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January 17, 2014
NRC-14-0006

10CFR 50.54(q)

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington DC 20555-00001

Reference: Fermi 2
NRC Docket No. 50-341
NRC License No. NPF-43

Subject: Submittal of Revision 43 to the Fermi 2 Radiological
Emergency Response Preparedness (RERP) Plan

Pursuant to 10 CFR 50.54(q), DTE Electric Company hereby submits Revision 43 to the RERP Plan for Fermi 2.

Specific changes to the RERP Plan in Revision 43 include:

1. Changed Company name from Detroit Edison to DTE Energy per company brand name initiative guidance.
2. Updated the title of the National Response Plan to the National Response Framework as described by FEMA.
3. Added a description that Joint Information Center (JIC) personnel will be contacted at an Alert to assure timely response by the JIC, should the event escalate.
4. Added air temperature to the list of instrumentation on the 60 meter list of instrumentation.
5. Removed reference to the telephone to radio patching capability. This was removed previously upon upgrade to the telecommunications system and equipment.
6. Removed reference to the "badge exchange system" and statements to the effect of personnel leaving their keycards ("badges") with Security upon exit from the Protected Area (PA).
7. Added Recent changes to the drill demonstration criteria as defined in 10 CFR 50 Appendix E.IV.F.2. j into the Plan.
8. Corrected the step title and page reference for step H.1.5.


9. Added a description of the Incident Command Post (ICP) as a facility DTE personnel may report to during a security event.
10. Deleted the term "four part" as it is not used in the updated State training program.
11. As a result of the changes to 10 CFR 50 Appendix E.IV.5, a section has been added to include the estimate Emergency Planning Zone (EPZ) permanent resident population changes once a year, but no later than 365 days from the date of the previous estimate.
12. Updated Table B-2 description of "Typical DTE Positions" as a result of multiple organizational title changes.
13. Added the task of advising ICP personnel to the Radiation Protection Advisor, TSC and/or EOF Security Advisor, and Nuclear Operations Advisor.

Revision 43 to the RERP Plan was reviewed in accordance with 10 CFR 50.54(q). The changes made in this revision do not decrease the effectiveness of the RERP Plan as supported by Enclosure 1, Change Analysis Summary. Enclosure 2 is an uncontrolled copy of Revision 43. The changes made to the plan are tracked using revision bars.

In accordance with 10 CFR 50.4(b)(5)(ii), Revision 43 is being sent to the NRC Document Control Desk, NRC Region III Office, and the NRC Resident Inspector at Fermi 2.

Should you have any questions or require additional information, please contact me at (734) 586-5076.

Sincerely,



for Zackary W. Rad
Manager, Nuclear Licensing

WP/wp

Enclosures:

1. RERP Plan Revision 43 Change Analysis Summary
2. RERP Plan Revision 43

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cc: NRC Project Manager (w/Enclosure)
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**Enclosure 1
to
NRC-14-0006**

**RERP Plan Revision 43
Change Analysis Summary**

RERP Plan Revision 43 Change Analysis Summary

| Document: RERP Plan, Revision 43 | | |
|--|--|--|
| Listed below is each change by section and page, the reason for the change, and the basis for concluding that the revised plan program continues to satisfy the criteria for that plan or program. | | |
| Section/Page | Change | Basis |
| TOC, sections A,B,C,E,F,G,H,I,J,K,L, M,O,P, App 1/ multiple pages throughout Plan | Changed Company name from Detroit Edison to DTE Energy per company brand name initiative guidance. | <p>Fermi 2 Operating License Amendment No. 193 was revised to change the name of the licensee from "The Detroit Edison Company" to "DTE Electric Company."</p> <p>The change was approved by the Nuclear Regulatory Commission on July 12, 2013. As directed, all documentation will reflect the name of the parent company DTE Energy.</p> <p>The revision does not change the legal aspects of the Plan or program; therefore, is not a reduction in effectiveness of the RERP Plan.</p> |
| A.4/A-4 C.1/C-1 Appendix 4/ Appendix 4-2 | Updated the title of the National Response Plan to the National Response Framework as described by FEMA. | The reference to the national response strategy remains in effect. Title changes constitute editorial changes; therefore, the change as written is not a reduction in effectiveness of the RERP Plan. |

| Section/Page | Change | Basis |
|---------------|---|--|
| D.2.3.2.a/D-3 | Added a description that JIC personnel will be contacted at the declaration of an Alert to assure timely response by the JIC, should the event escalate. | 10 CFR 50.47(b) (2) requires in part that “timely augmentation of response capabilities is available and the interfaces among various onsite response activities and offsite support and response activities are specified.” The addition of notification to JIC personnel after notification to the OSC, TSC, and EOF staff assures timely activation of the JIC should the event escalate and will not impact the response by the other facilities. Therefore, the change as written is not a reduction in effectiveness of the RERP Plan. |
| Table H-1/H-9 | Added air temperature to the list of instrumentation on the 60 meter list of instrumentation. This was not originally stated; however, the delta temperature was specified which utilizes the air temperature at 10 meters and 60 meters. Therefore, the addition of the statement is a correction. | The instrumentation has been in place and utilized to determine the delta temperature which is used to determine Stability Class. This change is simply a correction to an implied element as delta temperature has been previously identified in the Plan. Corrections to information are editorial changes as there has been no change in the equipment used or the tasks currently performed. Therefore, the change as written is not a reduction in effectiveness of the RERP Plan. |

| Section/Page | Change | Basis |
|--------------|--|--|
| F.2.3/F-3 | <p>Removed reference to the telephone to radio patching capability. This was removed previously upon upgrade to the telecommunications system and equipment. The addition of direct ring lines, satellite phones at each facility and 800Mhz radios has made this capability obsolete.</p> | <p>10 CFR 50.47 (b) (6) requires "Provisions exist for prompt communications among principal response organizations to emergency personnel and to the public".</p> <p>10 CFR 50 Appendix E.IV.D. 3 requires licensees to maintain the capability to notify responsible State and local governmental agencies within 15 minutes after declaring an emergency.</p> <p>Dedicated phone lines with direct ring capabilities along with the recent upgrades and availability assures prompt and timely communication with the off-site response organizations. The capabilities are maintained.</p> <p>Therefore, there is not a reduction of the effectiveness of the Plan or program.</p> |
| J.2.2/J-3 | <p>Removed reference to the "badge exchange system" and statements to the effect of personnel leaving their keycards ("badges") with Security upon exit from the Protected Area (PA). This was in support of the implementation of hand geometry for access to the PA.</p> | <p>The Plan requires Assembly and Accountability to be completed within 30 minutes upon order. This time frame has not been changed. The process for performing Assembly and Accountability has not been altered by the addition of hand geometry. Personnel are accounted for either by security computer system queries or by manually inspecting/accounting personnel keycards.</p> <p>Therefore, there is not a reduction in the effectiveness of the Plan or program.</p> |

| Section/Page | Change | Basis |
|---------------------|--|---|
| N.2.6/N-2 | Recent changes to the drill demonstration criteria as defined in 10 CFR 50 Appendix E.IV.F.2.j requires implementation into the drill program. Therefore, added this description directly into the Plan. | The change as written is in direct alignment with 10 CFR 50 Appendix E.IV.F.2. j. The change as written continues to meet the guidance set forth in 10 CFR 50 Appendix E.IV.F 2. j. Therefore, there is no reduction in the effectiveness of the Plan or program. |
| TOC/iv | Corrected the step title and page reference for step H.1.5 as this was completed in revision 42 of the RERP Plan. | The change was to correct the step title made in the Table of Contents in revision 42 of the RERP Plan. This constitutes an editorial change and as such does not reduce the effectiveness of the Plan or program. |
| H.1.6/H-5 TOC/iv | Added a description of the Incident Command Post (ICPs) as a facility DTE personnel may report to during a security event. | 10 CFR 50 Appendix E.IV.E discusses emergency facilities and equipment. 10 CFR 50 Appendix E.IV.F.2.c (3), (4) and (5) require participation in hostile action exercises. As such, Fermi 2, in addition to on-site and off-site facilities will also support off-site agencies as part of the Unified Command system at an ICP. The change as written simply describes the ICP in general terms and level of support provided. There is no reduction in effectiveness of the Plan or program. |

| Section/Page | Change | Basis |
|----------------------|---|---|
| O.2/O-2 | The State has updated their training program containing the required information as described; however, it does not use “four part”; therefore, that term has been deleted. | Training by the State to off-site agencies has been provided in a different format than the previous four part videotape and is led by instructors during “REP-1” training. It contains all required elements as discussed in the Plan. Therefore, there is no reduction in effectiveness to the Plan or program as a result in this minor change in wording. |
| J.4.2.1/J-5 | As a result of the changes to 10 CFR 50 Appendix E.IV.5, a section has been added to include the estimate EPZ permanent resident population changes once a year, but no later than 365 days from the date of the previous estimate. | By incorporating the criteria from 10 CFR 50 Appendix E.IV.5 into the RERP Plan, regulatory compliance is maintained. Therefore, there is no reduction in effectiveness to the Plan or program. |
| Table B-2/B-4 – B-14 | As a result of multiple organizational title changes, Table B-2 description of “Typical DTE Positions” has been updated. | The change as written only clarifies the typical DTE position titles that are commonly used for ERO positions. The training qualifications for the individual ERO positions have not changed. This constitutes an editorial change. Therefore, there is no reduction of effectiveness to the Plan or program. |

| Section/Page | Change | Basis |
|---------------------------|--|---|
| Table B-2/ B-7, 9, 12, 15 | Added the task of advising Incident Command Post (ICP) personnel to the Radiation Protection Advisor, TSC and/or EOF Security Advisor, and Nuclear Operations Advisor. This was done to improve communication and understanding during a security based event. | The change as written adds advising ICP to the stated positions. This is only applicable during ICP activation during a significant security event. This does not impact their normal advisory duties as these positions are redundant. Therefore, there is no reduction in effectiveness to the Plan or program. |

**Enclosure 2
to
NRC-14-0006**

RERP Plan Revision 43

**U.S. Nuclear Regulatory Commission
Docket No. 50-341
License No. NPF-43**

Fermi 2

Radiological Emergency Response Preparedness Plan

DTE Energy

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LIST OF ABBREVIATIONS

| | | |
|-------|---|--|
| AB | - | Auxiliary Building |
| APRM | - | Average Power Range Monitor |
| ARM | - | Area Radiation Monitor |
| BWR | - | Boiling Water Reactors |
| CAS | - | Central Alarm Station |
| CCTV | - | Closed Circuit Television |
| CHRRM | - | Containment High Range Radiation Monitor |
| COP | - | Combination Operating Panel |
| CR | - | Control Room |
| CRS | - | Control Room Supervisor |
| CWPH | - | Circulating Water Pump House |
| DID | - | Direct Inward Dialing |
| DLR | - | Dosimeter of Legal Record |
| DRD | - | Direct Reading Dosimeter |
| EAS | - | Emergency Alert System |
| ECCS | - | Emergency Core Cooling Systems |
| EDG | - | Emergency Diesel Generator |
| EECC | - | Employee Emergency Communications Center |
| EECW | - | Emergency Equipment Cooling Water |
| EMD | - | Emergency Management Division |
| EMS | - | Emergency Medical Services |
| ENS | - | Emergency Notifications System (NRC) |
| EOC | - | Emergency Operations Center |
| EOF | - | Emergency Operations Facility |
| EPA | - | Environmental Protection Agency |
| EPs | - | Radiological Emergency Response Preparedness Implementing Procedures |
| EPPOS | - | Emergency Preparedness Positions |
| EPZ | - | Emergency Planning Zone |
| ERDS | - | Emergency Response Data System |
| ERF | - | Emergency Response Facility |
| FEMA | - | Federal Emergency Management Agency |
| FSAR | - | Final Safety Analysis Report |
| GE | - | General Electric |
| GMJ | - | General Maintenance Journeyman |
| GPM | - | Gallons Per Minute |
| GSW | - | General Service Water |
| GTOC | - | General Training and Orientation Center |
| HPCI | - | High Pressure Coolant Injection |
| HVAC | - | Heating, Ventilation, and Air Conditioning |
| I&C | - | Instrument & Controls |
| INPO | - | Institute of Nuclear Power Operations |
| IPCS | - | Integrated Plant Computer System |
| IRM | - | Intermediate Range Monitor |

LIST OF ABBREVIATIONS (Con't)

| | | |
|---------|---|---|
| JIC | - | Joint Information Center |
| JIT | - | Joint Information Team |
| LOCA | - | Loss of Coolant Accident |
| LPCI | - | Low Pressure Coolant Injection |
| MEMP | - | Michigan Emergency Management Plan |
| MREM | - | Millirem |
| MSIV | - | Main Steam Isolation Valve |
| uCi/cc | - | Microcuries per cubic centimeter |
| uCi/g | - | Microcuries per gram |
| uCi/kg | - | Microcuries per Kilogram |
| uCi/l | - | Microcuries per Liter |
| uCi/sec | - | Microcuries per second |
| NOAA | - | National Oceanic and Atmospheric Administration |
| NRP | - | National Response Plan |
| NOC | - | Nuclear Operations Center |
| NRC | - | Nuclear Regulatory Commission |
| NSO | - | Nuclear Supervising Operator |
| NSRG | - | Nuclear Safety Review Group |
| ODCM | - | Offsite Dose Calculation Manual |
| OSC | - | Operational Support Center |
| OSRO | - | Onsite Review Organization |
| PAG | - | Protective Action Guideline |
| PBX | - | Private Branch Exchange |
| PRM | - | Process Radiation Monitor |
| PRMS | - | Process Radiation Monitoring System |
| RB | - | Reactor Building |
| RBCCW | - | Reactor Building Closed Cooling Water |
| RCIC | - | Reactor Core Isolation Cooling |
| RERP | - | Radiological Emergency Response Preparedness |
| RET | - | Radiological Emergency Team |
| RHR | - | Residual Heat Removal |
| RWB | - | Radwaste Building |
| SAS | - | Secondary Alarm Station |
| SBC | - | Southern Bell Communications |
| SGTS | - | Stand-by Gas Treatment System |
| SM | - | Shift Manager |
| SRV | - | Safety Relief Valve |
| SSE | - | Safe Shutdown Earthquake |
| STA | - | Shift Technical Advisor |
| TAC | - | Technical Assistance Center |
| TB | - | Turbine Building |
| TLD | - | Thermoluminescent Dosimeter |
| TSC | - | Technical Support Center |

PREFACE

The Radiological Emergency Response Preparedness (RERP) Program for Fermi 2 consists of the RERP Plan, RERP Implementing Procedures (EPs), and related emergency preparedness plans and procedures of federal, state, and local government agencies. The purpose of the program is to provide protection of plant personnel and the general public, to restrict the release of radioactivity, and to secure plant systems in a stable and safe configuration in the event of an emergency situation at Fermi 2. The objectives of the Fermi 2 RERP Program are to provide:

- Effective coordination of emergency activities among onsite and offsite organizations having an emergency response role
- Early warning and clear instructions to the general public in the affected area in the event of a radiological emergency
- Continued assessment of actual or potential consequences both onsite and offsite
- Effective and timely implementation of emergency measures
- Continued maintenance of an adequate state of emergency preparedness

The RERP Plan describes the RERP Program which meets the standards of emergency plans as defined in 10CFR50.47(b), 10CFR50, Appendix E, NUREG-0654/FEMA-REP-1, Revision 1, and the Fermi 2 Technical Specifications, Section 5. Changes to the RERP Plan may not be made without NRC permission unless the criteria of 10CFR50.54(q) is met. Additionally, procedures which implement the RERP Plan are subject to the same regulatory criteria.

The RERP Plan is applicable to Fermi 2 and its environs, including a plume-exposure pathway Emergency Planning Zone (EPZ) extending 10 miles and an ingestion pathway EPZ extending 50 miles (See Figures A-1 and A-2). The 10-mile EPZ for the plume-exposure pathway includes all areas within 10 miles of Fermi 2 in Monroe County, Michigan; a small portion of the southern tip of Wayne County, Michigan; and a small portion of the Province of Ontario, Canada. The 50-mile ingestion pathway includes portions of Michigan, Ohio, and Canada.

The Michigan Emergency Management Plan, the Monroe County Emergency Management Plan, and the Wayne County Emergency Operations Plan describe the emergency planning and response for these respective government agencies.

A. ASSIGNMENT OF RESPONSIBILITY (ORGANIZATION CONTROL)

RERP planning for an incident at Fermi 2 is a cooperative effort involving DTE Energy, the State of Michigan, local government agencies, federal government agencies, provincial agencies in Ontario, Canada and various organizations that provide support for these agencies. Each organization has the responsibility to assure, through coordinated planning and regularly scheduled exercises, that it can provide an effective emergency response 24 hours a day. The responsibilities of the state and local government Emergency Response Organizations are summarized in Figures A-3 through A-5. The interrelationships of the organizations supporting the Fermi 2 emergency response are shown in Figure A-6.

A.1 DTE Energy

In the event of a radiological emergency at Fermi 2, Edison's Onsite Emergency Response Organization will initiate corrective and protective actions to control the incident and mitigate its effects. The incident will be classified as an Unusual Event, Alert, Site Area Emergency, or General Emergency based upon the criteria in Section D. DTE Energy provides initial emergency notifications to the State of Michigan via the Michigan State Police, Monroe and Wayne Counties via the Monroe and Wayne County Sheriff's Offices, and to the Province of Ontario, Canada via the Ontario Emergency Measures Duty Officer. These offices have communication centers staffed 24 hours a day. The Michigan Department of State Police will coordinate all subsequent information updates to the Province of Ontario, Canada.

Throughout an emergency situation, DTE Energy maintains control over onsite personnel, equipment, and activities. The Emergency Officer has ultimate responsibility for the DTE Energy emergency response. The Fermi 2 Emergency Response Organization evaluates plant, meteorological, and radiological conditions to provide timely protective action recommendations to State and/or local Emergency Response Organizations.

A.2 State of Michigan

The Governor of the State of Michigan has complete authority over offsite emergency operations and decision making when a radiological emergency occurs at Fermi 2 and a "State of Emergency" or a "State of Disaster" is declared under the provisions of Act 390 of the Public Acts of 1976. The State Director of Emergency Management and Homeland Security Division (also the State Director of Michigan State Police) under the direction and auspices of the Governor, has the responsibility for coordinating the state's emergency response. The Deputy State Director of Emergency Management and Homeland Security commands the Emergency Management and Homeland Security Division, which directs and coordinates various State agency responsibilities.

State responsibilities include, but are not limited to, radiological assessment via environmental sampling and monitoring, implementation of protective actions (evacuation or shelter), control of food and water supplies, damage assessment, medical services, sanitation, environmental protection, dissemination of warning and notification information, security, traffic control and maintenance, public information, and crisis counseling. The Michigan Emergency Management Plan (MEMP) details the specific duties of each State agency or department.

The MEMP is activated when the Governor, as a result of available information or at the request of a county, declares a State of Emergency or a State of Disaster. When a disaster has been declared, available State resources are mobilized for the response, and state authority supersedes local authority. Local plans are also activated at this time, if not previously activated.

The State Emergency Operations Center (EOC) in Lansing is activated for coordination of state emergency activities. The EOC is staffed by State personnel in accordance with the MEMP as summarized in Figure A-6 to provide the executive liaison and data verification.

Communications with the State from DTE Energy are transmitted via direct dial or PBX telephone lines. The state has provided for, and is capable of, 24-hour-per-day operation for a protracted period of time during an emergency situation at Fermi 2.

The Department of State Police and the Department of Environmental Quality are the primary State Response Agencies during a radiological emergency. The Department of State Police is responsible for general planning, command and control, and overall direction and coordination including:

- Receiving initial notification of the emergency and notifying other state agencies.
- Providing periodic information updates to affected local governments, adjacent states, and the Joint Information Center (JIC).
- Notifying and providing periodic information updates to the Province of Ontario, Canada through the Ministry of the Community Safety and Correctional Services in Toronto, Canada.
- Operating the State EOC
- Coordinating with local organizations to implement protective actions to evacuate and/or shelter the general population.
- Notifying the Federal Emergency Management Agency (FEMA) and other Federal agencies as required and providing liaisons to these agencies.

The Department of Environmental Quality is responsible for environmental monitoring and formulating ingestion pathway protective actions for the general public.

A.3 Local Governments

Wayne and Monroe County governments have established emergency response facilities in accordance with their individual emergency preparedness plans. Upon notification of a radiological emergency at Fermi 2, Monroe County Central Dispatch initiates notification procedures in Monroe County.

When notified of an emergency at Fermi 2, Wayne County Central Communications initiates notification procedures in Wayne County, including calling the Gibraltar, Flat Rock, and Rockwood Police Departments and the Brownstown Township Fire Department. DTE Energy maintains communications with Wayne and Monroe Counties until the State EOC in Lansing is activated, at which time all communications with the counties are channeled through the State EOC.

The Chairperson of the Monroe County Board of Commissioners is responsible for Monroe County emergency preparedness and has the authority to declare a “State of Emergency” within the county in the event of a radiological emergency at Fermi 2. If a “State of Emergency” is declared, the Monroe County Emergency Management Plan is implemented and the Monroe County EOC is activated at the Monroe County Emergency Management Division. The EOC is staffed with personnel from county agencies as shown in Figure A-4.

The Wayne County Executive is responsible for Wayne County emergency preparedness and the implementation of the Wayne County Emergency Operations Plan. The Wayne County EOC is located at the Wayne County Emergency Management Division, Romulus, Michigan and is activated upon notification of a radiological emergency at Fermi 2. The Wayne County EOC is staffed with personnel from county agencies as shown in Figure A-5. In addition, personnel from Brownstown Township will occupy the Wayne County EOC.

County responsibilities include, but are not limited to, access and traffic control, firefighting and rescue, public warning and information, sheltering (involving food, clothing, sanitation, medical services, and counseling), decontamination centers, transportation of persons and supplies, and evacuation of the general population. These actions are directed and coordinated from the respective county EOCs. These local emergency response activities are coordinated with the state through the State EOC. Both Monroe and Wayne Counties have made provisions for and are capable of 24-hour operation for extended periods of time during an emergency situation at Fermi 2.

A.4 Federal Agencies

Federal Agencies will be activated according to the National Response Framework (NRF) to provide support to utility, state, or local authorities upon notification from the utility or state of an emergency that may affect public health and safety. The U.S. Nuclear Regulatory Commission (NRC) response is governed by the NRC Incident Response Plan (NUREG-0728). The scope and extent of the NRC response depends on the incident's severity and typically correlate with information reported by the Licensee. The NRC performs independent assessments of incidents and potential offsite consequences and oversight by monitoring, evaluating protective action recommendations, advising, assisting, and in rare circumstances, providing direction. Further actions of the NRC and the Federal Emergency Management Agency (FEMA) are outlined in applicable annexes to the NRP.

