas, such as walkways near buildings where frequent human contact is likely. In less severe situations, fiber crops may be planted instead of fruits or vegetables. Deep plowing may be employed to keep radioactive contaminants below the root zone while the radioactivity decays over time. Liming may be used to limit the absorption of specific radioactive elements by crops. The Natural Resources Conservation Service of the U.S. Department of Agriculture will provide farmers with guidance as to the best means of restoring valuable soils to productive use.

FOOD PROCESSORS AND DISTRIBUTORS

Following a radiological emergency, government officials may restrict the movement of food products and withhold them from the marketplace if they are found to be contaminated. These products should not be released until they are considered to be safe for consumption, or until a decision has been made to dispose of them. You will be instructed how to safely handle and dispose of contaminated food products by the Michigan Department of Agriculture and Rural Development.

COOPERATIVE EXTENSION SERVICE AGENTS

Below is a list of Cooperative Extension Service offices near the Fermi 2 Power Plant.

Monroe County

Matthew Shane
District Coordinator
963 South Raisinville Road
Monroe, MI 48161-9704
517.403.1024

Wayne County

Richard Wooten
District Coordinator
28115 Meadowbrook Road
Novi, MI 48377
248.380.9100

How to Get More Information

If you have any questions about the information in this booklet, call or write:

**Monroe County
Emergency Management**
987 S. Raisinville Road
Monroe, Michigan 48161
734.240.3135

**Wayne County
Emergency Management**
33030 Van Born Rd.
Wayne, MI 48184
734.728.3711

**Fermi 2 Radiological
Emergency Response
Preparedness**
6400 N. Dixie Highway
Newport, Michigan 48166
734.586.4321