The U.S. Coast Guard will provide assistance through the NRP upon request from the State of Michigan in the event that an emergency at Fermi 2 may affect activities on Lake Erie, including Canadian waters.

FEMA is responsible for ensuring that offsite protective actions are carried out appropriately and expeditiously by the state. FEMA also provides coordination of other federal emergency response agencies and provides back-up provisions to support state and local emergency response organizations.

A.5 Emergency Response Services

The nature of an emergency may require augmenting onsite response groups with offsite services, personnel, and equipment. Support from offsite organizations, such as those listed in Appendix 1, may be obtained by direct notification to the individual organization by the Emergency Director or Emergency Officer. Types of services that may be required are briefly outlined below.

- A.5.1 Medical Services** - In the event of an emergency involving an injury to onsite personnel, the medical staff at Mercy-Memorial Hospital (Monroe) or Oakwood Southshore Medical Center (Trenton) is called upon to provide medical services.

The Control Room ensures notification of the appropriate hospital and provision of pertinent information if the injury involves radiological contamination. Radiation Protection personnel are dispatched to perform contamination surveys for the ambulance service and at the hospital.

- A.5.2 Ambulance Service** - Contractual arrangements have been made with an ambulance service for the transportation of patients from Fermi 2. This includes individuals who may have injuries complicated by the presence of radioactive contamination or who may have exceeded personnel exposure limits. They will be transported to either Mercy-Memorial Hospital or Oakwood Southshore Medical Center for treatment.

- A.5.3 Firefighting Assistance** - In the event the Fermi 2 Fire Brigade requires assistance with an onsite fire, the Frenchtown Fire Department will be called. All firefighting personnel periodically receive training for fighting fires involving radiological hazards.

A.5.4 **Law Enforcement Services** - Civil disorder or other plant security threats may require prompt augmentation of the onsite security force. In the event law enforcement services are required, the Monroe County Sheriff's Department or the local Michigan State Police barracks (Monroe Post #14) are notified.

A.5.5 **Technical Assistance** - DTE Energy has entered a mutual emergency assistance agreement with Entergy Nuclear Palisades, L.L.C. and Indiana Michigan Power. This agreement provides personnel and equipment for offsite radiation monitoring activities.

In addition, the Institute of Nuclear Power Operations (INPO) may be called for technical support. A dedicated emergency call number is capable of activating the INPO support function on a 24-hour basis. INPO will be able to provide the following support functions:

- Assistance in locating sources of emergency staff with nuclear and health physics experience.
- Analysis of the operational aspects of the incident.
- Obtaining nuclear operations experts for assistance and advice in technical matters.
- Assistance in locating sources of specialized equipment.

Technical/engineering assistance is also available from the following organizations:

- General Electric Company
- Sargent and Lundy Engineers
- URS Washington Division

Assistance in the analysis of environmental samples will be performed by the contractor or vendor who conducts the routine Radiological Environmental Monitoring Program.

A.6 **Continuity Of Resources**

Sufficient staffing is provided to ensure that the Fermi 2 Emergency Response Organization can operate on a continuous, 24-hour basis for extended periods of time. Communications systems between DTE Energy and offsite authorities are available and are staffed 24 hours a day. These systems are discussed in detail in Section F of this plan.

DTE Energy's Vice President, Nuclear Generation is responsible for ensuring continuity of technical, administrative, and material resources.

Figure A-1

FERMI 2 10-MILE EMERGENCY PLANNING ZONE

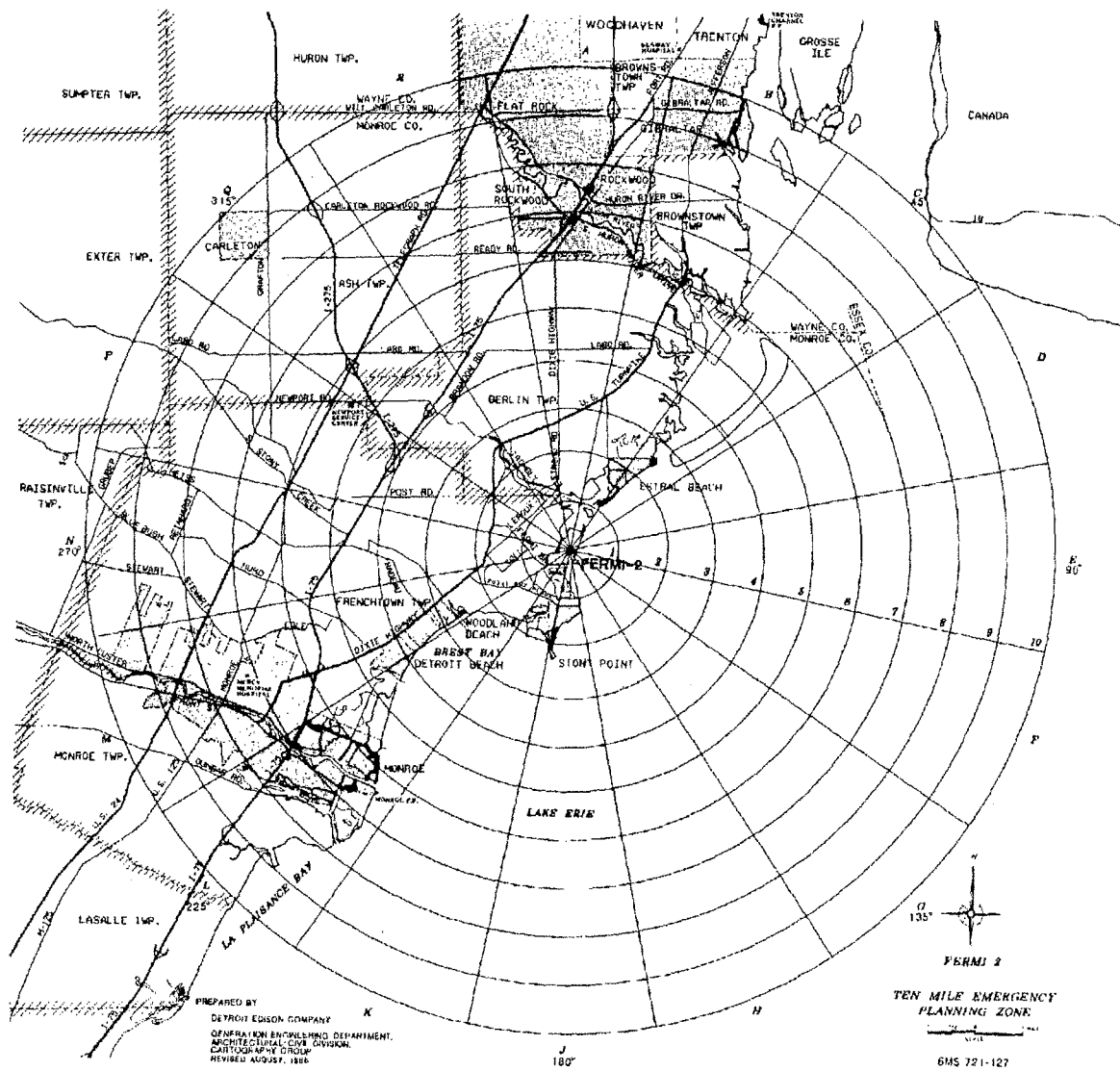


Figure A-2

FERMI 2 50-MILE EMERGENCY PLANNING ZONE

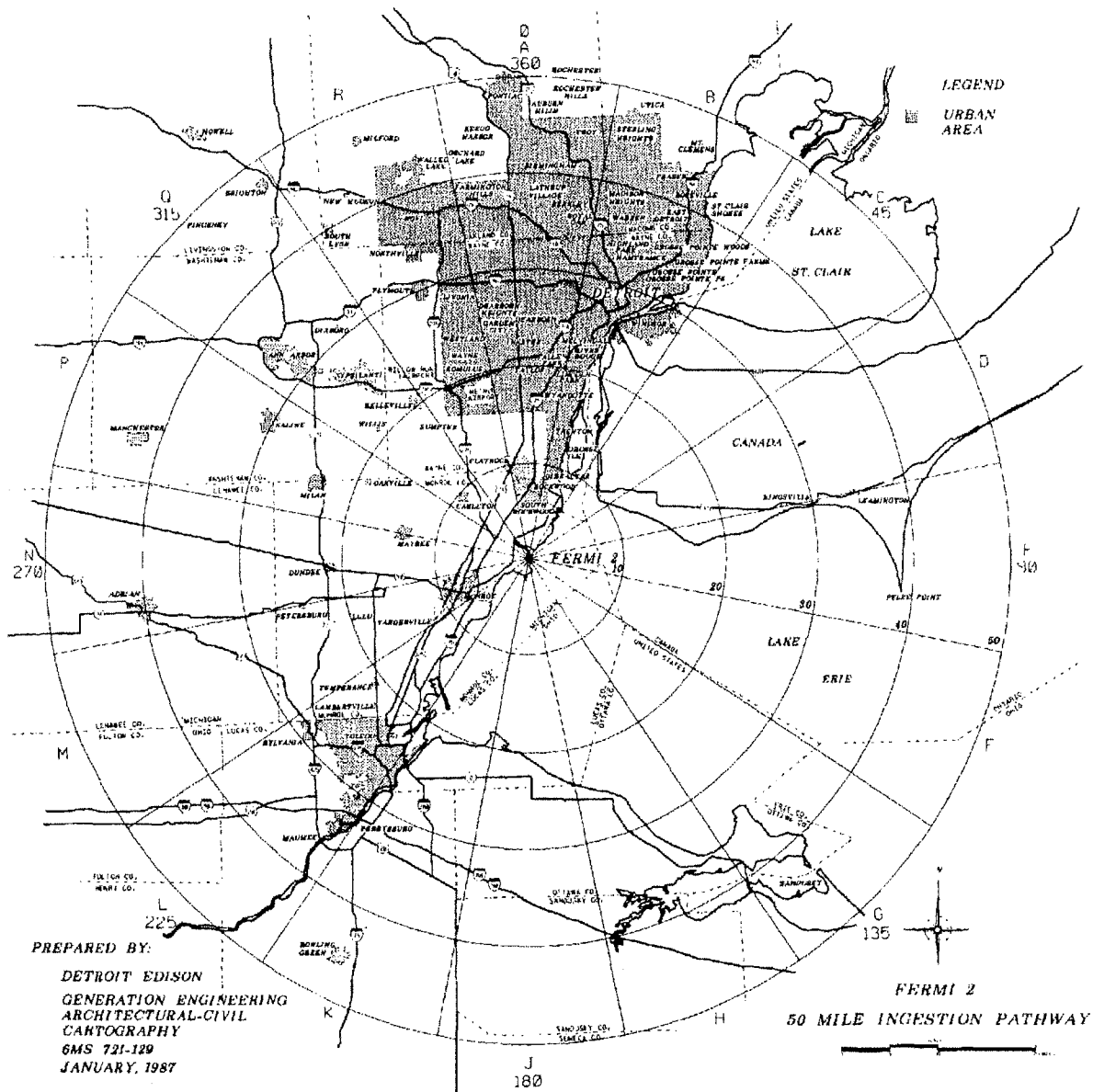


Figure A-3

STATE OF MICHIGAN AGENCY ASSIGNMENT AND FUNCTION CHART

| AGENCY ASSIGNMENT | AGRICULTURE | LABOR & ECON. GROWTH | CORRECTIONS | EDUCATION | EXECUTIVE (GOV) | ENVIRO QUALITY | MILITARY AFF | NATURAL RES | COMM HEALTH | FAMILY IND AGY | STATE POLICE | TRANSPORTATION |
|----------------------------|-------------|----------------------|-------------|-----------|-----------------|----------------|--------------|-------------|-------------|----------------|--------------|----------------|
| DISASTER FUNCTION | | | | | | | | | | | | |
| Access Control | | | | | | | | | | | P | S |
| Accident/Dose Assessment | | | | | | P | | | | | S | |
| Alerting | | | | | | | | | | | P | |
| Classification of Accident | | | | | | S | | | | | S | |
| Clothing, Provision of | | | S | | | | | | S | P | | |
| Communications | | | | | | S | S | S | | | P | S |
| Crisis Counseling | | | | | | | | | P | S | | |
| Damage Assessment | | | | | | | | | | | P | |
| Decontamination Guidance | | | | | | P | | | | | | |
| Direction and Control | | | | | P | | | | | | S | |
| Dosimetry | | | | | | P | | | | | S | |
| Emergency Medical Service | | | | | | | | | P | | | |
| Evacuation Authority | | | | | P | | | | | | S | |
| Exposure control | | | | | | P | | | | | | |
| Fire | | | | | | | | P | | | S | |
| Food | S | | S | S | | | S | | S | P | | |
| Heavy Rescue | | | | | | | | | | | | P |
| Housing | | | | S | | | S | | S | P | | |
| Insurance Claims | | P* | | | | | | | | | | |
| Law Enforcement | | | | | | | | S | | | P | |
| Liaison to County | | | | | | | | | | | P | |
| Liaison to Federal | | | | | | | | | | | P | |
| Liaison to Utility | | | | | | | | | | | P | |
| Meteorological Analysis | P | | | | | | | | | | | |
| Monitoring | | | | | | P | | | | | | |
| Notification | | | | | | | | | | | P | |
| Planning | | | | | | | | | | | P | |
| Public Health | | | | | | S | | | P | | | |
| Public Information | | | | | | S | | | | | P | |
| Radioprotect. Drug Guid. | | | | | | S | | | P | | | |
| Reentry Authority | | | | | P | | | | | | S | |
| Sampling | S | | | | | P | | S | | | | |
| Sanitation | | | | | | | | | P | | | |
| Social Services | | | | | | | | | | P | | |
| Traffic Control | | | | | | | | | | | P | S |
| Training/Exercise | | | | | | | | | | | P | |
| Transportation, Public | | | S | P | | | S | | S | | | S |
| Waste Removal | | | | | | P | | | | | | |

P = Primary Responsibility

S = Support Responsibility

*(Insurance Bureau)

Figure A-4

MONROE COUNTY EMERGENCY AGENCY ASSIGNMENT AND FUNCTION CHART

| AGENCY ASSIGNMENT | | | | | | | | | | | | | |
|-----------------------------|------------------------|---|------------------------------|------------------------|---------------------------|--------------------------|-----------------------------|------------------------|----------------------|---------------------|------------------------|-----------------------------------|-----------------------|
| DISASTER FUNCTION | CHIEF EXECUTIVE | EMERGENCY MANAGEMENT COORDINATOR | WARNING/COMMUNICATION | SCHOOL SERVICES | PUBLIC INFORMATION | DAMAGE ASSESSMENT | RADIOLOGICAL DEFENSE | LAW ENFORCEMENT | FIRE SERVICES | PUBLIC WORKS | HEALTH SERVICES | EMERGENCY MEDICAL SERVICES | HUMAN SERVICES |
| Command & Control | P | S | | | | | | | | | | | |
| Alert Notifications | | S | P | | | | S | S | S | | | | |
| Communications | | | P | | | | | | | | | | |
| Damage Assessment | | | | | | P | | | | | | | |
| Public Information | | | | | P | | | | | | | | |
| Accident Assessment | | | | | | P | S | S | S | | | | |
| EAS Activation | | S | P | | | | | | | | | | |
| Evacuation | P | S | | | | | | S | P | | | | |
| Public Health | | | | | | | | | | | P | | |
| Human Services | | | | | | | | | | | | | P |
| Interagency Coordination | | P | | | | | | | | | | | |
| Mass Feeding – Care | | | | | | | | | | | | | P |
| Missing Person Inquiry | | | | | | | | | | | | | P |
| Notification – Key Official | | P | P | | | | | | | | | | |
| Command Post | | | | | | | | S | P | | | | |
| Fire & Rescue | | | | | | | | S | P | | | | |
| Traffic Control | | | | | | | | P | S | S | | | |
| Emergency Medical Services | | | | | | | | | S | | S | P | |
| Law Enforcement | | | | | | | | P | | | | | |
| Transportation | | | | P | | | | S | S | | | | |
| Protective Actions | P | P | | | | | P | | | | | | |
| Radiation Exposure Control | | | | | | | P | | | | S | | |
| School Services | | | | P | | | | | | | | | |
| Temporary Shelter | | | | S | | | | | | | | | P |
| Decontamination | | | | | | | S | | P | | | | |
| EOC Operations | | P | | | | | | | | | | | |
| Utilities Coordination | | | S | | | | | | | P | | | |
| Rumor control | | | | | P | | | | | | | | |
| Victim Identification | | | | | | | | | | | P | | |
| Water Use Restriction | | | | | | | | | | | P | | |
| Transportation of Goods | | | | | | | | | | P | | | |

P = Primary Responsibility

S = Support Responsibility

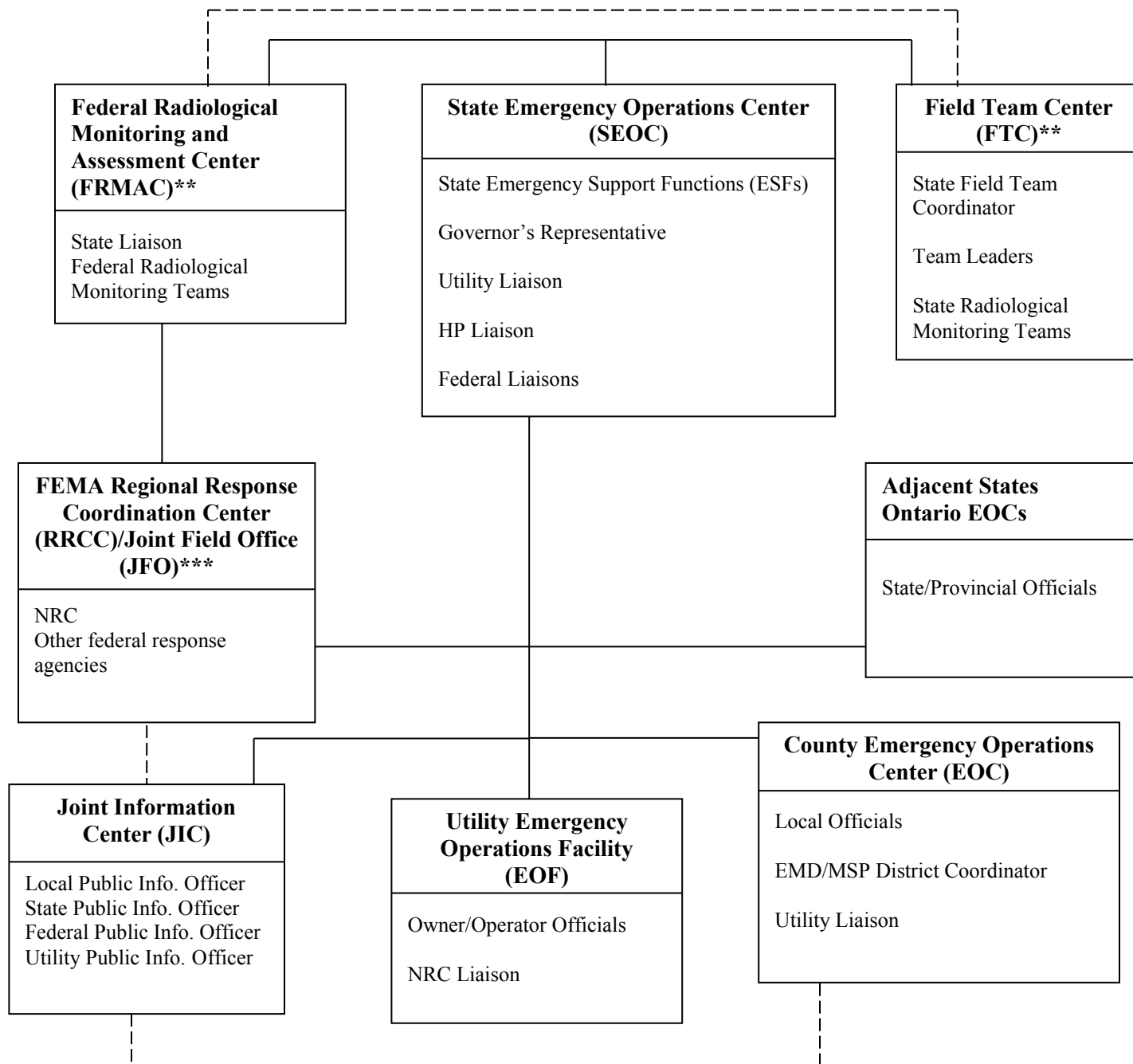
Figure A – 5

WAYNE COUNTRY EMERGENCY FUNCTION AND AGENCY ASSIGNMENT CHART

| INDIVIDUAL OR ANNEX GROUP | PRIMARY FUNCTION/RESPONSIBILITY | SUPPORT FUNCTION/RESPONSIBILITY |
|----------------------------------|--|---|
| Chief Executive | Command & Control Protective Response | Public Information |
| DHSEM | | Command & Control, Public Information, Alert & Notification, Accident Assessment, Communications, Public Health, Social Services, Fire/Rescue, Emergency Medical Services, Traffic & Access Control, Law Enforcement, Transportation, Protective Response, Exposure Control |
| Communications Officer | Communications, Public Information, Alert & Notification | |
| Damage Assessment | Accident Assessment | Accident Assessment, Exposure Control |
| Public Information | Public Information | |
| Radiological Protection | Accident Assessment, Exposure Control | Protective Response |
| Law Enforcement | Law Enforcement, Traffic & Accident Control | Traffic & Access Control, Protective Response, Exposure Control |
| Fire/Rescue | Fire Rescue, Emergency Medical Services | Traffic & Access Control, Protective Response, Exposure Control |
| Health Services | Health Services | Social Services, Emergency Medical Services |
| Public Services | Traffic & Access Control | Public Health, Fire/Rescue, Transportation, Protective Response |
| Family Independence Agency | Social Services | Public Health, Emergency Medical Services, Protective Response |
| Schools | Public Health, Transportation | Social Services, Protective Response |

Figure A-6

EMERGENCY OPERATION CENTER INTERRELATIONSHIPS*



*For a federal Incident of National Significance which results in disaster/emergency declarations at both the state level (under 1976 PA 390) and federal level (Stafford Act).

**When the FRMAC is opened, the FTC will normally be incorporated into that facility.

***The RRCC coordinates regional response efforts and implements federal program support until a JFO is established locally.
(Dashed lines indicate key coordination linkages)

B. EMERGENCY RESPONSE ORGANIZATION

B.1 Nuclear Generation Organization

- B.1.1 Normal Organization** - The Nuclear Generation Organization includes operating, technical and administrative support, engineering, and management personnel.

Figure B-1 is a chart showing the functional levels and detailing the plant and technical support organizations. The Nuclear Generation Organization is onsite during normal working hours Monday through Friday, excluding holidays. Plant Operations, Radiation Protection, Chemistry, and Security personnel are onsite on a 24-hour basis including holidays. A detailed on-shift staffing analysis demonstrating that on-shift personnel assigned emergency plan implementation functions are not assigned responsibilities that would prevent the timely performance of their assigned functions. Results of the analysis can be found in "DTE Energy Enrico Fermi Unit 2 Power Plant On-shift Staffing Analysis Report" which is maintained on file. The minimum shift complement is specified in Technical Specifications Section 5.2.2.

- B.1.2 Emergency Response Organization** - In the event of an emergency at Fermi 2, the Emergency Response Organization is activated. The normal complement of shift personnel is augmented according to the emergency classification. The Nuclear Generation Organization provides the majority of the personnel required to staff the organization. Additional DTE Energy personnel are called upon to provide specific expertise as required.

During an emergency, the Emergency Response Organization is located in the Control Room and the three Emergency Response Facilities (ERFs) described in Section H of this plan: Operational Support Center (OSC); Technical Support Center (TSC); and Emergency Operations Facility (EOF). It is DTE Energy's intent to activate the ERFs based on the emergency classification. Figures B-2 through B-5 show the Emergency Response Organization in the Control Room, OSC, TSC and EOF.

The Emergency Response Organization is predefined by the Manager, RERP. Assignments to various positions are specified to provide timely, unambiguous staffing. Table B-1 shows the minimum staffing for the Fermi 2 Emergency Response Organization according to functional area, ERF, and emergency classification. Table B-1 reflects DTE Energy's intent to achieve 60-minute and 90-minute augmentation times.

It is the goal of DTE Energy to augment Control Room staff by the Emergency Response Organization (Table B-1) in two groups of key personnel. The first group of key personnel should be in their Emergency Response Facility within 60 minutes of an Alert being declared. The second group of key personnel should be in place within 90 minutes of being declared.

B.2 Emergency Assignments

B.2.1 Responsibilities - The key Emergency Response Organization positions and their functional responsibilities are outlined in Table B-2.

The Emergency Director assumes full responsibility for the emergency response measures and implementation of the RERP Plan prior to activation of the EOF. At the onset of an emergency, the Shift Manager assumes the role of the Emergency Director and retains this role until relieved of the responsibility by the Plant Manager/alternate.

The Emergency Director operates from the Control Room initially, and then from the TSC should the situation progress beyond the Unusual Event classification. Certain responsibilities may be delegated to other individuals or groups, with the exception of decisions to: (1) classify the emergency; (2) authorize radiation exposures over 10 CFR 20 limits for emergency workers; (3) make protective action recommendations to offsite response organizations (prior to EOF activation); and (4) authorize distribution and use of KI to radiological emergency workers.

DTE Energy will implement Severe Accident Guidelines (SAG) from the TSC. Should an event require entry into SAG, the Control Room will interact with the TSC and transition from Emergency Operating Procedure (EOP) decision making in the Control Room to SAG decision making in the TSC. The TSC must be functional to implement SAG. The TSC Technical Engineer is the primary SAG decision-maker, but the Emergency Director retains overall authority for SAG implementation.

When the EOF is activated, the Emergency Officer assumes overall management responsibility for the Emergency Response Organization and for all assignments in the organization. The Emergency Officer also assumes full responsibility for all coordination and interaction with offsite response organizations, with the exception of the local fire department, the ambulance service, and the hospital for contaminated injured personnel. These organizations are, and will continue to be, contacted through the Control Room. The EOF will be the focal point for meteorological data, dose assessment and projection, offsite radiological field surveys, and recommendations for protective action for the general public within the 10-mile EPZ. The Emergency Officer will approve all protective action recommendations made to the State, when the EOF is activated. The Emergency Director, EOF Staff, and Joint Information Center (JIC) Corporate Spokesperson report to the Emergency Officer. The Emergency Officer: (1) ensures that the full resources of DTE Energy are made available as required to secure the plant systems and to minimize the effects of the incident on plant personnel and the public, including the availability of other utilities, vendors, and consultants, (2) ensures that information released to the public is accurate and directed through proper channels, (3) communicates with Corporate Headquarters, and (4) ensures that the long-term emergency and recovery organizations are established.

Operations, technical, and administrative support personnel will be assigned according to the needs of each ERF. Table B-2 describes the functional duties and responsibilities of the personnel who may be present in each of the facilities.

B.3 Emergency Response Organization Interfaces

The onsite ERFs are discussed in Section H. The offsite centers are, at a minimum, Western Wayne Center and the emergency centers of the federal, state, and local response organizations. The interface among all these centers provides a logical flow of information in a direct and unambiguous manner and is based on the functional responsibilities of each center. Communications systems, as discussed in Section F, are provided to maintain these primary interfaces.

**TABLE B-1
STAFFING FOR FERMI 2
EMERGENCY RESPONSE ORGANIZATION**

| Major Functional Area | Major Tasks | Locations | Emergency Response Organizational Title | On Shift | Alert (or higher) +60 min | Alert (or higher) +90 min |
|---|--|-------------------|--|-------------------|---------------------------|---------------------------|
| Plant Operations and Assessment of Operational Aspects | Plant Operations and Assessment, Accident Mitigation, Corrective Actions, Damage Assessment | CR | Control Room Supervisor | 1 | | |
| | | CR | Nuclear Supervising Operator | 3 | | |
| | | CR | Non-Licensed Operator | 5 | | |
| Emergency Direction and Control | | CR | Emergency Director | 1 | | |
| | | TSC | Emergency Director | | 1 | |
| Notification/Communication | Notify ERO, State, Local and Federal Authorities, Maintain Communications | CR | Communicator | 1* | | |
| | | TSC | Communicator | | 1 | |
| | | EOF | Communicator | | | 2 |
| Radiological Accident Assessment and Support of Operational Accident Assessment | Emergency Officer | EOF | Emergency Officer | | | 1 |
| | Offsite Dose Assessment | CR/OSC | Chemistry Technician | 1* | | |
| | | TSC | Radiation Protection Advisor | | 1 | |
| | Offsite Surveys | EOF | Radiation Protection Coordinator | | | 1 |
| | | OSC | RET Sampler or RP Technician | | 2 | |
| | | EOF | RET Sampler or RP Technician | | | 2 |
| | Onsite (out of plant) Surveys | OSC | RET Sampler or RP Technician | | 2 | |
| | In plant Surveys | OSC | RP Technicians | 2 | 2 | |
| Plant System Engineering, Repair and Corrective Actions | Technical Support | CR | Shift Technical Advisor | 1 | | |
| | | TSC | Technical Engineer or Nuclear Safety Advisor | | 1 | |
| | | TSC | Support Engineer | | 1 | |
| | | OSC | OSC Coordinator | | 1 | |
| | Repair and Corrective Actions | OSC | Damage Control and Rescue Team Members | 2 | 5 | |
| Protective Actions (In Plant) | Radiation Protection: 1. Access Control 2. HP coverage for repair, corrective actions, search and rescue, first-aid and fire-fighting 3. Personnel monitoring 4. Dosimetry | OSC | RP Technicians | 2* | 4 | |
| Fire Fighting | | OSC | Fire Brigade | UFSAR | | |
| Rescue Operations and First Aid | | OSC | Damage Control and Rescue Teams | 2* | | |
| Site Access Control and Personnel Accountability | Security and Personnel Accountability | Per Security Plan | Nuclear Security Force | Per Security Plan | | |
| | | | Total | 16 | 21 | 6 |

* May be provided by shift personnel assigned other functions and not included in the total.

**TABLE B-2:
EMERGENCY RESPONSE ORGANIZATION FUNCTIONAL RESPONSIBILITIES**

| Functional ERO Position | Location | Reports To | Responsibilities |
|---|-------------------------------|-----------------------|---|
| Typical DTE Positions | | | |
| Emergency Officer | Emergency Operations Facility | President, DTE Energy | Overall emergency management |
| Director, Nuclear Engineering | | | Approve all protective action recommendations |
| Director, Organizational Effectiveness | | | Ensure that the full resources of DTE Energy are made available to secure the plant systems and to minimize the effects of the incident on plant personnel and public. This includes availability of other utilities and vendor resources |
| Director, Nuclear Projects | | | Interface with governmental authorities as required |
| Manager, Radiation Protection | | | Ensure information released to the public is prompt and accurate and released through proper channels |
| Project Manager, Nuclear Engineering Projects | | | Establish long-term emergency and recovery organization |
| Manager RERP | | | Communicate with Corporate Headquarters |
| Emergency Director | Control Room | Emergency Officer | Implement the immediate onsite corrective and protective actions to bring the incident under control and mitigate its effects |
| Nuclear Shift Manager | | | Classify the emergency |
| Director, Nuclear Production | Technical Support Center | Emergency Officer | Initiate offsite notifications and protective action recommendations |
| | | | Interface with governmental authorities as required |
| | | | Ensure DTE Energy personnel are called in as conditions warrant |

**TABLE B-2:
EMERGENCY RESPONSE ORGANIZATION FUNCTIONAL RESPONSIBILITIES
(Continued)**

| <u>Functional ERO Position</u> Typical DTE Positions | Location | Reports To | Responsibilities |
|--|-----------------------------|-----------------------|---|
| Emergency Director (continued) | Technical Support Center | Emergency Officer | Ensure that information to be released to the public is prompt, accurate, and released through proper channels |
| Manager, Nuclear Operations | | | Coordinate and direct the combined activities of DTE Energy personnel in the Control Room, TSC, OSC, and elsewhere on owner-controlled property |
| Superintendent, Operations | | | |
| Superintendent, Production | | | Authorize plant and emergency workers to receive radiation doses in excess of 10 CFR 20 limits |
| Manager, Industry Interface | | | Authorize the distribution and use of Potassium Iodide (KI) |
| | | | Obtain assistance of offsite support organizations as necessary |
| | | | Provide oversight of Severe Accident Management |
| Shift Technical Advisor Shift Technical Advisor | Control Room | Emergency Director | Advise the Emergency Director on plant technical matters, including Thermal/Hydraulic issues, Reactor Engineering, analysis related to safe operation of the plant. |

**TABLE B-2:
EMERGENCY RESPONSE ORGANIZATION FUNCTIONAL RESPONSIBILITIES
(Continued)**

| <u>Functional ERO Position</u> | Location | Reports To | Responsibilities |
|---|----------------------------|--------------------|--|
| Typical DTE Positions | | | |
| OSC Coordinator | Operational Support Center | Emergency Director | Direct maintenance operations. Dispatch onsite emergency teams |
| Operations Support | | | |
| Operations Special Projects | | | Advise the Emergency director on repair activities |
| Principal Technical Specialist, Nuclear | | | Recommend maintenance actions to mitigate the emergency |
| Superintendent, Production | | | Provide work assignments for maintenance personnel |
| Operations Work Control | | | |
| Technical Engineer | Technical Support Center | Emergency Director | Provide recommendations to the Emergency Director on plant technical matters |
| Supervisor, Nuclear Engineering | | | Request technical and engineering analyses from the Nuclear Safety Advisor |
| General Supervisor, Operations Support | | | Severe Accident Management decision maker |
| Manager, Nuclear Shift | | | |
| Operations Liaison | Technical Support Center | Technical Engineer | Advises Technical Engineer Severe Accident Management Team Member |
| Engineer, Nuclear Shift | | | Monitors Plant Status |
| Superintendent, Production | | | |
| Supervisor, Control Room | | | |

**TABLE B-2:
EMERGENCY RESPONSE ORGANIZATION FUNCTIONAL RESPONSIBILITIES
(Continued)**

| <u>Functional ERO Position</u> Typical DTE Positions | Location | Reports To | Responsibilities |
|---|--------------------------|--------------------|---|
| Nuclear Safety Advisor Manager, Nuclear Engineering Supervisor, Nuclear Engineering | Technical Support Center | Emergency Director | Provide work assignments for Nuclear Engineering Support groups |
| Radiation Protection Advisor Supervisor, Radiation Protection Program General Supervisor, Radiological Protection Specialist, Industrial Safety Superintendent, Radiation Protection | Technical Support Center | Emergency Director | <p>Advise the Emergency Director concerning offsite protective action recommendations</p> <p>Provide work direction for radiation protection and dose assessors</p> <p>Ensure personnel exposure records are maintained</p> <p>Ensure TSC habitability surveys are performed</p> <p>Authorize the Dispatch of Onsite RETs</p> <p>Authorizes the Dispatch of Offsite RETs until the EOF is activated</p> <p>Evaluate results of offsite environmental surveys until the EOF is activated</p> <p>Ensure that radiation protection equipment, such as dosimetry devices, respiratory protection gear, and protective clothing, is issued and controlled, as required</p> <p>Direct onsite decontamination activities</p> <p>Advises Incident Command Post on radiological concerns</p> |

**TABLE B-2:
EMERGENCY RESPONSE ORGANIZATION FUNCTIONAL RESPONSIBILITIES
(Continued)**

| <u>Functional ERO Position</u> Typical DTE Positions | Location | Reports To | Responsibilities |
|--|-----------------------------|--|--|
| Dose Assessor General Supervisor, Radiation Protection Specialist, Radiation Protection Supervisor, Radiation Protection System Engineer Performance Engineer | Technical Support Center | Radiation Protection Advisor | Perform onsite and offsite dose assessment and projections Assess meteorological conditions and projections |
| Radchem Advisor General Supervisor, Chemistry Supervisor, Chemistry Engineering Supervisor, Chemistry Laboratory Chemistry Specialist | Technical Support Center | Emergency Director | Direct in-plant chemistry sampling activities Direct Radiochemistry Laboratory activities Advise Emergency Director on radwaste processing/storage/disposal |
| Chemistry Technician | CR/OSC | Emergency Director Rad Chem Advisor | Perform dose assessment on potential or actual releases and access met data Perform in-plant samples and analysis |

**TABLE B-2:
EMERGENCY RESPONSE ORGANIZATION FUNCTIONAL RESPONSIBILITIES
(Continued)**

| <u>Functional ERO Position</u> Typical DTE Positions | Location | Reports To | Responsibilities |
|--|--------------------------|------------------------|---|
| Security Advisor | Technical Support Center | Emergency Director | Ensure that site security is maintained and appropriate contingency measures are implemented |
| General Supervisor, Nuclear Security Operations | | | Ensure that security and traffic Operations control measures are in effect, including traffic direction during evacuation |
| Supervisor, Nuclear Security Operations | | | Ensure personnel accountability procedures are implemented in the event of a radiological emergency or the need for plant/site evacuation |
| Superintendent, Nuclear Security | | | Advise the Director, Nuclear Security and Emergency Director on matters related to security |
| Manager, Nuclear Security | | | Advises Incident Command Post on security concerns |
| Security Shift Supervisor | | | |
| Support Engineers | Technical Support Center | Nuclear Safety Advisor | Use IPCS/SPDS to monitor and/or trend key plant parameters |
| Supervisor, Nuclear Engineering | | | Severe Accident Management evaluator |
| Lead orPrincipal Nuclear Engineer | | | |
| Nuclear Engineer | | | |

TABLE B-2:
EMERGENCY RESPONSE ORGANIZATION FUNCTIONAL RESPONSIBILITIES
(Continued)

| <u>Functional ERO Position</u> | Location | Reports To | Responsibilities |
|--|--------------------------|--------------------|---|
| Typical DTE Positions | | | |
| TSC Administrator | Technical Support Center | Emergency Director | Ensure that all notifications and communications to offsite organizations are accomplished within time requirements |
| Scheduling, Nuclear Work Control | | | Maintain and control documentation concerning the emergency |
| Supervisor, Nuclear Generation | | | Supervise TSC communicators, and clerical support |
| Work Control Special Projects | | | Coordinate logistical support for onsite emergency personnel |
| Specialist, Nuclear Generation | | | Advise the Emergency Director on matters relating to personnel and equipment |
| Principal Technical Specialist, Nuclear Generation | | | Provide for replacement or addition of TSC personnel or equipment as conditions warrant |

**TABLE B-2:
EMERGENCY RESPONSE ORGANIZATION FUNCTIONAL RESPONSIBILITIES
(Continued)**

| <u>Functional ERO Position</u> | Location | Reports To | Responsibilities |
|---|-------------------------------|-------------------|---|
| Typical DTE Positions | | | |
| Radiation Protection Coordinator | Emergency Operations Facility | Emergency Officer | Direct and coordinate offsite environmental assessment activities |
| General Supervisor, Radiation Protection | | | Direct Radiological emergency Team Coordinator, Dose Assessors, , and Laboratory Tech (as applicable) |
| Supervisor, Radiological Health | | | |
| | | | Determine survey areas for offsite RETs |
| Radiological Engineering | | | Determine environmental samples/surveys |
| | | | Advise Emergency Officer on offsite protective action recommendations |
| General Supervisor, RP Technical Services and Support | | | Evaluate results of offsite environmental surveys |
| Manager, Radiation Protection | | | Direct activities in EOF Emergency Laboratory |
| Principal Technical Specialist, Radiation Protection | | | Ensure personnel exposure records are maintained |
| | | | Ensure EOF habitability surveys are performed |
| | | | Ensure that radiation protection equipment, such as dosimetry devices, respiratory protection gear, and protective clothing, is issued and controlled |
| | | | Implement a vehicle monitoring/decontamination program |

**TABLE B-2:
EMERGENCY RESPONSE ORGANIZATION FUNCTIONAL RESPONSIBILITIES
(Continued)**

| <u>Functional ERO Position</u> Typical DTE Positions | Location | Reports To | Responsibilities |
|--|-------------------------------------|--|--|
| Dose Assessor | Emergency Operations Facility | Radiation Protection Coordinator | Perform dose assessment and projections |
| Radiological Engineer | | | Assesses meteorological conditions and projection |
| Principal Engineer, Radiological | | | |
| Specialist, Environmental | | | |
| Principal Engineer, Nuclear Nuclear Training Instructor | | | |
| Radiological Emergency Team Coordinator | Emergency Operations Facility | Radiation protection Coordinator | Update RET status Coordinate efforts of the Offsite RETs |
| Nuclear Training Specialist | | | |
| Supervisor, Nuclear | | | |
| Nuclear Operations Advisor | Emergency Operations Facility | Emergency Officer | Advise Emergency Officer on plant status |
| Nuclear Training Instructor | | | Provide updated information to the DTE Energy liaisons to the State of Michigan, Monroe County, and Wayne County |
| Supervisor, Nuclear | | | Advises Incident Command Post on operational concerns |

**TABLE B-2:
EMERGENCY RESPONSE ORGANIZATION FUNCTIONAL RESPONSIBILITIES
(Continued)**

| <u>Functional ERO Position</u> Typical DTE Positions | Location | Reports To | Responsibilities |
|---|-------------------------------------|----------------------|--|
| Public Information Coordinator Principal Licensing Engineer Principal Specialist, Nuclear Project Manager, Nuclear Supervisor, Nuclear Operator Supervisor, Nuclear Engineering | Emergency Operations Facility | Emergency Officer | Prepare information under the direction of the Emergency Officer for prompt release to the Joint Information Center (JIC) |
| EOF Administrator Manager, Business Support Engineer, Nuclear Supervisor, Nuclear Training Manager, Work Control Engineer, Operations Shift Engineer, Nuclear Engineering | Emergency Operations Facility | Emergency Officer | <p>Ensure that all notifications and communications to offsite organizations are accomplished with the time requirements</p> <p>Ensure communications with offsite emergency response organizations are established.</p> <p>Maintain and control documentation concerning the emergency</p> <p>Supervise EOF status board clerks communicators, and clerical support</p> <p>Coordinate logistical support for onsite emergency personnel</p> <p>Advise the Emergency Officer on matters relating to personnel and equipment</p> <p>Provide for replacement or addition of EOF personnel or equipment as conditions warrant</p> |

TABLE B-2:
EMERGENCY RESPONSE ORGANIZATION FUNCTIONAL RESPONSIBILITIES
(Continued)

| <u>Functional ERO Position</u> Typical DTE Positions | Location | Reports To | Responsibilities |
|--|-------------------------------|-------------------|--|
| Security Advisor | Emergency Operations Facility | Emergency Officer | Coordinate access and egress of offsite personnel to owner-controlled area |
| General Supervisor, Nuclear Security | | | Advise the Emergency Officer on security matters |
| Supervisor, Nuclear Security | | | Maintain security of the EOF |
| Manager, Nuclear Security | | | Advises Incident Command Post on Security concerns |
| Specialist, Nuclear Security | | | |

Figure B-1
NUCLEAR GENERATION ORGANIZATION

See UFSAR Figure 13.1-2

Figure B-2
CONTROL ROOM

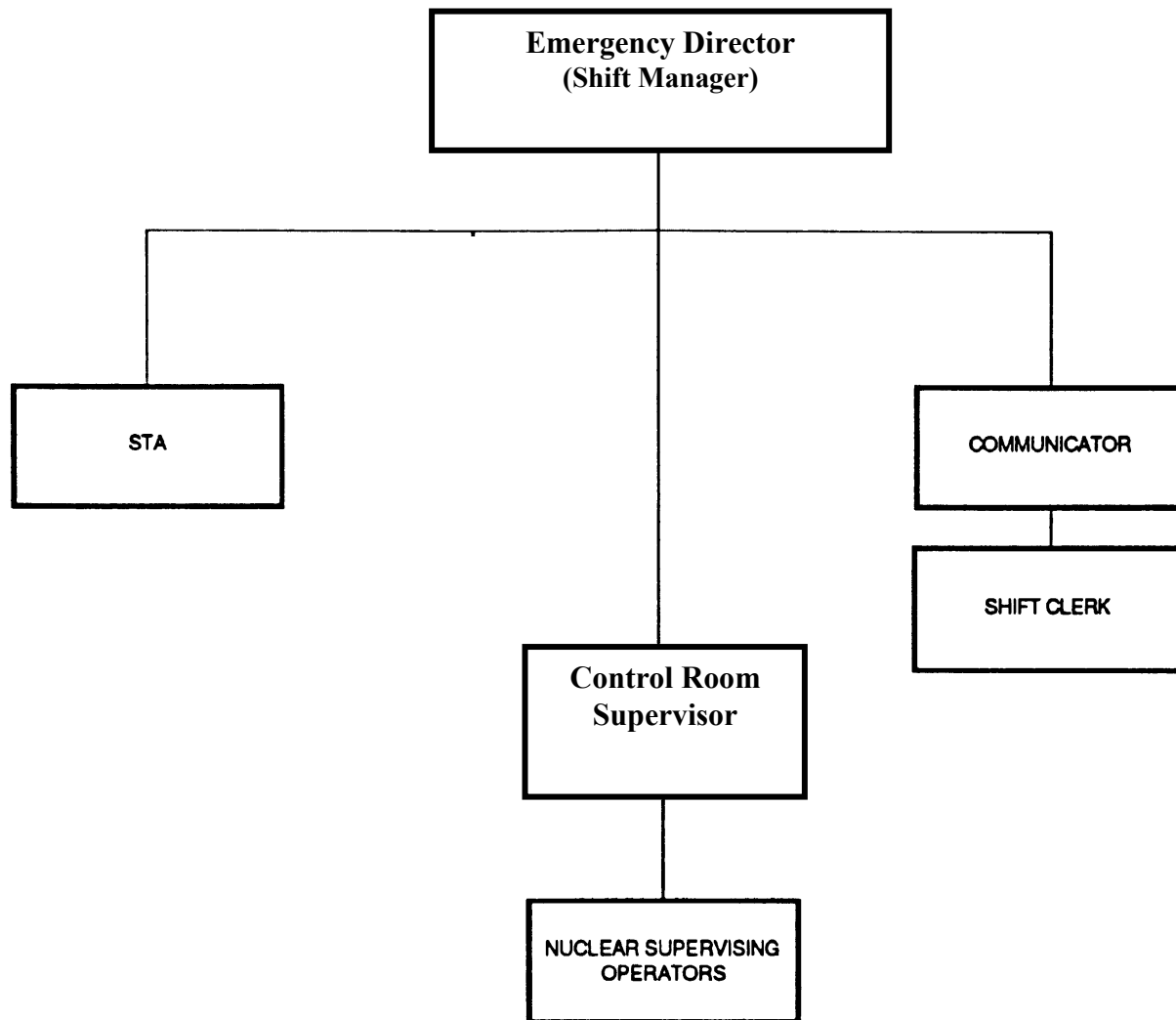
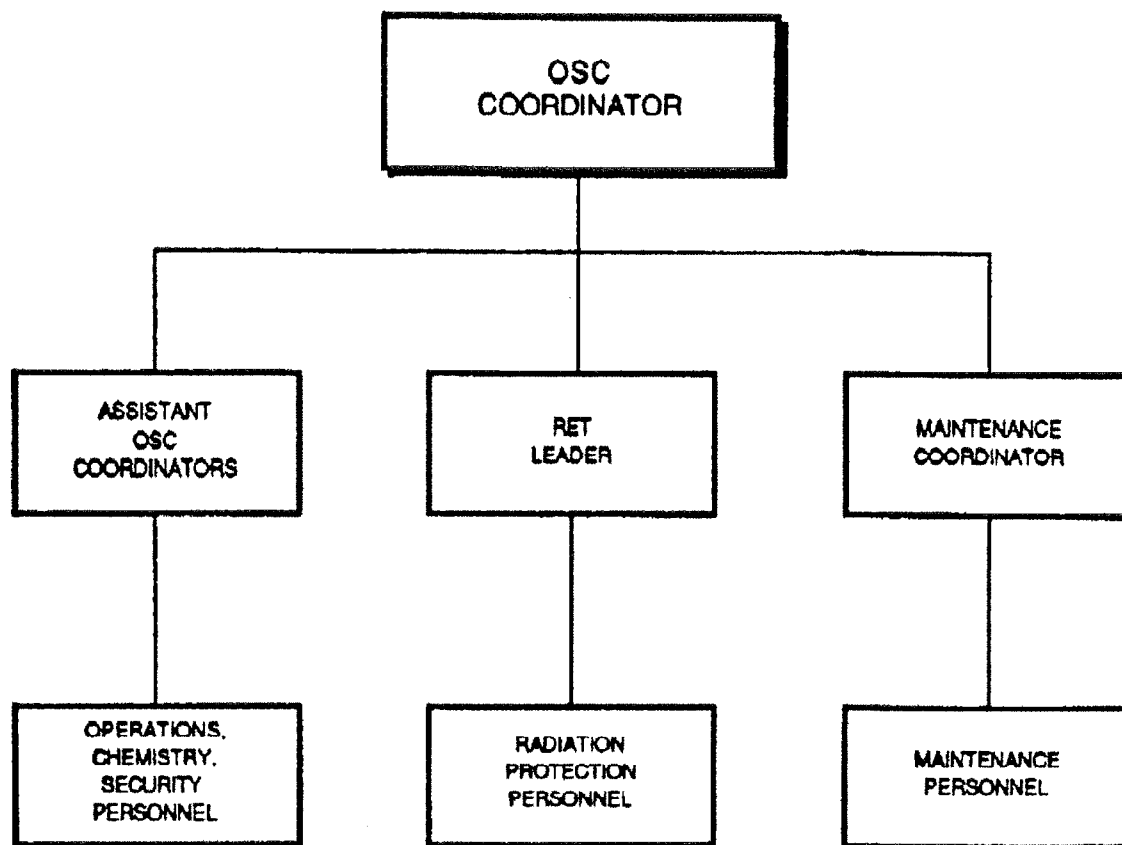


Figure B-3
OPERATIONAL SUPPORT CENTER



Note: Some personnel may be directed to report to the Control Room

Figure B-4
TECHNICAL SUPPORT CENTER

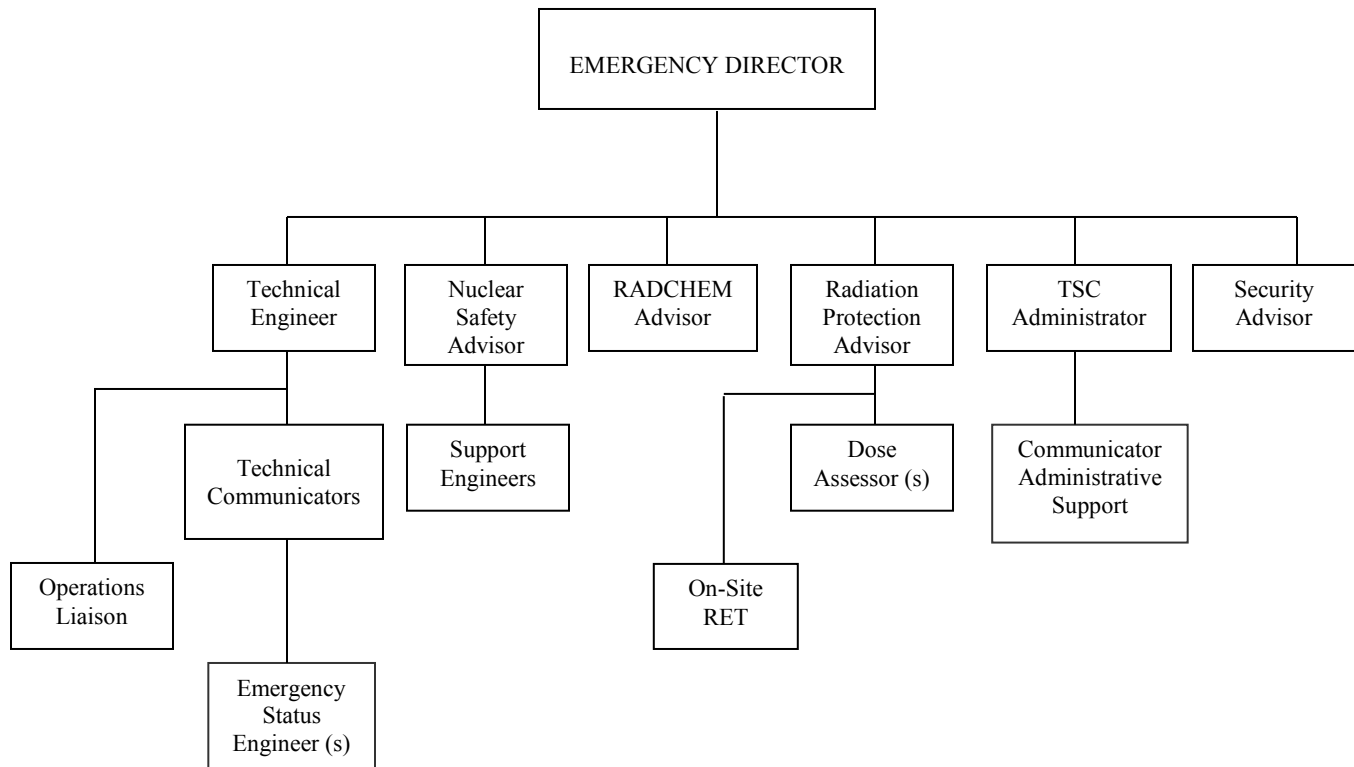
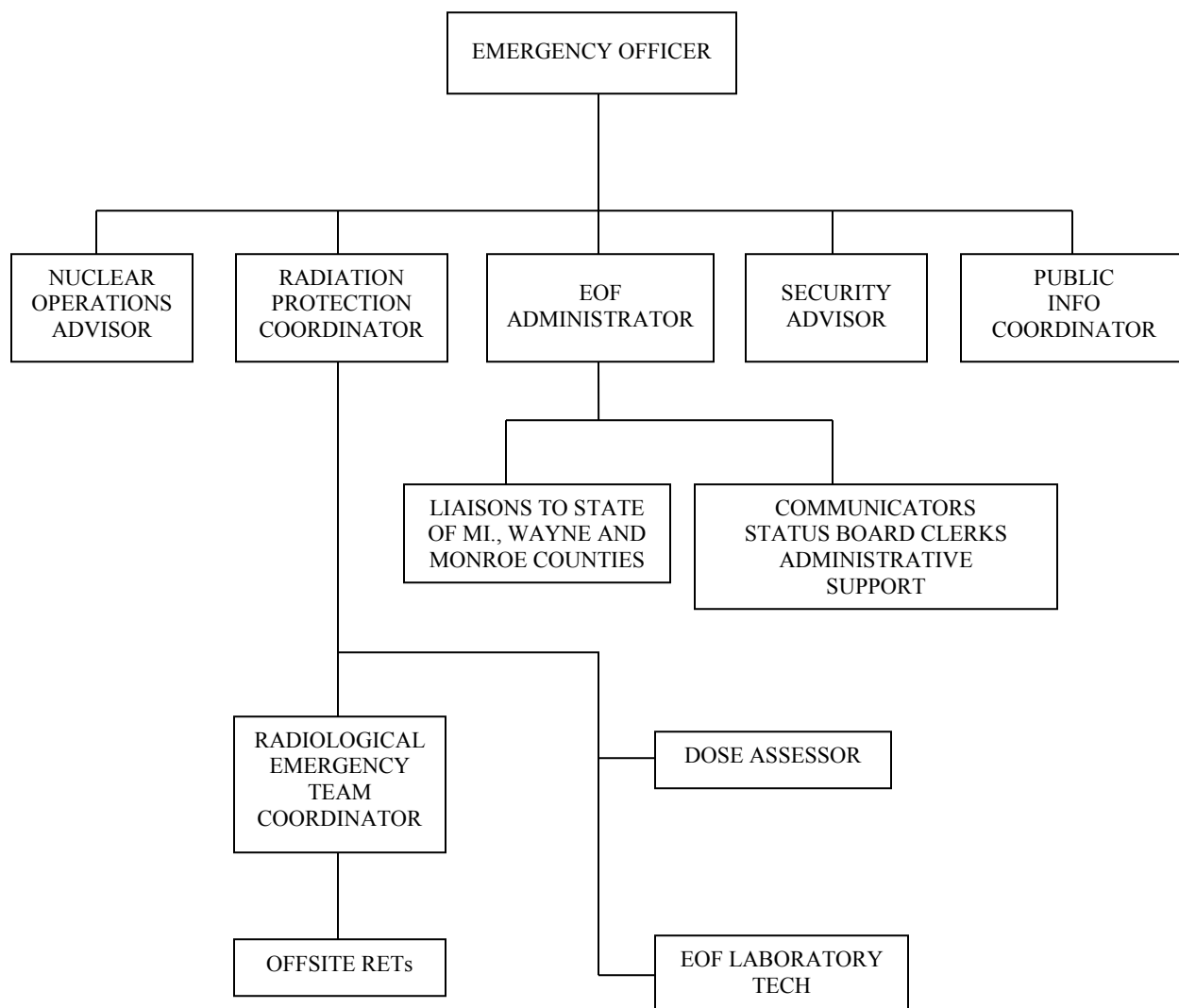


Figure B-5
EMERGENCY OPERATIONS FACILITY



C. EMERGENCY RESPONSE SUPPORT AND RESOURCES

This Plan Section describes arrangements for requesting and effectively using government or other industry support to augment the onsite emergency response capability.

C.1 Government Support

Federal assistance can be requested as needed by the Emergency Officer or the Emergency Director. Federal assistance is available through the National Response Framework (NRF). Requests can also be initiated by the Michigan Department of State Police Emergency Management and Homeland Security Division. In addition, the Nuclear Regulatory Commission (NRC) dispatches representatives to the EOF and to the TSC in accordance with the NRC Incident Response Plan (NUREG-0728). Federal representatives are expected to be dispatched to the Joint Information Center to participate in the coordinated dissemination of information to the media.

Airfields in the vicinity of the plant that may be used by emergency support groups include commercial airports and small municipal airports that can only accommodate small aircraft. The approximate distances in miles and directions to these airfields from Fermi 2 follow. Two helicopter landing pads are located in the Fermi 2 Owner-Controlled Area.

| Airport | Distance, Mi | Direction |
|----------------------|--------------|-----------|
| Commercial | | |
| Detroit Metropolitan | 19 | NNW |
| Detroit City | 34 | NNE |
| Toledo Express | 39 | SW |
| Willow Run | 24 | NW |
| Municipal | | |
| Carl | 6 | NNW |
| Custer | 10 | W |
| Grosse Ile | 11 | NNE |

State and local command centers that may be available to support federal response include the State EOC located at the Michigan Department of State Police Emergency Management and Homeland Security Division, in Lansing, Michigan, and the alternate State EOC located at the State Police Second District Headquarters, Northville, Michigan. The State Emergency Operations Centers (EOCs) are described in the Michigan Emergency Management Plan.

The local EOCs are described in detail in the Monroe County and Wayne County, Emergency Operations Plans. The Monroe County EOC is located at the Emergency Management Division, Monroe, Michigan and the Wayne County EOC is located at the Emergency Management Division, Romulus, Michigan.

DTE Energy will provide liaison personnel to the State and County EOCs. These liaisons are knowledgeable in the integrated aspects of the Fermi 2 RERP Plan.

The state may have a Liaison Officer from the Department of State Police in the EOF; the counties may dispatch liaisons as they deem necessary. In addition, the Department of Environmental Quality has a laboratory located in Lansing, Michigan capable of analyzing radiological and environmental samples.

C.2 Industry Support

DTE Energy, a member of the Institute of Nuclear Power Operations (INPO), is provided with the INPO Emergency Resources Manual. The Manual provides a summary description of each U.S. nuclear plant, principal contacts at each station for use in an emergency, and technical expertise and specialized equipment that utilities and suppliers could provide in response to requests for emergency assistance from an INPO member or participant. For example, technical experts may be called upon to assist in the analysis or solution of unique or complex problems, and specialized equipment may be requested to mitigate an emergency or assist in recovery.

The INPO Emergency Resources Manual provides the licensee with the option of either communicating directly with the organization that is providing the support or using INPO as an agent to arrange for and coordinate the required support. The individuals to be contacted in the various organizations along with their telephone numbers are listed in the manual, which is updated annually.

In addition, a separate mutual assistance agreement exists among Entergy Nuclear Palisades, L.L.C., Indiana Michigan Power, and DTE Energy. Such requests for assistance can be in the form of personnel or equipment. This agreement is limited to assistance in offsite environmental monitoring.

General Electric (GE) has a support program in place which utilizes the full resources of the Nuclear Energy Group in San Jose and the Installation and Services Engineering personnel in the local districts to support utilities during emergency situations. This program has provided assistance for boiling-water reactors (BWRs) during major component failures and plant transients to minimize the impact of the event and to assure rapid return to operation. To assist BWR owners/operators more expeditiously during emergency situations that could potentially endanger the health and safety of the public or plant personnel, or that under certain circumstances could have a major impact on continued plant operations, a special Emergency Support Program has been established by GE's Nuclear Services Department. Fermi 2 has access to this GE support program 24 hours a day. The support program is described in detail in Appendix 1.

In addition to that provided by government emergency plans, DTE Energy has arranged for emergency assistance from local and other private organizations through signed letters of agreement with each of these organizations. The letters of agreement containing concepts of operation, specific support commitments, authorities, responsibilities, and limits of these organizations are included in their entirety in Appendix 1. The following is a complete list of these organizations:

- Ambulance service provider (Letter(s) of Agreement in Appendix 1)
- Frenchtown Fire Department
- GE Company (BWR Emergency Support Program) - not a Letter of Agreement
- INPO (Nuclear Power Plant Emergency Response Voluntary Assistance Agreement)
- Mercy Memorial Hospital
- Monroe County Community College
- Mutual Assistance Agreement
 - Entergy Nuclear Palisades, L.L.C.
 - DTE Energy Company
 - Indiana Michigan Power
- Oakwood Southshore Medical Center
- U.S. Department of Energy (Chicago Operations Office)

D. EMERGENCY CLASSIFICATION SYSTEM

A standard emergency classification and action level scheme, the basis of which includes facility system and effluent parameters, has been established. State and local response organizations will rely on information provided by the facility licensee for the classification of an emergency and related appropriate offsite protective action recommendations.

The emergency classifications are as follows:

- Unusual Event
- Alert
- Site Area Emergency
- General Emergency

Fermi 2 maintains the capability to assess, classify, and declare an emergency condition within 15 minutes after the availability of indications to plant operators that an Emergency Action Level (EAL) has been exceeded and shall promptly declare the emergency condition as soon as possible following identification of the appropriate emergency classification level.

A general description and the purpose of each classification level is provided in Sections D.1 through D.4. The actions required by the licensee and by the state and/or local offsite authorities are also given for each class.

EALs are provided in RERP Implementing Procedure EP-101, Classification of Emergencies. Included in this procedure are the UFSAR postulated accidents that are considered to be of sufficient severity to establish an emergency condition. EP-101 also contains specific information on instruments, parameter values, and/or equipment status for establishing the emergency class. The initiating conditions are classified to provide consistency with established plant Technical Specifications and abnormal and emergency operating procedures. The classification is then further related to the four emergency classification levels.

EP-101 is the procedure for classifying emergency conditions. In any situation not covered in the procedure, the Shift Manager/Emergency Director must make a judgment in determining the appropriate emergency classification in consultation with the Control Room and/or other knowledgeable individuals in the TSC.

D.1 Unusual Event

D.1.1 **Definition** - Events are in process or have occurred that indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

D.1.2 **Purpose** - The purpose of offsite notification is to assure the first step in any response later found to be necessary has been carried out. It is also to bring the operating staff to a state of readiness and to provide systematic handling of unusual events information and decision making.

D.1.3 Licensee Actions

1. Inform state and local offsite authorities of the nature of the unusual condition within 15 minutes following classification and notify the Nuclear Regulatory Commission (NRC) as soon as possible but within one hour.
2. Augment on-shift resources as needed
3. Assess and respond.
4. Escalate to a more severe class, if appropriate, **or**
5. Close out with verbal summary to offsite authorities.

D.1.4 State and/or Local Offsite Authority Actions

1. Provide fire, ambulance, or security assistance, if requested.
2. Escalate to a more severe class, if appropriate.
3. Stand by until verbal closeout.

D.2 Alert

D.2.1 Definition - Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of intentional malicious dedicated efforts of a hostile act. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.

D.2.2 Purpose - Purpose of Alert is to (1) assure that emergency personnel are readily available to respond if the situation becomes more serious or to perform confirmatory radiation monitoring if required, and (2) provide offsite authorities with current status information.

D.2.3 Licensee Actions

1. Inform state and local authorities of Alert status and reason for Alert within 15 minutes following classification and to the NRC as soon as possible but within one hour.
2. Augment resources by activating the TSC, EOF, and OSC.
 - a. DTE personnel assigned to the JIC are notified at an Alert declaration in preparation for activation should the event escalate.
3. Assess and respond.
4. Mobilize and dispatch onsite monitoring teams with associated communication equipment if required.
5. Provide periodic plant status updates to offsite authorities.
6. Provide periodic meteorological assessments to offsite authorities and, if any releases of radioactive material as specified for an Alert in EP-101 Classification of Emergencies are occurring, provide dose estimates for those releases.
7. Escalate to a more severe class, if appropriate, or
8. Close out emergency class by verbal summary to offsite authorities.

D.2.4 State and/or Local Offsite Authority Actions

1. Provide fire, ambulance, or security assistance, if required.
2. Augment resources and bring Emergency Operations Centers (EOCs) to standby.
3. Place key emergency personnel on standby status, including monitoring teams with associated communication equipment.
4. Provide confirmatory offsite radiation monitoring and ingestion pathway dose projections if actual releases substantially exceed Technical Specifications limits.

5. Escalate to a more severe class, if appropriate.
6. Maintain Alert status until verbal closeout or de-escalation of emergency class.

D.3 Site Area Emergency

D.3.1 Definition - Events are in process or have occurred which involve actual or likely major failures of plant functions needed for protection of the public or security events that result in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) prevents effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the site boundary.

D.3.2 Purpose - Purpose of the Site Area Emergency declaration is to (1) assure that response centers are staffed, (2) assure that monitoring teams are dispatched, (3) provide consultation with offsite authorities, and (4) provide updates for the public through offsite authorities.

D.3.3 Licensee Actions

1. Inform state and local offsite authorities of Site Area Emergency status and reason for emergency within 15 minutes following classification and to the NRC as soon as possible, but within one hour.
2. Augment resources by activating the TSC, OSC, EOF and JIC.
3. Assess and respond.
4. Dispatch onsite and offsite monitoring teams with associated communication equipment if required.
5. Provide regular plant status updates to offsite authorities and periodic press briefings with offsite authorities.
6. Make onsite senior technical and management staff available for consultation with NRC and state authorities on a periodic basis.
7. Provide meteorological data and dose estimates to offsite authorities for potential/actual releases as appropriate.
8. Provide release data and dose projections based on available plant condition information and foreseeable contingencies.
9. Escalate to General Emergency classification, if appropriate, **or**
10. Close out or de-escalate emergency classification by briefing offsite authorities.

D.3.4 State and/or Local Offsite Authority Actions

1. Provide any assistance requested.
2. Provide public within 10-mile radius with periodic updates on emergency status.
3. Augment resources by activating EOCs.
4. Dispatch key emergency personnel, including monitoring teams with associated communications.
5. Alert other emergency personnel to standby status (for example, those needed for evacuation) and dispatch personnel to assigned near-site locations.
6. Provide offsite monitoring results to licensee and others, and jointly assess them.
7. Continuously assess information from licensee and offsite monitoring teams regarding changes to protective actions already initiated for public and mobilizing evacuation resources.
8. Consider placing milk animals within 2-mile radius on stored feed and assess need to extend distance.
9. Provide press briefings with licensee.
10. Escalate to General Emergency classification, if appropriate.
11. Maintain Site Area Emergency status until closeout or de-escalate of emergency class.

D.4 General Emergency

- D.4.1 **Definition** - Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or security events that result in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA Protective Action Guidelines exposure levels offsite for more than the immediate site area.
- D.4.2 **Purpose** - Purpose of the General Emergency declaration is to (1) initiate predetermined protective actions for the public, (2) provide continuous assessment of information from licensee and offsite organization measurements, (3) initiate additional measures as indicated by actual or potential releases, (4) provide consultation with offsite authorities, and (5) provide updates for the public through offsite authorities.

D.4.3 Licensee Actions

1. Inform state and offsite authorities of the General Emergency status, reason for emergency, and a minimum protective action recommendation (PAR) within 15 minutes following classification and the NRC as soon as possible, but within one hour.
2. Augment resources by activating the TSC, OSC, EOF, and JIC, if not already activated.
3. Assess and respond.
4. Dispatch onsite and offsite monitoring teams with associated communications, if required.
5. Provide regular plant status updates to offsite authorities and periodic press briefings with offsite authorities.
6. Continually assess existing PAR for adequacy based on review of plant conditions, current and future meteorological data, dose estimates, field readings, and plant response efforts.
7. Make senior technical and management staff available onsite for consultation with NRC and State authorities on a periodic basis.
8. Provide meteorological data and dose estimates to offsite authorities for potential/actual releases.
9. Provide release data and dose projections based on available plant condition information and foreseeable contingencies.
10. Close out or de-escalate emergency class by briefing offsite authorities.

D.4.4 State and/or Local Offsite Authority Actions

1. Provide any assistance requested.
2. Activate public notification system promptly, inform public of emergency status, and provide updates periodically.
3. Order protective actions based on actual or potential plant conditions, licensee recommendations, and field surveys.
4. Augment resources by activating EOCs.
5. Dispatch key emergency personnel including monitoring teams with associated communications.
6. Dispatch other emergency personnel to duty stations within 5-mile radius and alert all others to standby status.
7. Provide offsite monitoring results to licensee and others, and jointly assess them.
8. Continuously assess information from licensee and offsite monitoring teams regarding changes to protective actions already initiated for public and mobilizing evacuation resources.
9. Consider placing milk animals within 10-mile radius on stored feed and assess need to extend distance.
10. Provide press briefings with licensee.
11. Maintain General Emergency status until closeout or de-escalation of emergency class.

E. NOTIFICATION METHODS AND PROCEDURES

This Plan Section describes the methods for notification of Emergency Response Organizations and the means used to notify and provide instruction to members of the public within the plume exposure pathway 10-mile Emergency Planning Zone (EPZ).

E.1 Notification of Onsite Emergency Response Organizations

Initial notification of Onsite Emergency Response Organizations is made by the Control Room on the plant Hi Com system. Personnel with emergency assignments are ordered to report to their assigned emergency facility. Notification of other plant personnel who are offsite is achieved by the Shift Manager/delegate activating an automatic call out system.

E.2 Notification of Offsite Emergency Response Organizations

The basis for notification of all Offsite Emergency Response Organizations is consistent with the emergency classification action level scheme delineated in RERP Implementing Procedure EP-101, Classification of Emergencies. Procedures are established for the notification of applicable State and local response organizations. These procedures include provisions for message verification by plant emergency response personnel.

The notification message to the appropriate state and local Emergency Response Organizations has been standardized and was developed in cooperation with the state and other utilities in Michigan. It contains information concerning the emergency classification, the radioactive releases, potentially affected populations, and protective action recommendations (as necessary). Provisions for initial and follow-up messages contain the following information (if known and if applicable):

- Emergency classification
- Location of incident and name and telephone number (or communications channel identification) of caller
- Date and time of incident
- Type of actual or projected release (airborne, waterborne) and estimated duration time
- Estimate of quantity of radioactive material potentially released or being released and the release points.
- Chemical and physical form of released material, including estimates of the relative quantities and concentration of noble gases, iodines, and particulates, as applicable

- Meteorological conditions at an appropriate elevation, including wind speed, direction (to and from), stability class, and precipitation
- Actual or projected dose rates at site boundary and projected integrated dose at site boundary including sector(s) affected
- Projected dose rates and integrated dose at 2, 5, and 10 miles downwind including sector(s) affected
- Licensee emergency response actions underway
- Protective action recommendations
- Requests made for onsite support from offsite organizations
- Prognosis for escalation or termination of event based on plant information

E.3 Notification of the General Public

Both physical and administrative means have been established for notifying and instructing the population within the plume exposure pathway (10-mile EPZ). Notification will be made by a system of 62 electro-mechanical sirens situated throughout the 10-mile EPZ (Table E-1 and Figure E-1). The siren signals alert the population to tune to a local radio or television station affiliated with the Emergency Alert System (EAS) (Appendix 2). County officials are responsible for activating the siren notification system and EAS. Activation of these systems is based on the emergency classification declared by the licensee.

The licensee will provide offsite authorities with supporting information for their messages to the public. Such messages, consistent with the emergency classification scheme and with the American Industrial Hygiene Association, Respiratory Protection Devices Manual, will provide the public with instructions regarding protective actions to be taken by occupants of affected areas. Initial information to the public will state, at a minimum, that an emergency has occurred at Fermi 2 and further instructions will be provided. DTE Energy will continue to coordinate planning with the responsible offsite authorities to assure that administrative means exist to promptly notify the public during rapidly developing emergency situations.

A small (224 acres) section of the 10-mile EPZ includes Canada and is sparsely populated. The Province of Ontario (Canada) is notified only once at each initial classification of an Unusual Event, Alert, Site Area Emergency, or General Emergency. The Michigan State Police will provide all subsequent communications and information.

**TABLE E-1:
PROMPT NOTIFICATION SYSTEM SIREN LOCATIONS**

MONROE COUNTY

Frenchtown Township

1. **4210 Avenue B**, Avenue B and Lakeview in Stoney Point Beach
3. **2985 Nadeau**, North Dixie and Nadeau behind Fire Station
4. **1340 Waterworks**, northeast corner State Park Road and Waterworks (Sterling State Park)
5. **6019 N. Monroe**, north Monroe and Nadeau
6. **3110 Heiss**, west of Exeter
7. **2200 Bluebush**, crossroad of Bluebush and Stewart
33. **3922 Mentel**, south of Nadeau Rd
40. **505 Buhl**, Buhl Road between Grafton and Telegraph
43. **5501 Toll Road**, 1/4 mile South of Leroux
44. **6600 Williams**, south of Post at the railroad crossing
62. **1249 Bates Ave.**, south of 1255 Bates
63. **1952 Heiss**, east of Stumpmier adjacent to 1946 Heiss
69. **2314 Newport Road**, east of I-275
70. **1401 Post**, 250' east of the corner of War and Post Roads
71. **2018 Sandy Creek**, west side across from 2015 Sandy Creek
72. **230 Mall Road**, 150' west of M-125

City of Monroe

8. **1801 W. Lorain Street**, west of Dane Drive - at Manor School
9. **2 Port Avenue**, crossroad of East Front and Port Avenue
10. **1249 N. Macomb Street**, N. Macomb at Monroe Public Schools Admin. Building
38. **1424 E. Front Street**, east of Link Street
48. **123 Cass Street**, crossroad of Second and Cass

Ash Township

11. **11108 Grafton Road**, north of Sigler
12. **2450 Sigler Road**, east of Telegraph
13. **9994 Exeter Road**, south of South Stony Creek
14. **9055 North Stony Creek Road**, north of Newport Road at C & O Railroad
15. **14132 Romine Road**, north of Newburg
16. **3950 Carleton - Rockwood Rd**, west of Berlin Road
52. **3520 Labo Road**, northeast corner of Labo and Swan Creek Road
56. **3740 Newburg Road**, west of Telegraph (Wilson Substation)
61. **2850 Newberg Road**, across from 2855 Newberg
64. **2441 W. Sigler Road**, southside and east of Burns across from 2438 Sigler
65. **10192 Otter Road**, westside north of Labo Rd across from 10190 Otter
66. **12460 Calkins Road**, north of Ready Road across from 12477 Calkins
67. **2323 Ready Road**, corner of Ready Road and Telegraph

Raisinville Township

74. **2419 N. Raisinville Road**, between 2433 and 2411 N. Raisinville

Village of Carleton

17. **12900 Horan**, north of Ash at Ash Carleton Park

Village of South Rockwood

55. **6118 Park Blvd.**, corner of Park and Edwards
68. **7391 Ready Road**, southwest corner of Ready Road and South Huron River Drive

Berlin Township

2. **7005 N. Dixie Highway**, northeast corner Post Road and Dixie Highway
19. **9786 U.S. Turnpike**, south of Labo Road
20. **9929 Armstrong**, south of Labo
32. **8454 South Newport Road**, at Niedermeier Elementary School
41. **8559 Strong Road**, crossroad near U. S. Turnpike
42. **8022 Swan Creek Road**, northeast corner North Dixie Hwy. and Swan Creek Road
53. **11490 Armstrong Road**, southeast corner, Armstrong and Mattison
54. **6824 Sigler Road**, west of Hagerman

Village of Estral Beach

22. **7194 Lakeview**, crossroad of Lakeview and Superior near fire station

Monroe Township

24. South Telegraph and Albain at Monroe Public Schools Garage
25. Albain Road, west of LaPlaisance
39. Dunbar, west of South Monroe
49. **700 Western Avenue**, crossroad of Western and Erie at Waterloo School
73. **3553 S. Custer Road**, at fairgrounds, behind brick building east of fence
75. Lake Street, crossroads of Miami and Biscayne

Exeter Township

51. **4298 Heiss**, northeast corner of Heiss and Finzel Roads

WAYNE COUNTY

Brownstown Township

- 26. **15282 Lee Road**, east of West Jefferson
- 28. **20377 Gibraltar Road**, Gibraltar road, west of Fort Street near fire station
- 58. **32353 West Jefferson** , behind Brownstown Fire Station #2

City of Gibraltar

- 27. **29430 Munro**, crossroad of Munro and Bayview near fire station

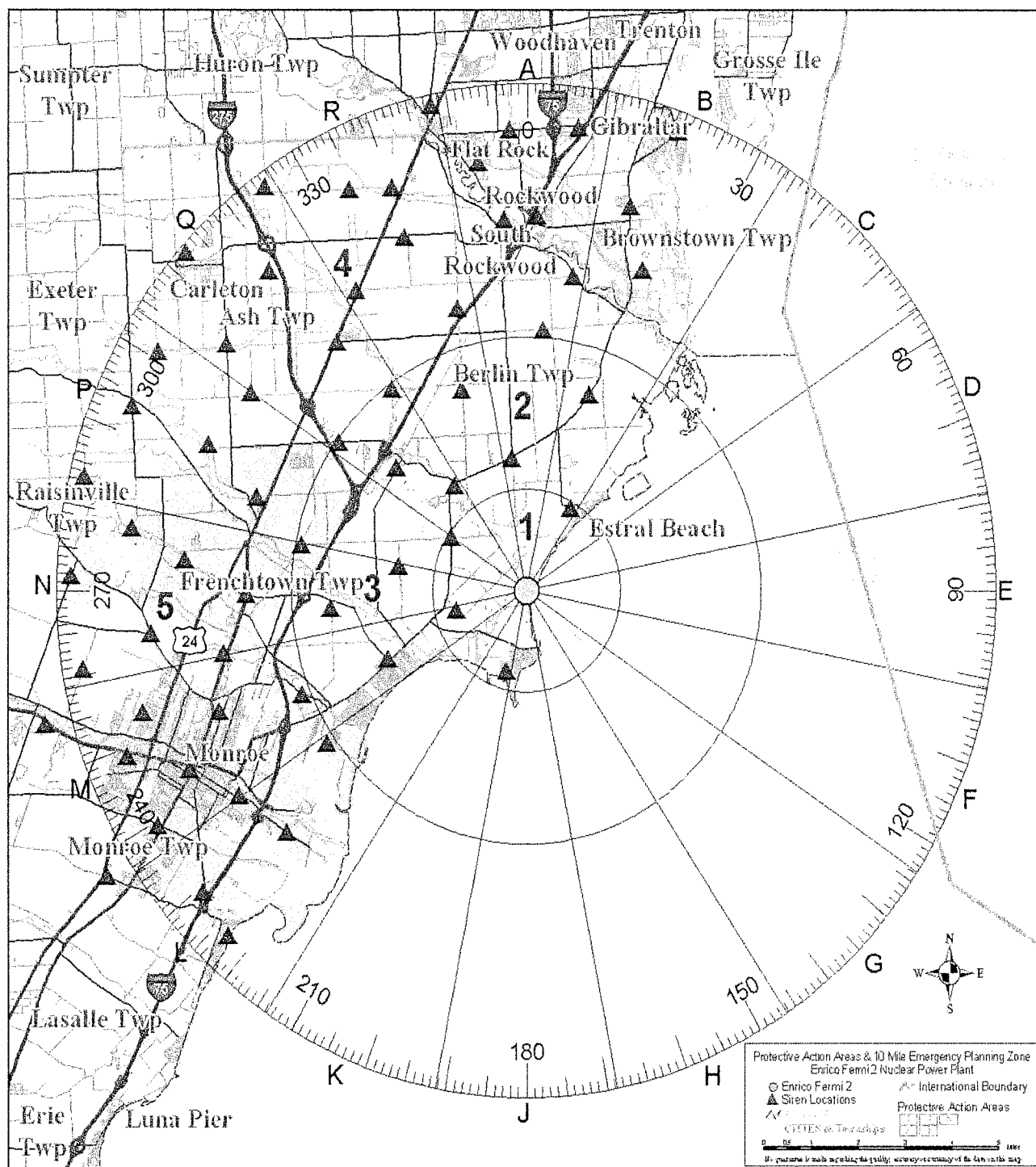
City of Flat Rock

- 30. **28101 Arsenal Road**, north of Huron River Drive
- 31. **24680 Woodruff**, Woodruff and Alders in Elementary School yard
- 60. **28951 Hall Road**, 100' north of Gibraltar Road.

City of Rockwood

- 59. **32785 Wood Street**, north of Huron River Drive at Rockwood Department of Public Works

Figure E-1
SIREN LOCATIONS



F. EMERGENCY COMMUNICATIONS

F.1 Telephone Communications

The emergency telephone communications network (Figures F-1 and F-2) established for the Emergency Response Facilities combines Direct-Inward-Dialing (DID) lines provided by with dedicated lines on a separate Edison-owned Private Branch Exchange (PBX) telephone system (Avaya G3S/I). An Edison-owned microwave system is also installed to provide primary and back-up emergency communications from the Fermi 2 site. Figure F-1 illustrates the interface of these systems between the various Emergency Response Facilities.

- F.1.1 PBX Lines** - Extensions on the Avaya system are divided into two series. One series allows communication between the Emergency Response Facilities and features DID capability, which allows an outside caller to be connected directly to an extension by prefixing the four-digit extension number with a three-digit office code number. The second series is unrestricted for outgoing calls; however, these extensions do not accept direct incoming calls. Sufficient PBX lines are distributed among the Emergency Response Facilities to provide adequate communications both internal and external to the site.
- F.1.2 Automatic Ring Lines** - Automatic ring lines are provided between key positions within the Emergency Response Facilities and also with Offsite Emergency Response Organizations. These extensions are programmed for automatic dialing.
- F.1.3 NRC Telephones** - FTS-2001 extensions for the Emergency Notifications System are available in the Control Room, TSC, and EOF. FTS-2001 extensions for the Health Physics Network, Protective Measures Counterpart Link, Reactor Safety Counterpart Link, Management Counterpart Link, and Local Area Network Access are available in the TSC and EOF.
- F.1.4 Microwave System** - An Edison-owned microwave system is installed at Fermi 2 to provide primary functions for the emergency telephones (RERP lines) and back-up emergency telephone communications via the administrative lines. Through use of the microwave system, telephone communications are routed from the Fermi site to the General Offices in Detroit and transferred by land lines through the central office system to any desired location. The microwave system may be accessed from the Avaya system extensions. Offsite or remote locations may be accessed via the microwave system from all telephone locations.
- F.1.5 Satellite Phones** – All On-site and Off-Site Facilities have satellite phones to ensure communications are maintained with off-site RET's and off-site agencies in the event all other telephone communications have failed.
- F.1.6 Medical Support Facilities** - The Control Room maintains responsibility throughout an emergency for all communications to hospitals. Ambulance/hospital communication system maintenance is the responsibility of the ambulance and hospital services.
- F.1.7 Joint Information Center (JIC)** - The telephone network for the JIC, located in Monroe, is served by the local telephone company. The interface between the JIC and the Onsite Emergency Response Facilities is provided through off premises stations that are packaged in a 24-phone-line "T1" at Monroe and passed through Century Telephone transmission systems at Newport. These provide 13 site extensions from the Onsite Emergency Response Facilities. In addition, over 30 general business lines on the system have been installed, 10 (credit card only) of which are for use by media representatives. Provisions have been made at the JIC to expand the number of lines for media representatives within 48 to 120 hours of notifying of additional emergency needs.

F.1.8 **Telephone Equipment Maintenance** - If an emergency occurs at Fermi 2, the emergency response staff can be augmented by DTE Energy personnel from Information Systems Organization, and a representative from Century Telephone; to serve as technical advisors to effect repairs or open additional lines for use by the Emergency Response Organization.

F.1.9 **General Information**

All single-line instruments in the Emergency Response Facilities have muted rings to reduce ambient noise levels.

Headsets are provided for positions where heavy telephone use is anticipated.

The Avaya G3S/I system has many special features available to users that include, but are not limited to, the following:

- Internal conferencing capability for up to six parties
- Meet-me conference bridge for 6 party and 12 parties
- Station call forwarding, which allows a party to direct incoming calls to another work area
- Consultation hold, whereby a user can temporarily place a person on hold, consult with a third party, then return to the original call

The entire emergency communication system is tested on a periodic basis, consistent with communications drill requirements.

F.2 **Radio Communications**

The communications network at Fermi 2 also involves several radio systems to effect communications within the plant with radiological monitoring teams, maintenance teams, and Nuclear Security personnel, as well as provide backup communication modes to essential Offsite Emergency Response Organizations in the event of telephone equipment malfunctions or traffic congestion.

F.2.1 **Operations and Maintenance System** - There are two radio consoles in the Control Room. One is installed in panel H11-P700 to establish communication using Plant Radio, Zone 1 (Control Room Group) to hand-held portable radios (Operations Channel 1 or 2) via the plant's radio repeater system. This radio base station provides for control room panel microphone and ceiling speaker operation.

An additional radio console is located in panel H11-P703 to allow for backup Control Room communication to hand-held portable radios on various other user group channels via the Plant Radio, Zone 1 repeater system. Maintenance Channel's 1, 2, or 3 can also be selected at this station. This console also provides a backup radio communication selection into Security, Zone 3 that provides another two repeaters for radio operation.

In addition to radio communications with Operations and Maintenance personnel as noted above, hand-held portable radio units utilizing the group RERP-1 and RERP-2 (located on Plant Radio, Zone 1) are used by the Damage Control and Rescue Teams, Fire Brigade, or Onsite Radiological Emergency Teams (RETS) to communicate with the Control Room and/or Radiation Protection personnel in the OSC and other remote parts of the plant via the Zone 1 radio repeater system. Back Up, Zone 2 is a selection that can be made on the radio console located in panel H11-P703. This zone can be used in the event that there is a partial loss of the Plant Radio, Zone 1.

- F.2.2 Offsite Radiological Emergency Teams** - The radio control console for directing the actions of Offsite RETs is located in the EOF/RET Dispatch Room. Each RET vehicle is equipped with a radio to provide mobile communications within a range of 20 miles. Radio communications with Offsite RETs are carried over customer service UHF frequencies assigned to Western Wayne Center.
- F.2.3 Nuclear Security System** - The Nuclear Security System provides communications with Nuclear Security personnel within the Owner-Controlled Area through the use of hand-held portable radios operating through Security, Zone 3, and two associated repeater systems. The primary location of the radio console is the Security Building Secondary Alarm Station (SAS); however, this console is also duplicated at the Office Services Building Security Annex Central Alarm Station (CAS).

Communications with the Monroe County and Wayne County Sheriff departments from the Emergency Response Facilities are through the installation of direct ring lines as described in Section F.1.2. In addition to using general business phones as a backup, the EOF Security Advisor has direct radio contact with the Michigan State Police or the Monroe County Sheriff when telephones are inoperative.

F.3 Facsimile Transmission

Facsimile machines are provided in the Control Room, the TSC, the EOF, and the JIC for use by emergency response and NRC personnel.

F.4 Public Address System

Public address systems are available in the TSC and the EOF to allow dissemination of information to emergency response personnel within these facilities.

F.5 Plant Intercom System

Extensions of the plant intercom (HiCom) system used for general plant operations are located in the TSC, the OSC, and the Control Room. Announcements made from the Control Room using the override feature are broadcast in all normally occupied buildings onsite.

The Owner Controlled Area Notification System (OCANS) is used to alert personnel in outside buildings throughout the Protected Area and the Owner Controlled Area. OCANS announcements are made from the Central Alarm Station (CAS).

Figure F-1
Emergency Communications Telephone Network

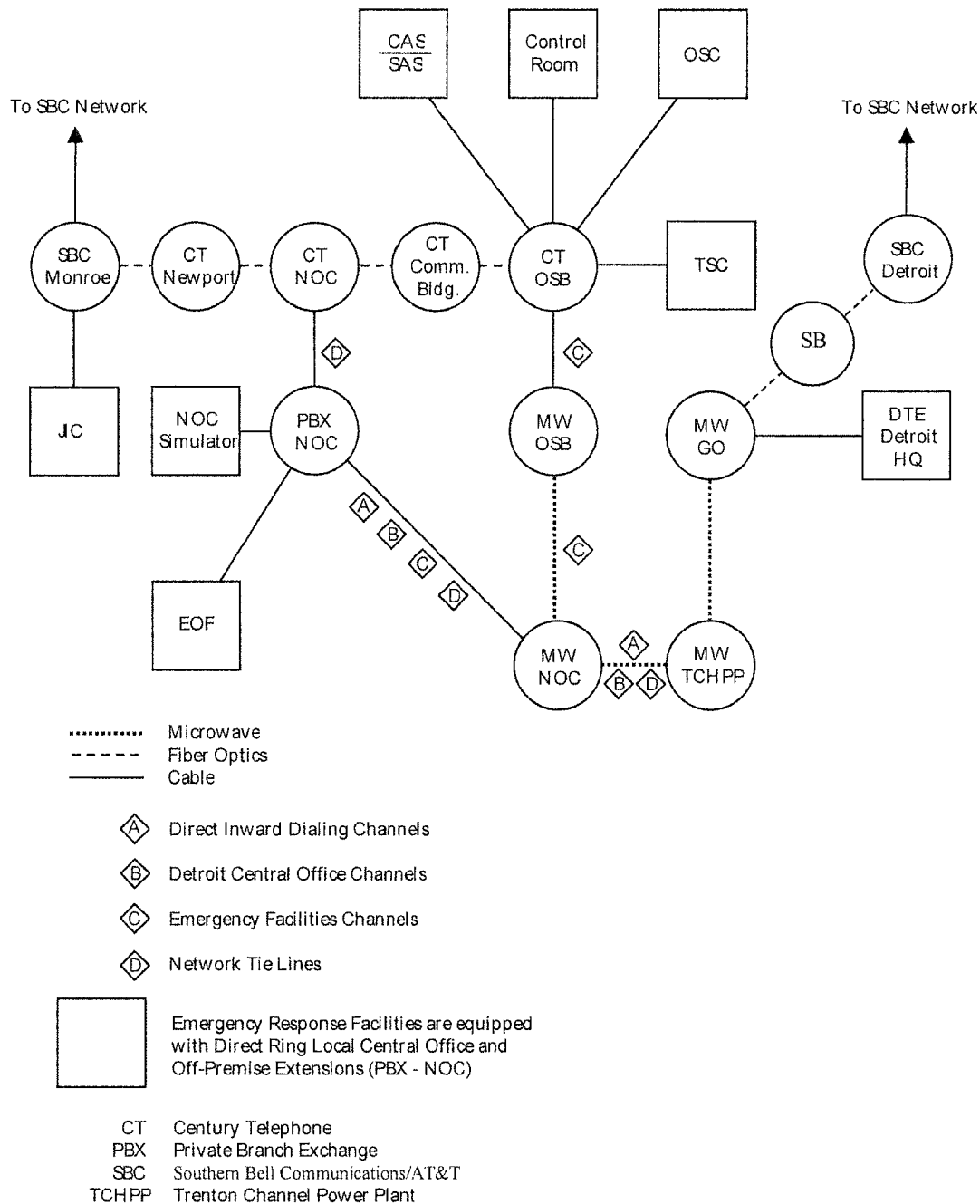
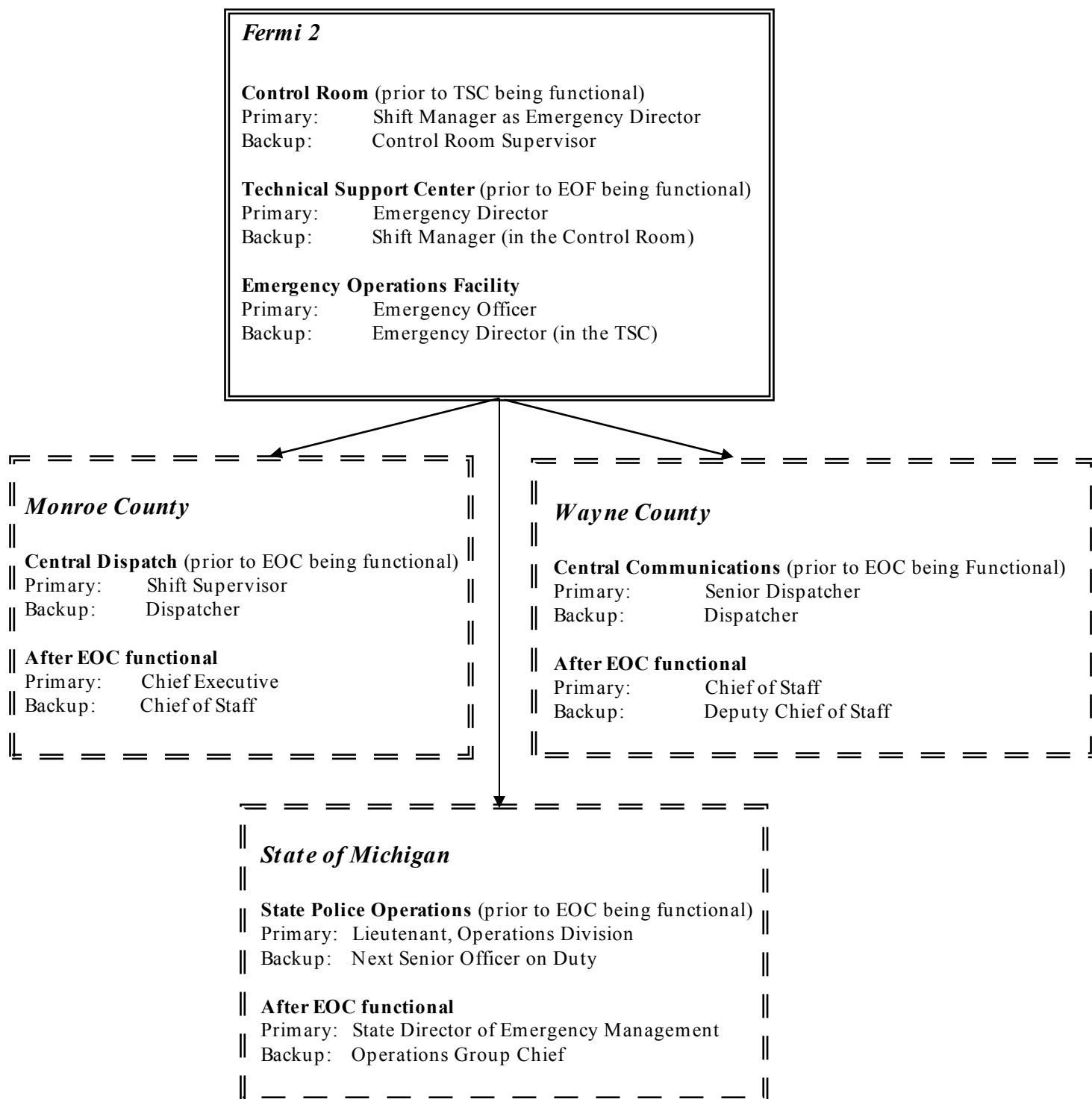


Figure F-2
Personnel in charge of Communications Links at Fermi 2, Monroe County, Wayne County, and the State of Michigan



G. PUBLIC EDUCATION AND INFORMATION

This Plan Section describes DTE Energy's Public Education and Information Program, the type of information that will be distributed, and the procedures for coordinated dissemination of information to the public concerning Radiological Emergency Response Preparedness (RERP) in the Fermi 2 10-mile Emergency Planning Zone (EPZ).

G.1 Education and Information Program

DTE Energy provides information to the public at least annually regarding how they will be notified in the event of an emergency and what their actions should be in such an emergency. This information includes, but is not limited to, the following:

- Educational information on radiation
- Phone numbers to call for additional information
- Protective measures (sheltering information, evacuation route maps, reception/congregate care center locations, and respiratory protection information)
- Any special instructions for the handicapped

This information is prepared by DTE Energy and is jointly reviewed and approved by the state, the counties, and DTE Energy. It is provided at least annually to each occupiable and addressable dwelling within the 10-mile EPZ. Other forms of information may include, but are not limited to, such activities as school program presentations, speeches at meetings of community groups, booth displays at the Monroe County Fair and tours of Fermi 2. The tour programs include exhibits, lectures, and the opportunity to ask questions about all aspects of plant operations.

G.2 Public Awareness

DTE Energy's Public Information Program provides the permanent, as well as the transient, population with an adequate opportunity to become aware of the information that is available. Notices refer the transient to the appropriate radio and/or television stations for information in the event of an emergency. These notices are prepared from approved material contained in the information provided to permanent residents. Copies of this information are made available annually to hotels, highway rest areas, and state recreation areas within the 10-mile EPZ.

G.3 News Centers

The Joint Information Center (JIC) is activated to coordinate the dissemination of information to the public during an emergency. The JIC is located at the Monroe County Community College and can accommodate approximately 500 members of the news media. A multichannel telephone trunk is available near the cafeteria to provide a means for the local telephone company to prepare adequate communications on short notice as described in Section F. The college is located outside the EPZ approximately 12 miles west-southwest of Fermi 2. The JIC will be staffed by representatives from DTE Energy, Monroe County, Wayne County, the Province of Ontario, and the State of Michigan. This team reviews information, coordinates all news releases, and holds press conferences.

DTE Energy also has an Onsite News Center that can accommodate 20 to 50 news media personnel in the Nuclear Training Center (NTC) Auditorium. The Onsite News Center serves as a briefing area for the media when appropriate. The NTC is approximately one mile southwest of the plant and is within the Owner-Controlled Area.

G.4 Information Sources During an Emergency

Plant operations and technical staff must remain isolated from tasks that distract them from their immediate responsibility of mitigating the emergency and restoring the plant to normal operating conditions. For this reason, additional DTE Energy personnel are assigned to organize and implement all communication measures that serve the news media, the public, company employees, and public officials from Federal, State, and local levels.

Designated public telephone lines are reserved at the Monroe County Emergency Management Division for use by the public wishing to obtain specific information about the emergency. The telephone number will be widely publicized at the time of the emergency. The lines usually will be staffed by representatives from local government. Rumors should be kept to a minimum through the use of this one authenticated source of information. The rumor control center is described in the Public Information Annex of the Monroe County Emergency Management Plan.

A Company officer has been designated as the spokesperson for DTE Energy on the Joint Information Team (JIT) in the event of an emergency at Fermi 2. This spokesperson and his/her staff have communications capability with the Emergency Operation Facility (EOF) and Corporate Communication in the General Office Complex, located in downtown Detroit, Michigan. In addition, this spokesperson or alternate is responsible for the briefing of news media members who are present at the Onsite News Center, when it is activated, to serve for media briefings in emergencies involving nonradioactive releases.

G.5 News Media Acquaintance Program

DTE Energy, with the assistance of State and local authorities, conducts an annual program to acquaint the news media with emergency planning and procedures. These programs cover radiation and radiological effects of nuclear plants, as well as offer information to enhance the media's ability to communicate radiological events to the public.

H. EMERGENCY FACILITIES AND EQUIPMENT

This Plan Section identifies and briefly describes the functions and location of the Emergency Response Facilities (ERFs) and equipment that will be used and maintained by Edison in coordinating and performing emergency response activities.

H.1 Emergency Response Facilities

The ERFs that have been established at Fermi 2 to assist Control Room personnel in mitigating the consequences of accidents and responding to abnormal operating conditions are the Technical Support Center (TSC), the Operational Support Center (OSC), and the Emergency Operations Facility (EOF).

The ERFs are staffed by the emergency organization as described in Section B. The minimum staffing for the ERFs varies, as described in Section B, depending upon the class of emergency as determined by the emergency action levels discussed in RERP Implementing Procedure EP-101, Classification of Emergencies. The ERFs are activated as soon as possible after an emergency is declared.

The ERFs are linked by a comprehensive communications network to provide reliable and timely communications between the Control Room, the ERFs and offsite Emergency Response Organizations. The communications network provides dedicated telephone lines, general business lines, intercoms, public address speakers, microwave communications, data transmission, and radio link capabilities. Detailed information on the communication capabilities is provided in Section F.

The emergency response function of the Integrated Plant Computer System (IPCS) is provided to gather, store, and display data in the Control Room, OSC, TSC, and EOF. This enables personnel to analyze plant conditions and to make appropriate recommendations regarding protective actions for emergency personnel and the public. The emergency response function of the IPCS is described in Section H.4 and in greater detail in the Fermi 2 Updated Final Safety Analysis Report (UFSAR).

The TSC and the EOF have the necessary up-to-date plant records, procedures, Technical Specifications, and as-built drawings to aid emergency personnel in their technical analysis and evaluation of emergency conditions. Procedures have been developed for ensuring that the most current revisions of these controlled documents are being maintained.

The ERFs provide adequate space to accommodate assigned emergency response personnel. There is sufficient space for the operation and maintenance of communications and data transmission equipment, data acquisition and display equipment, and other instrumentation required at the respective facilities. Storage space is provided for the necessary emergency supplies, protective equipment, plant documentation, and administrative materials.

The TSC and EOF each provide a consultation room and provisions for a small staff of Nuclear Regulatory Commission (NRC) personnel. Provisions include desks, chairs, and telephone lines.

The following sections describe the individual ERFs and their corresponding specific functions. Additional detailed information regarding the design, construction, and habitability of the ERFs is provided in the UFSAR.

- H.1.1 **Control Room** - The Control Room is located on the third floor of the Auxiliary Building and is designed to meet 10 CFR 50, Appendix A, Criterion 19. The habitability standards are described in Chapter 6 of the UFSAR. The Control Room contains instrumentation, controls, and displays for monitoring and controlling the plant operating and safety systems during emergency events and for mitigating the consequences of an emergency. Safe operation of the reactor and plant manipulations are performed by licensed Control Room personnel under the supervision of the Shift Manager.

Initial emergency response measures, as shown below, are exercised from the Control Room under the direction of the Emergency Director (Shift Manager).

- Plant operations
- Direction and control
- Accident assessment/meteorology
- Corrective actions
- Radiological assessment
- Protective actions (onsite; offsite until TSC is functional)
- Communications (licensee/offsite response organizations)

The Control Room is the initial onsite communications center during an emergency. It has a reliable communications system providing communication capabilities to the NRC, Offsite Emergency Response Organizations, OSC, TSC, EOF, and all areas of the plant.

- H.1.2 **Technical Support Center** - When emergency conditions escalate to an Alert status, coordination of the emergency response measures shifts from the Control Room to the Technical Support Center under the direction of the Emergency Director (Plant Manager/alternate). The Emergency Director coordinates activities in the TSC and interfaces with the Control Room, the OSC, and the EOF.

The TSC is the emergency operations work area for senior technical, engineering, and management personnel; other licensee designated technical and administrative support personnel; and a small staff of NRC personnel. The TSC provides plant management and technical support to Control Room personnel and relieves the reactor operators of peripheral duties not directly related to reactor system manipulations during an emergency. The TSC may also be used to provide technical support during recovery operations following an emergency. TSC personnel perform the following functions for an Alert, Site Area Emergency, and General Emergency until the EOF is functional.

- Direction and control
- Accident assessment
- Corrective actions
- Plant system engineering
- Radiological assessment
- Protective actions (onsite; offsite until EOF is functional)
- Site access control
- Communications (licensee/offsite response organizations)

When functional, the TSC becomes the primary onsite communications center during an emergency. It has a reliable communications system providing communication capabilities with the Control Room, the OSC, the EOF, the NRC, and other offsite agencies. The system provides for the immediate exchange of information on plant status and operations, notifications to Federal, State, and local agencies, and inter-communications within the TSC. The communications system consists of dedicated and general business telephone lines, a microwave system, the plant intercom, a public address system, and data transmission equipment.

The TSC is located at the southeast end of the plant within the Protected Area on the ground floor of the two-story Office Building Annex. The TSC is habitable during postulated radiological emergencies to the same degree as the Control Room (Design Criteria 19), with the exception of redundant filter systems. TSC construction provides special shielding and a HVAC system designed to facilitate the occupation of all necessary personnel for winter and summer environmental radiological accident conditions. Portable airborne and area radiation monitors that alarm locally are provided. In the event that the TSC becomes uninhabitable, TSC functions are divided between the Control Room and an alternate facility such as the EOF as directed by the Emergency Director.

- H.1.3 **Operational Support Center** - The OSC is a designated assembly point near the Control Room. It is located at the north end of the third floor of the Turbine Building. The OSC provides an area for the coordination of shift personnel to support emergency response operations without causing congestion in the Control Room. Personnel reporting to the OSC may include the Fire Brigade, Damage Control and Rescue Teams, Onsite Radiological Emergency Teams, instrument technicians, and general maintenance personnel.

The OSC is activated for an Alert, Site Area Emergency, or General Emergency. The OSC Coordinator integrates OSC activities and dispatches emergency personnel on assignments as directed by the Emergency Director.

The OSC has dedicated telephone lines to both the Control Room and the TSC and a dial telephone for communications with other onsite and offsite locations. Portable radios are also available to complement or serve as backup to the telephones and for onsite emergency teams.

In the event that the OSC becomes uninhabitable, an area of the machine shop is designated as the Alternate OSC. The machine shop is located on the first floor of the Office Services Building.

H.1.4 **Emergency Operations Facility** - The EOF is a command post for the overall management of the offsite emergency response including the coordination of radiological and environmental assessments, the determination of protective actions for the public, and the management of the recovery operations stated below:

- Radiological assessment
- Offsite protective actions
- Offsite radiological monitoring
- Environmental sample analysis
- Public information
- Communications (licensee/offsite response agencies)

The EOF is on the first floor of the Nuclear Operations Center (NOC) and is approximately 6000 feet southwest of the Fermi 2 Plant on owner-controlled property. Supporting facilities at the NOC include the plant simulator, plant training offices, training classrooms, space for news reporters, etc. Access is available to the facility from two directions via roads under the control of Edison.

The EOF has been designed for habitability in the event of a postulated accidental radioactive release from Fermi 2. The design includes shielding (protection factor of 20), HVAC system with HEPA filters, and portable airborne radioactivity and area radiation monitors that alarm locally to assure that personnel exposures to radiological hazards do not exceed 10 CFR 20 limits.

The EOF is activated for an Alert, Site Area Emergency or General Emergency. The Emergency Officer is responsible for the integration of EOF activities and the offsite emergency response.

The Radiological Emergency Team (RET) Coordinator coordinates the Offsite RET field surveys by radio, as directed by the Radiation Protection Coordinator, from the RET Dispatch Room in the EOF.

The EOF counting laboratory is available for the qualitative analysis of environmental samples collected by the RET, as well as a backup facility to the inplant laboratories. Laboratory facilities are described in Section H.3.2.2.

An extensive communications system is provided in the EOF, which includes communications to the TSC, the Offsite RETs, the NRC, the State Emergency Operations Center (EOC), and intercommunications within the EOF. The system consists of dedicated and general business telephone lines, a microwave system, radios, plant HiCom monitor, a public address system, and data transmission equipment.

The State of Michigan and the Province of Ontario may dispatch representatives to the EOF as they deem necessary to support emergency response activities. The EOF contains provisions such as desks, chairs, telephones, and data transmission equipment to support these representatives. The EOF provides a consultation room and provisions for a small staff of NRC personnel.

An Alternate EOF is located at the Western Wayne Center, approximately 22 miles northwest of Fermi 2. The facility has adequate communications equipment and sufficient space to accommodate the additional personnel required for continuity of dose projection and decision making capability, including coordination of the offsite teams. Portable equipment is provided for the personnel to perform their assigned functions. Procedures are in place which describe the activation and support functions.

H.1.5 Off-Site Assembly Areas/Alternative Facility

Facilities are provided which ensure adequate radiological protection for personnel assigned to emergency duties in the plant, and for the accommodation of personnel evacuated from areas that may be affected by radiation, airborne radioactivity, or other conditions (including hostile actions) that may restrict access to the site.

Designated pre-established off-site assembly areas are located at the Newport Service Center, Dixie Records Center, and Trenton Channel Power Plant. Evacuated non-emergency response personnel will be directed to one or more of these areas or will be sent home. These DTE owned facilities are equipped with communications equipment and have capabilities for radiological monitoring, personnel and vehicle decontamination.

If access to the Fermi 2 site is restricted, emergency response staff can be directed to alternative facilities with communication capabilities for contacting the Control Room, EOF, and plant Security. The primary alternative facility is co-located with the DTE Alternate Emergency Operations Facility (AEOF). If necessary, the Dixie Records Center may also be used. Augmented emergency response staff can be staged at these locations in a manner that provides rapid response to mitigate site damage as soon as the site is accessible.

H.1.6 Incident Command Post

The Incident Command Post is a county owned facility with multiple locations in Monroe County that can be used. DTE Energy provides personnel upon request to staff liaison positions in the facility to assist the Unified Command personnel during a response to a significant security event at Fermi 2.

H.2 Onsite Monitoring Systems

Onsite monitoring systems used to initiate emergency measures in accordance with Section D, as well as those for conducting ongoing assessment, include geophysical phenomena monitors, radiological monitors, process monitors, and fire and combustion product detectors.

H.2.1 Geophysical Phenomena

H.2.1.1 **Meteorological Monitoring** - The meteorological monitoring system at Fermi 2 presently meets the requirements of Regulatory Guide 1.23.

The onsite 60-meter meteorological tower has meteorological sensors that include a temperature differential network, a sigma theta signal conditioner, and a precipitation gauge capable of real-time data acquisition. A secondary meteorological system consists of redundant sensors mounted on the 60-meter tower that are independent of the primary system and require redundant signal conditioners, digital data acquisition systems, and power supplies. A block diagram of the modified system is shown in Figure H-1, Block Diagram of DTE Energy Meteorological Data Acquisition System, and Table 1, Meteorological Parameters, indicates the parameters measured.

The meteorological system is capable of providing the following types of data request from IPCS terminals in the Control Room, TSC, and EOF:

- Instantaneous values
- One-minute blocked averages
- Fifteen-minute blocked averages
- Fifteen-minute rolling average
- One-hour blocked average

In addition, the system has the capability of being remotely interrogated on a simultaneous basis by multiple users.

The IPCS provides real-time meteorological data for calculating offsite radiological dose assessment as described in Section I.

H.2.1.2 **Hydrological Monitoring** – The National Oceanic and Atmospheric Administration (NOAA) has an official gauging station in the Fermi 2 intake canal that records Lake Erie water levels.

H.2.1.3 **Seismic Monitoring** - Strong motion triaxial accelerographs are installed in different locations of the reactor/auxiliary building to measure the basic ground motion/time history acceleration, as well as the seismic motion. Passive earthquake recording instrumentation has been provided to measure various ground motion and in structure response spectra. The passive instruments serve as backup for the active sensors.

H.2.2 **Radiological Monitoring** - The area, effluent, portable, and post-accident radiation monitors are listed in Table H-2 through Table H-5:

- Table H-2, Typical Area Radiation Monitors
- Table H-3, Radiological Effluent Monitors
- Table H-4, Typical Portable Monitors
- Table H-5, Post-Accident Process and Effluent Radiation Monitors

H.2.3 **Process Monitors** - The process monitors are listed in Table H-6, Process Radiation Monitors.

H.2.4 **Fire and Combustion Product Detectors** - Fire and combustion product detectors are installed throughout the plant to monitor various vital areas. These are classified as ionization, photoelectric, thermal fixed-temperature, thermal rate-of-rise, and infrared detectors.

H.3 Offsite Monitoring Systems

H.3.1 Geophysical Phenomena

H.3.1.1 **Meteorological Monitoring** - The meteorological monitoring system at Fermi 2 is operated to NRC standards. Sufficient redundancy is built into the system so only under the most unusual circumstances would site data be unavailable. Should any of the parameters required for dose assessment become unavailable, supplementary meteorological data is available via the corporate computer system. Corporate personnel maintain a contract with a vender that provides various weather and forecast

data. Also, National Weather Service (NWS) data is available by contacting the nearest NWS office via telephone.

H.3.1.2 **Hydrological Monitoring** - NOAA has gauging stations at Gibraltar, Michigan, about 10 miles north-northeast of the plant on the Detroit River, and Toledo Ohio, about 22 miles south-southwest of the plant on Lake Erie. Data will be obtained from the Toledo station by calling the Toledo Coast Guard should the gauge at Fermi 2 become inoperable.

H.3.1.3 **Seismic Monitoring** - Seismic data can be obtained from the United States Geological Survey or the University of Michigan in Ann Arbor, Michigan as a backup resource.

H.3.2 Radiological Monitoring

H.3.2.1 **Offsite Monitoring** - An ongoing Radiological Environmental Monitoring Program (REMP) is consistent with the Fermi 2 Technical Specifications. The program is described in detail in the Fermi 2 Offsite Dose Calculation Manual.

H.3.2.2 **Laboratory Facilities** - The EOF laboratory is the designated facility for the receipt and analysis of environmental samples during emergencies. The inplant Chemistry and Radiation Protection laboratories are also available for the analysis of environmental samples.

The calibration and operational readiness of all laboratory equipment is assured in accordance with plant procedures. Typical equipment capabilities for all laboratory facilities are listed in Table H-7, Typical Laboratory Capabilities.

Provisions for analyses of environmental samples have also been established with the contractor or vendor who conducts the routine REMP program.

H.4 Integrated Plant Computer System (IPCS)

The emergency response function of the IPCS is to scan plant instrumentation and gather, display, and store data needed to analyze and exchange information on plant conditions between emergency response facilities. IPCS computer terminals are located in the Control Room, OSC, TSC, EOF (i.e. all emergency facilities) as well as other onsite locations. The functions of IPCS are described in detail in the UFSAR.

The emergency response function of the IPCS interfaces with the Meteorological Data Acquisition System (MDAS) to provide and retain the data needed to project offsite doses.

The following information can be acquired or determined through the IPCS:

- Plant status and dynamics prior to and during the accident
- Safety Parameter Display System (SPDS)
- Records and trends various plant parameters
- Quantity of radioactive gases released to the environment
- Prevailing meteorological status

- Radiological accident assessment (impact of dose on public health and safety)
- Record of monitored parameters for the duration of an emergency

The Emergency Response Data System (ERDS) transmits a selected subset of IPCS data points to the NRC Operations Center using a Virtual Private Network (VPN) appliance. The VPN device is maintained in DTE's Corporate Data Center, and supplements voice transmission of information over the Emergency Notification System (ENS) with near real-time electronic plant data during emergencies.

H.5 Emergency Equipment and Supplies

Equipment and supplies needed to support the emergency response effort fall in general categories:

- Communications equipment
- Protective clothing
- Respiratory protection equipment
- Radiological monitoring equipment
- Environmental sampling equipment
- Decontamination supplies
- Miscellaneous tools and equipment
- Data and reference material

Radiation Protection emergency equipment and supplies are listed in Radiation Protection Procedure 67.000.405. Backup equipment and supplies are available at designated plant storage locations.

The operational readiness of Radiation Protection emergency equipment and supplies is ensured by conducting inventories at least quarterly in accordance with Radiation Protection Procedure 67.000.405. Kits containing decon or protective clothing supplies only are inventoried at least annually in accordance with Radiation Protection Procedure 67.000.405. Equipment/instruments will be physically checked at the time of the inventory and those instruments that require calibration prior to the next inspection are replaced with calibrated ones. Calibration intervals are based on the recommendations of the manufacturer and previous operational history. Perishable supplies, such as batteries, are replaced as required at the time of the inventory.

TABLE H-1: METEOROLOGICAL PARAMETERS

10-Meter Level

Wind Speed
Wind Direction
Air Temperature
Dew Point ^(a)
Sigma Theta

60-Meter Level

Wind Speed
Wind Direction
Air Temperature

Miscellaneous

Temperature Difference (60-10M)
Precipitation at Ground Level ^(a)
Pasquill Stability Class

a. Available from the primary system only.

TABLE H-2: TYPICAL AREA RADIATION MONITORS (a)

| I.D. Number^(b) | Location^(c) | Range | Function |
|--------------------------------------|-------------------------------|---|---|
| D21-N106 | G-13-3-AB | 10 ⁻² -10 ² mR/hr | Main Control Room Monitor |
| D21-N107 | F-9-SB-RB | 10 ⁻¹ -10 ³ mR/hr | SE Corner Monitor |
| D21-N108 | B-10-SB-RB | 10 ⁻¹ -10 ³ mR/hr | SW Corner Room Monitor |
| D21-N109 | B-15-SB-RB | 10 ⁻¹ -10 ³ mR/hr | NW Corner Room Monitor |
| D21-N110 | G-17-SB-RB | 10 ⁻¹ -10 ³ mR/hr | NE Corner Room Monitor |
| D21-N111 | G-11-SB-RB | 10 ⁻¹ -10 ³ mR/hr | HPCI Room Monitor |
| D21-N115 | F-15-5-RB | 10 ⁻² -10 ² mR/hr | Water Activity & Criticality Monitor |
| D21-N123 | M-17-1-RWB | 10 ⁻² -10 ² mR/hr | Radwaste Control Room |
| D21-N128 | G-11-4-AB | 10 ⁻² -10 ² mR/hr | Personnel Protection- Stand-by Gas Treatment System (SGTS) |
| D21-N132 | G-13-1-AB | 10 ⁰ -10 ⁴ mR/hr | Operating Information |
| D21-N145 | C-12-1-RB | 10 ⁻¹ -10 ³ mR/hr | Drywell Maintenance Monitor |

-
- (a) Table H-2 does not include all the Area Radiation Monitors (ARMs) in the plant, but is typical of those available.
- (b) Detector and/or channel number
- (c) Locations by column-row-floor-building
RB = Reactor Building; AB = Auxiliary Building; RWB = Radwaste Building; SB = Sub
Basement

TABLE H-3: RADIOLOGICAL EFFLUENT MONITORS

| I.D. Number^(a) | Location^(b) | Type | Function |
|--------------------------------------|-------------------------------|---------------------|--|
| D11-P293 | E-3-1-CWPH | Liquid Effluent | Monitor Liquid Discharges to Lake Erie |
| D11-P281 | N-17-3-TB | Gaseous Effluent | Monitor Gaseous Discharges from RW Building |
| D11-P279 | N-3-3-TB | Gaseous Effluent | Monitor Gaseous Discharges from Turbine Building |
| D11-P275 | H-15-5-AB | Gaseous Effluent | Monitor Gaseous Discharges from SGTS |
| D11-P276 | G-13-5-AB | Gaseous Effluent | Monitor Gaseous Discharges from SGTS |
| D11-P280 | F-10-5-AB | Gaseous Effluent | Monitor Gaseous Discharges from Reactor Building |

(a) Panel number, detectors located in panels.

(b) Locations by column-row-floor-building

Buildings are CWPH = Circulating Water Pump House; AB = Auxiliary Building; TB = Turbine Building; RWB = Radwaste Building

TABLE H-4: TYPICAL PORTABLE MONITORS(a)

- Contamination (personnel, wounds, equipment, areas) -
Friskers (hand-held and PCM 1A) GM detectors/Gas flow proportional
- Radiation detection and measurement -
GM survey meter/ion chamber survey meters
- High range radiation -
GM survey meter with range to 1000 R/hr
- Airborne Radioactivity (particulates, radioiodine gaseous)
Continuous Air Monitors
Long Term Air Samplers (>24 hrs)
Short Term Air Samplers (<24hrs)

(a) The Fermi 2 Updated Final Safety Analysis Report provides a description of portable monitors in Chapter 12.

**TABLE H-5: POST-ACCIDENT PROCESS AND EFFLUENT
RADIATION MONITORS**

| I.D. Number | Location | Type | Function |
|--------------------------|-----------------|-------------------------------|--|
| D11-N443A ^(a) | Drywell | Post-Accident ARM | Monitor Post-Accident Radiation Level in Containment |
| D11-N443B ^(a) | Drywell | Post-Accident ARM | Monitor Post-Accident Radiation Level in Containment |
| D11-P300A ^(b) | G-12-5-AB | Post-Accident Effluent PRM | Monitor Post-Accident SGTS Effluent |
| D11-P300B ^(b) | G-12-5-AB | Post-Accident Effluent PRM | Monitor Post-Accident SGTS Effluent |

-
- (a) Detector and/or channel number
(b) Panel numbers, detectors located in panels.

TABLE H-6: PROCESS RADIATION MONITORS^(a)

| I.D. Number^(b) | Location^(c) | Type | Range | Function |
|--------------------------------------|-------------------------------|-------------|-------------------------------|--|
| D11-N004A,B | M-0-3-TB | PRM | 10^0 - 10^6 mR/hr Info | Monitor Off-Gas-Advisory |
| D11-N006A,B | G-12-1-RB | PRM | 10^0 - 10^6 mR/hr | Limit Fission |
| D11-N006C,D | G-11-1-RB | PRM | 10^0 - 10^6 mR/hr | Product Carryover |
| D11-N008 | J-8-1-TB | PRM | 10^{-1} - 10^6 cps | Detect In-leakage to GSW |
| D11-N009 | G-13-1-AB | PRM | 10^{-1} - 10^6 cps | Detect In-Leakage to RBCCW |
| D11-N010A,B | F-13-3-RB | PRM | 10^{-2} - 10^2 mR/hr | Monitor Fuel Pool |
| D11-N010C,D | B-13-4-RB | PRM | 10^{-2} - 10^2 mR/hr | Exchange & Initiate SGTS |
| D11-N400A | A-13-2-RB | PRM | 10^1 - 10^7 cpm | Monitor In-leakage |
| D11-N400B | D-10-2-RB | PRM | 10^1 - 10^7 cpm | to EECW |
| D11-N401A | B-15-2-RB | PRM | 10^1 - 10^7 cpm | Monitor to in-leakage |
| D11-N401B | B-10-2-RB | PRM | 10^1 - 10^7 cpm | to RHR Service water |
| D11-N408 | F-10-4-AB | PRM | 10^1 - 10^7 cpm | Monitor Reactor Building Vent for Fission Products |
| D11-N410 | G-10-4-AB | PRM | 10^1 - 10^7 cpm | Monitor Reactor Building Vent for Fission Products |

-
- (a) The Fermi 2 Updated Final Safety Analysis Report provides a detailed description of the Process Radiation Monitoring System in Chapter 11.
- (b) Detector and/or channel number
- (c) Locations by column-row-floor-building
Buildings are: RB = Reactor Building; AB = Auxiliary Building; TB = Turbine Building

TABLE H-7: TYPICAL LABORATORY CAPABILITIES

Implant Chemistry Capabilities

- Gamma emitting isotopic analyses
- Low energy Beta (H-3) emitting isotopic identification
- H₂ and O₂ determination in air
- Trace metals determination
- pH determination
- Conductivity determination
- Boron determination
- Chlorides specification determination
- Lubricants identification
- Dissolved gas determination

EOF Chemistry Capabilities

- Gamma emitting isotopic analyses
- H₂ and O₂ determination in air
- pH determination
- Boron determination

Radiation Protection

- Gamma emitting isotopic analyses
- Alpha/Beta detection

FIGURE H-1:
BLOCK DIAGRAM OF DTE ENERGY
METEOROLOGICAL DATA
ACQUISITION SYSTEM

See UFSAR Figure 2.3-47

I. ACCIDENT ASSESSMENT

This Plan Section indicates the methods, systems, and equipment for assessing and monitoring actual or potential offsite radiological consequences resulting from an emergency event.

I.1 In-Plant Monitoring Capability

Fermi 2 has appropriate equipment, systems, and plant designs to provide the capability to monitor and sample releases from the plant or radioactivity contained in key areas of the plant. These include post-accident sampling capability, radiation effluent monitors, in-plant iodine instrumentation, and containment radiation monitors in accordance with NUREG-0737. These monitors are listed in Tables H-3 through H-6. In all cases where monitoring instrumentation indicates that an actual or potential emergency event exists, steps shall be immediately taken to assess and confirm the validity of the indications. The RERP Implementing Procedure EP-101, Classification of Emergencies includes vital plant parameters and correlation to emergency action levels, as appropriate.

I.2 Source Terms

- I.2.1 Monitoring Instruments Operable** - Accident assessment methodology has been developed that incorporates the calibration of the monitor with a known radionuclide. If possible during an emergency event, the mix of radionuclides will be determined by isotopic analysis. If this information is not available, a conservative radionuclide spectrum is assumed. In the case of effluent source term determinations, the conservative (in terms of offsite dose per quantity of radioactivity released) postulated accident radionuclide spectra is stated in the Fermi 2 Updated Final Safety Analysis Report (UFSAR), Chapter 15. Both the spectrum of radionuclides and magnitude of accident source terms can be correlated to actual monitor readings in a conservative manner.

Based upon readings from accident assessment instrumentation (such as the containment high range radiation monitors), estimates of the magnitude of potential releases are developed. Post-accident sampling can provide the isotopic analysis for these release values.

- I.2.2 Monitoring Instruments Inoperable** - In the unlikely event that instrumentation used for accident assessment is offscale or inoperable, methods and supporting procedures have been established to provide estimates of radioactive releases.

The normal operating release paths (reactor building ventilation, turbine building ventilation, and radwaste building ventilation) are designed to isolate at setpoints associated with 10 CFR 20 and 10 CFR 50, Appendix I design objectives. If the isolation fails, either a default accident radionuclide mix or the most recent analysis (of the isotopic mix of radionuclides) is used with design air flow rates. If possible, samples will be obtained and analyzed.

The accident range Containment High Range Radiation Monitors (CHRRMs) in the drywell and the Accident Range Monitoring System (AXMS) in the standby gas treatment system have redundant systems. It is not postulated that these monitors would all become inoperable or offscale at any one given time. However, specific methods for handling the above occurrences, or combinations thereof, are established in procedures to correlate survey meter readings with monitor readings. In all cases, where and when available, field monitoring data will be used in conjunction with dose projection data.

I.3 Dose Assessment

Dose Assessment is the process that enables Fermi 2 emergency workers to predict the level and location of radiation exposure in the event of a release or potential release of radioactivity to the environment.

- I.3.1 **Airborne Releases** – The capability for projecting offsite dose and dose rates due to actual or potential airborne releases is via a computer program (Raddose-V) interfaced with IPCS. Raddose-V is available in the Control Room, TSC, and EOF.

I.3.1.1 **Methodology** - The basic methodology used to calculate the offsite radiological dose and dose rates was developed by and agreed upon by DTE Energy (Fermi 2), Entergy Nuclear Palisades L.L.C., and Indiana Michigan Power and accepted by the State of Michigan's Department of Environmental Quality for use in emergency planning. This methodology carried out by a computer program (Raddose-V) determines the Total Effective Dose Equivalent (TEDE) dose and dose rate due to noble gases and the Committed Dose Equivalent (CDE) adult thyroid dose and dose rate due to airborne radioiodine. Projected doses are compared against Protective Action Guidelines (EPA-400) as part of Protective Action Recommendation decision making for members of the public. A detailed description of the dose assessment computer model is included in the section below.

Dose calculations are proportional to the relative downwind concentration of a radioactive release. Dose calculations are a function of atmospheric stability class, wind speed, and downwind distance from the plant. The present model uses a variable trajectory, puff advection dispersion model. Releases are modeled as “ground level” releases and downwind building wake (turbulent mixing) effects have been incorporated. The finite cloud methodology is used for computation of doses for these ground level releases.

A lake breeze study was conducted at Fermi 2 which resulted in a site specific lake breeze equation. A dose adjustment factor was calculated based on the lake breeze equation and applied to dose and dose rates during lake breeze conditions. The possible existence of a lake breeze is based on the following criteria:

- Date - April 1 to October 31
- Time - daylight hours between time of sunrise and sunset
- Wind Direction - Between 57° and 168°
- Stability Class - A, B, or C

I.3.1.1.1

Dose Assessment Computer Model – A computer dose assessment program (Raddose-V) has been incorporated into the Integrated Plant Computer System (IPCS). The IPCS provides the Raddose-V program with meteorological and effluent radiation monitoring data to calculate a release rate. If IPCS data is not available, the user enters data manually. Raddose-V provides the capability of evaluating up to two concurrent release pathways during each calculational step. A third release pathway referred to as the potential projection (LOCA accidents only) is based on an assumed containment leak rate and activity. Release pathways are associated with the following accident types:

- LOCAC - Loss Of Coolant Accident (LOCA) in Primary Containment (pathway via Standby Gas Treatment System (SGTS))
- LOCAX – LOCA outside Primary Containment (pathway via SGTS)
- FHA – Fuel Handling Accident (pathway via SGTS)
- RXBLG – Reactor Building Accident (pathway via Reactor Building HVAC exhaust)
- RWBLG – Radwaste Building Accident (pathway via Radwaste Building HVAC exhaust)
- TRBLG – Turbine Building Accident (pathway via Turbine Building HVAC exhaust)
- PCV – Primary Containment Vent (Torus/Drywell atmosphere via torus hardened vent pipe)

For each available accident type, the program maintains an initial isotopic inventory. Initial inventories for each accident type, except FHA, are designated by three source types (Coolant, Gap, or Core). A specific inventory is used for the FHA. Once reactor shutdown occurs, the source type inventories are adjusted for radiological decay and parent in-growth. The program can also model accidents with an operating (ATWS) reactor. In this case, the applicable source type is used with no radiological decay.

The Coolant source type reflects a mix of noble gases and iodines due to normal plant operation (i.e. assumes no fuel damage). The Gap source type assumes noble gas to iodine ratio of 5 to 1 and the Core source type 50 to 1. The user selects the appropriate source type based on actual or projected plant status and core conditions.

1. Determination of the Radionuclide Release

The program determines a radionuclide release rate based on the following:

- Age of the radionuclide mix
- Monitor readings
- Plant parameters pertinent to airborne transport of radionuclides

From this, the program provides dose information through the current time step as well as the projection period. The default projection period is four hours.

a. Release Based on CHRRMs readings.

LOCA-type releases can be evaluated on the basis of CHRRMs. Such modeling assumes a release of noble gases and iodines to the drywell atmosphere. The release fraction is determined by the selected source type. Using the source type to represent the potential drywell airborne mix at the time of shutdown, the program calculates a time decay of the mix to determine the mix of nuclides at the time of the monitor reading. This, combined with the monitor reading and the monitor response characteristics, is then used to determine the actual radionuclide inventory of the drywell atmosphere at the time of the monitor reading.

The release of these radionuclides to the reactor building from the drywell is assumed to be at the Technical Specifications leak rate (0.5% of volume per day). As such, this is a potential release. The actual leak rate could be higher or lower depending on containment pressure, integrity of penetration seals, or any number of other conditions.

Releases from the primary containment are next assumed to enter the reactor building and processed through the SGTS. The SGTS has no effect on noble gases, but is assumed to have a 99% removal efficiency for iodines. Those radionuclides passed through to the environment represent the potential radionuclide release.

b. Releases Based on Effluent Monitor Readings

Releases that are measured by effluent monitors can be handled much more directly than those based on CHRRM readings. The accident type determines the release pathway and the associated effluent radiation monitor. Just as in the case of the potential release based on CHRRMs, the selected source type (radionuclide mix) is corrected for decay between the time of shutdown and the time of the monitor reading. This information, combined with knowledge of the monitor response characteristics and the release path flow, allows the radionuclide release rate to be determined.

c. User Input of the Nuclide Mix

If knowledge of the radionuclide mix and release rates is available from post-accident sample analyses or any other source, it can be entered manually by the user.

2. Modes of Operation

Raddose-V has the capability to operate in an automatic or manual mode. In automatic mode, once the user selects an accident type and source type, current meteorological and radiation monitoring data is automatically obtained from the IPCS. If data is not available from IPCS, the user can enter data manually. Further, Raddose-V has the capability to calculate dose and dose rates based on several other data options. They are:

Back Calculation Using Field Dose Rates
Isotopic Sample Analyses
Direct Entry (of release rates)
Monitor Override (worse case Design Base Analyses)

I.3.2 **Liquid Releases** - The primary method for determining doses from the liquid pathway involves the analysis of a sample for isotopic content and a calculation using the Offsite Dose Calculation Manual (ODCM).

I.3.3 **Long Term Dose Assessment** - For long term analysis, field monitoring data can be used to calculate the dose to the population.

I.4 **Field Monitoring**

The Radiological Emergency Teams (RETs) perform field monitoring within the plume exposure pathway. These teams are trained to conduct field surveys, obtain air samples, and collect environmental samples. At the onset of an emergency with potential for actual radiological releases in excess of ODCM limits, RET members can be dispatched to field positions. Each team is provided with air-sampling equipment, personnel dosimetry, radiological survey instruments, procedures, and radios (see Section H). From two to four team members are available and can be dispatched within 60 and 90 minutes respectively of an alert or higher emergency declaration.

The RETs are deployed in a manner that provides preliminary estimates of plume location and exposure rates. Established sampling and monitoring locations, based on prevailing wind directions, may be utilized. The information collected is forwarded to the TSC or EOF when activated. When activated, the EOF assumes responsibility for the direction of environmental assessment activities. The EOF laboratory may be used for the receipt and qualitative analysis of all environmental sample media.

If necessary, supplemental teams trained in field survey and monitoring techniques can be called out or may be requested through the mutual assistance agreements. They are also equipped with appropriate monitoring and sampling equipment. When the EOF is functional, the Radiation Protection Coordinator directs the activities of the offsite RETs. Data from the supplemental field monitoring team(s) is reported to the EOF.

J. PROTECTIVE RESPONSE

This Plan Section describes the range of protective actions developed for plant workers and the general public within the plume exposure pathway, the 10-mile Emergency Planning Zone.

J.1 Onsite Notification

The Protected Area is the zone within the Owner-Controlled Area bounded by the Protected Area security fence. The plant itself is located within this zone. In the event of an emergency situation at Fermi 2, methods are established for notifying personnel within the Protected Area. These people include the following:

- Employees not having emergency assignments
- Visitors
- Contractor personnel

Methods are also established for notifying personnel outside the Protected Area yet still in facilities within the Owner-Controlled Area (site boundary). These facilities include the following:

- Fermi Information Center
- General Training and Orientation Center (GTOC)
- Technical Assistance Center (TAC)
- Nuclear Operations Center (NOC)
- Nuclear Training Center (NTC)
- Fermi 1

The primary means of notification within the Protected Area is the emergency alarm system. This system provides an audible signal that alerts personnel to the existence of an emergency event. The following emergency events have specific audible alarm signals:

- Fire - yelp
- Tornado - siren
- Plant area - steady

Following the alarm, personnel are advised of the nature of the emergency via the plant intercom (HiCom) system.

Activation of the emergency alarm system and the subsequent announcement is the responsibility of the Emergency Director. The activation and the appropriate announcement are performed immediately upon classification of an Alert, Site Area Emergency, or General Emergency. If an Unusual Event occurs, notification announcements are performed on a timely basis consistent with the nature of the event. Following activation of the emergency alarm system, all personnel within the Protected and Owner-Controlled Areas are notified and advised within 15 minutes of an emergency situation.

All personnel working within the Protected Area (including contractors, vendors, and visitors) are either trained in emergency procedures or escorted at all times by an authorized individual. Within the Protected Area, a visitor is anyone who has not been issued an unescorted access keycard for the Protected Area. Within the Owner-Controlled Area, a visitor is defined as anyone whose work location is not Fermi 2. The cognizant supervisor is responsible for visitors inside the Owner-Controlled Area but outside the Protected Area. Authorized escorts are trained in emergency procedures and in the appropriate steps to be taken by visitors in an emergency. Visitors entering the Protected Area meet their assigned escorts at the Security Access Building and are promptly escorted back if an emergency event requiring accountability occurs.

The Fermi Information Center, GTOC, TAC, NOC, NTC, and Fermi 1 will be notified of an emergency by Hi-Com announcement.

J.2 Evacuation

A Plant Area Evacuation is defined as the supervised evacuation of all nonessential personnel from a specific area of the plant to another designated safe area. A Protected Area Evacuation is defined as the supervised evacuation of all nonessential personnel from the Protected Area. A Site Area Evacuation is defined as the supervised evacuation of all nonessential personnel from all Owner-Controlled Areas of the site, including but not limited to the Protected Area, the Fermi Information Center, GTOC, TAC, Fermi 1, NTC, and the NOC. Evacuated personnel will be directed to assemble at the Newport Service Center, Dixie Records Center, Trenton Channel Power Plant or will be sent home.

Figure J-1 identifies the Owner-Controlled Area. The evacuation routes and the relocation and monitoring centers for persons leaving Fermi 2 are shown in Figure J-2. The directions of travel and the off-site assembly area(s) (Edison's Newport Service Center, Dixie Records Center, and Trenton Channel Power Plant) are determined by the Emergency Director based on the current meteorological and emergency conditions. An announcement will be made over the HiCom system in the Protected Area, Fermi Information Center, GTOC, TAC, NOC, NTC, and Fermi 1. Nuclear Security is responsible for traffic direction and control of persons leaving Fermi 2, including special provisions for a coordinated evacuation under severe conditions such as inclement weather, large groups of personnel to be evacuated, or a high level radioactive release. Assembly, accountability, and evacuation are conducted in accordance with established procedures.

- J.2.1 **Monitoring and Decontamination** - In the event of a Site Area Evacuation, all nonessential personnel exiting the Protected Area are monitored for contamination by passing through passive portal radiation monitors. Personnel in the Fermi Information Center, GTOC, TAC, NOC, NTC, and Fermi 1 are directed to offsite assembly areas and monitored, if emergency conditions warrant, by individuals trained in the operation of personnel monitoring equipment. Vehicles are monitored, as necessary, depending on the amount and direction of the radioactivity released.

Facilities will be available at the offsite assembly areas should it be necessary to decontaminate individuals and/or vehicles. Decontamination equipment is listed in Radiation Protection Procedure 67.000.405. Personnel monitoring and decontamination is performed using techniques described in Radiation Protection Procedure 67.000.400. Vehicle monitoring and decontamination is performed in accordance with EP-220.

- J.2.2 **Accountability** - Nuclear Security will account for each person inside the Protected Area, using either the security computer system or by manual inspection of personnel's badges.

Either method provides for accountability of all individuals within 30 minutes of the start of an assembly and accountability and continuously thereafter for all individuals remaining within the protected area.

The accountability of tour groups is the responsibility of the guides who are escorting each group. All ERO personnel report to their respective emergency response facility for assembly and accountability. All non-ERO personnel report to the NTC for assembly and accountability.

J.3 **Radiation Protection Equipment**

Adequate supplies of radiation protection equipment including protective clothing are maintained for persons remaining in or entering the Protected Area or the Emergency Response Facilities. This emergency equipment is listed, maintained, and inspected in accordance with Radiation Protection Procedure 67.000.405.

Onsite Medical maintains adequate amounts of potassium iodide (KI) to support the Onsite Emergency Response Organization for emergency situations at Fermi 2. The Emergency Director is responsible for authorizing the distribution and use of KI. Protective clothing and respiratory protection equipment are used as directed by the Emergency Director (or delegate).

J.4 Protective Actions

In a radiological emergency, an estimate must be made of the radiation dose that affected population groups may potentially receive. A protective action is taken to avoid or reduce the effects of this projected radiation dose. The Protective Action Guideline (PAG) is a predetermined level of projected dose to individuals in the population at which protective actions are warranted.

Procedures are in place to recommend plume exposure protective actions to State and local offsite emergency response agencies. Prompt notification of protective action recommendations is made to State and local agencies. The Nuclear Regulatory Commission is informed of these recommendations.

The implementation of protective actions taken offsite to protect the health and safety of the general public is the responsibility of the State of Michigan in conjunction with local emergency response agencies.

The Michigan Emergency Management Plan, Monroe County Emergency Management Plan, and Wayne County Emergency Operations Plan describe the provisions to implement measures for the plume exposure pathway EPZ for State and local emergency response personnel and the public. Provisions include the following:

- Maps showing evacuation routes, evacuation areas, congregate care centers, and shelter areas
- Maps showing the population distribution around the nuclear facility
- Methods for notifying all segments of the transient and resident population
- Means for protecting handicapped, institutionalized, or confined individuals whose mobility may be impaired
- Methods for registering and monitoring evacuees at reception centers
- Means of relocation, including reception centers, access control, and evacuation routes and methods
- Methods for protecting the public from consumption of contaminated foodstuffs

- J.4.1 **Basis for Recommending Protective Actions** - The Manual of Protective Action Guides and Protective Actions for Nuclear Incidents (EPA 400-R-92-001) and NUREG-0654 are used as the basis for recommendations for protective actions for the offsite public. Table J-1 summarizes possible protective actions to be implemented by State and local agencies during an emergency. As a further aid in determining appropriate protective actions, Table J-2 contains representative shielding factors provided by typical structures against direct exposure from the plume.
- J.4.2 **Evacuation Time Estimates** - When evacuation is being considered, the time required to implement the evacuation may be an important factor in reaching a protective action recommendation. Evacuation time estimates in the plume exposure EPZ are contained in a separate study "Fermi 2 Nuclear Power Plant Development of Evacuation Time Estimates." KLD Associates, Inc., Commack, NY, performed this study for DTE Energy. The evacuation time estimate study includes considerations for periods of peak traffic congestion, adverse weather conditions, and the evacuation of institutionalized population.
1. An estimate of population density in the plume exposure EPZ is conducted annually, not to exceed 365 days. It is performed to determine any potential impact(s) to the existing Evacuation Time Estimate due to potentially significant population changes.
- J.4.3 **Population Distribution** - The 10-mile and 50-mile EPZs are shown in Figures A-1 and A-2. The population distribution in the 10-mile EPZ is given in Table J-3. There are approximately 5.5 million people in the 50-mile EPZ.
- J.4.4 **Offsite Monitoring** - The locations of the offsite environmental monitoring stations are listed in the Offsite Dose Calculation Manual.

**TABLE J-1: EXPOSURE PATHWAYS, INCIDENT PHASES,
AND PROTECTIVE ACTIONS (a)**

| POTENTIAL EXPOSURE PATHWAYS AND INCIDENT PHASES | | PROTECTIVE ACTIONS |
|---|-------------------------|--|
| 1. External radiation from facility | <i>Early (b)</i> | Sheltering Evacuation Control of access |
| 2. External radiation from plume | | Sheltering Evacuation Control of access |
| 3. Inhalation of activity in plume | | Sheltering Administration of stable iodine Evacuation Control of access |
| 4. Contamination of skin and clothes | <i>Intermediate (c)</i> | Sheltering Evacuation Decontamination of persons |
| 5. External radiation from ground deposition of activity | | Evacuation Relocation Decontamination of land and property |
| 6. Ingestion of contaminated food and water | <i>Late (d)</i> | Food and water controls (e) |
| 7. Inhalation of resuspended activity | | Relocation Decontamination of land and property |

- (a) Reference: U.S. Environmental Protection Agency, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents," EPA 400-R-92-001.
- (b) Period at the beginning of a nuclear incident when immediate decisions for effective protective actions are required and must therefore usually be based primarily on the status of the facility and the prognosis for worsening conditions.
- (c) Period beginning after the source and releases have been brought under control and reliable environmental measurements are available for use as a basis for decisions on additional protective actions.
- (d) Period beginning when recovery actions designed to reduce radiation levels in the environment to acceptable levels for unrestricted use are commenced.
- (e) The use of stored animal feed and uncontaminated water to limit the uptake of radionuclides by domestic animals in the food chain can be applicable in any of the phases.

TABLE J-2: REPRESENTATIVE SHIELDING FACTORS FROM GAMMA CLOUD SOURCE (a)

| <i>Structure or Location</i> | <i>Representative Shielding Factor (b)</i> | <i>Representative Range</i> |
|-------------------------------------|--|-----------------------------|
| Outside | 1.0 | --- |
| Vehicles | 1.0 | --- |
| Woodframe house (c) (no basement) | 0.9 | --- |
| Basement of wood house | 0.6 | 0.1 to 0.7 (d) |
| Masonry house (no basement) | 0.6 | 0.4 to 0.7 (d) |
| Basement of masonry house | 0.4 | 0.1 to 0.5 (d) |
| Large office or industrial building | 0.2 | 0.1 to 0.3 (d, e) |

- (a) Taken from SAND 77-1725 (Unlimited Release)
- (b) The ratio of the dose received inside the structure to the dose that would be received outside the structure.
- (c) A wood-frame house with brick or stone veneer is approximately equivalent to a masonry house for shielding purposes.
- (d) This range is mainly due to different wall materials and different geometries.
- (e) The shielding factor depends on where the personnel are located within the building (for example, the basement or an inside room).

**TABLE J-3: DISTRIBUTION OF PERMANENT RESIDENTS BY SECTOR IN THE TEN-MILE
EMERGENCY PLANNING ZONE**

Population distribution provided in “Fermi 2 Nuclear Power Plant Development of Evacuation Time Estimates”.

Figure J-1
OWNER-CONTROLLED AREA

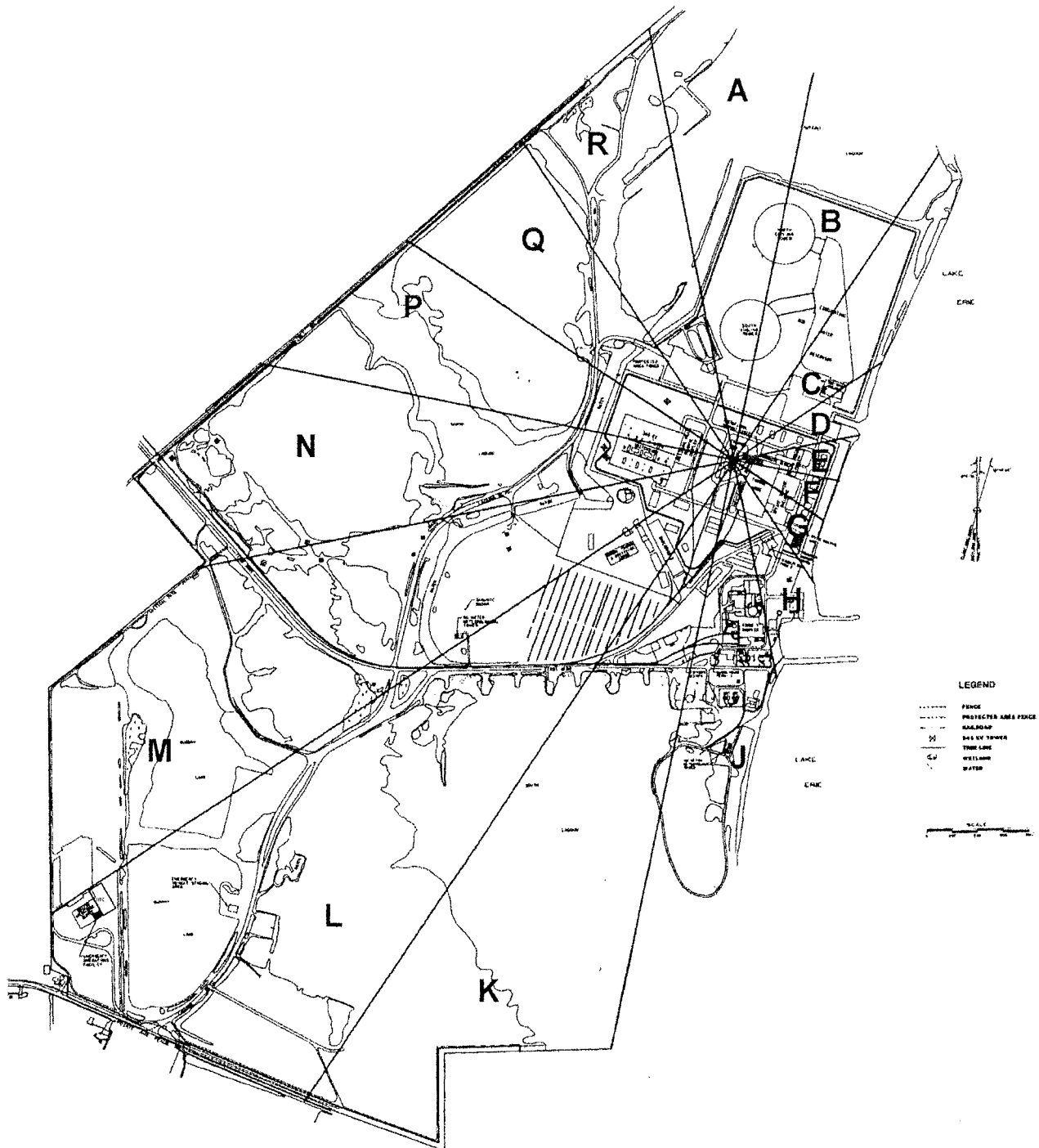
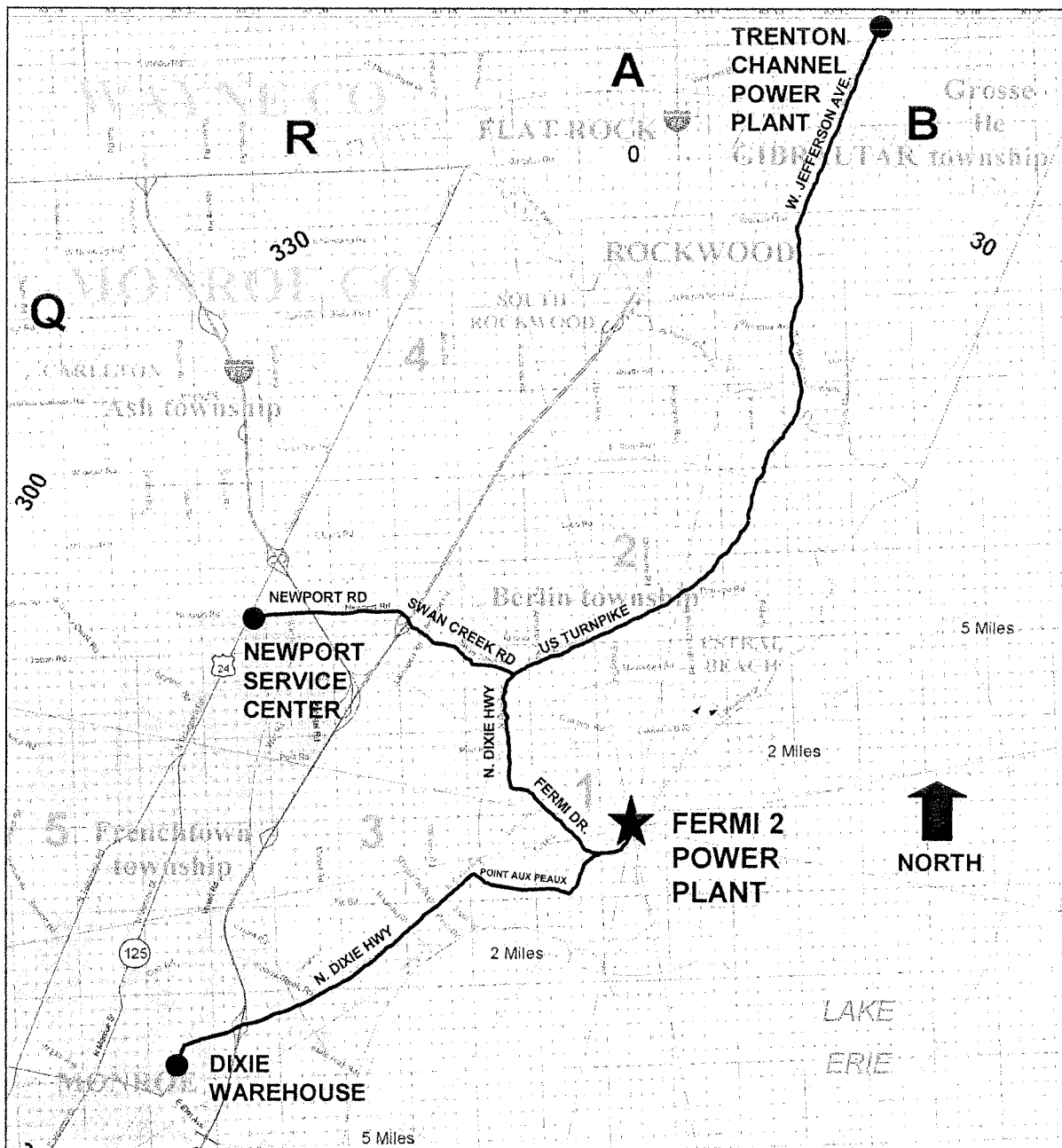


Figure J-2
EVACUATION ROUTES AND ASSEMBLY AREAS



K. RADIOLOGICAL EXPOSURE CONTROL

This Plan Section describes the means for controlling radiation exposure for emergency workers at Fermi 2.

K.1 Exposure Guidelines

In an emergency situation, all reasonable measures will be taken to maintain the radiation exposure of emergency personnel providing rescue, first aid, decontamination, ambulance, medical treatment services, or performing corrective or assessment actions within applicable limits specified in 10 CFR 20.

The Emergency Director will evaluate any emergency response exposures in excess of 10 CFR 20 limits. The Emergency Director is responsible for authorizing emergency personnel to exceed the 10 CFR 20 dose limits, if deemed necessary. The Emergency Director will consult with Radiation Protection personnel to the greatest extent possible before granting this authorization.

Table K-1 contains the basis for emergency exposure criteria. The guidelines for these exposures are consistent with EPA Guidance on Dose Limits for Workers Performing Emergency Services (EPA 400-R-92-001).

K.1.1 Control of Personnel Radiation Exposure - Every reasonable effort will be made to ensure that during an emergency no worker exceeds the exposure limits stated in Table K-1.

Emergency response personnel who must enter radiation areas where they might be expected to receive higher than normal doses will be fully briefed regarding their duties and expected actions, expected dose rates, stay time and other hazards. All such individuals will be adequately trained in appropriate Radiation Protection procedures. Personnel will use respiratory protective devices (if required) in accordance with MRP09.

When authorized by the Emergency Director, administration of radioprotective drugs such as potassium iodide (KI) may mitigate the consequences of the inhalation of radioiodines. Section J discusses the KI authorization requirements to DTE Energy and contract personnel.

K.2 Dosimetry

In an emergency, dosimetry service for all emergency personnel will be provided on a 24-hour basis. As a minimum, personnel are issued secondary dosimetry (that is, either a direct reading dosimeter (DRD) or an electronic dosimeter) and a Dosimeter of Legal Record (DLR). These personnel monitoring devices are issued at the Radiation Protection (RP) access control point, or an alternate designated area. Dosimetry records that document radiological exposures are evaluated and maintained in accordance with RP procedures.

In-plant emergency response personnel will normally use electronic dosimeters (along with their DLRs) which have alarming and LED readout capabilities. Alarm set points for dose and dose rates are preset by RP personnel that can be changed based on radiological conditions. If electronic dosimeters become inoperable or unavailable, RP will issue DRDs commensurate with known or anticipated dose rates and approximate time needed to complete tasks.

Offsite emergency responders who enter the Protected Area (ambulance/rescue personnel, medical, fire department, police, etc) along with Offsite RETs will be issued DRDs and DLRs from emergency kits.

If DRDs are used, they are typically zeroed prior to use and frequently read by the individual. Personnel exposures, as determined from DRDs, are totaled and evaluated in accordance with RP procedures.

In instances where the extremity dose may pose a greater hazard than the whole-body exposure, personnel are issued extremity dosimeters, such as TLD ring badges.

A permanent record of radiation exposure is provided by the DLR. DLRs are read promptly by qualified vendor personnel using equipment located remote from radiological influence of events at Fermi 2. Further, personnel may be required to receive a whole body count at the direction of RP personnel to assess any internal dose.

K.3 Decontamination Criteria

Personnel contamination is minimized to the greatest extent feasible by following established Radiation Protection practices and procedures. These include the proper use and removal of protective equipment and clothing, followed by personnel contamination surveys. Any transferable contamination that is above background requires decontamination. Facilities for onsite personnel decontamination are available in the Radwaste Building and include provisions such as decontamination supplies, spare clothing, and contamination survey instrumentation.

K.4 Contamination Control

Contaminated areas will be designated and clearly identified to minimize personnel contamination or the spread of contamination in the plant. Access to these areas is controlled and personnel will take the required precautionary measures and use the appropriate protective clothing and equipment. Prior to being released for general use, contaminated areas are decontaminated in accordance with Radwaste Decontamination Procedures. Personnel leaving contaminated areas are monitored to ensure that they or their clothing are not contaminated. The Radiation Protection access control point and the primary access portal are provided with portal monitors and personnel friskers to prevent the spread of loose surface contamination outside the protected area.

In the event that personnel become contaminated, they are decontaminated in accordance with established procedures. If normal decontamination procedures do not reduce contamination to acceptable levels, the case will be referred to an Onsite Medical representative. Extra clothing is available for the replacement of contaminated personal clothing at the decontamination facilities.

Because of the possibility of the presence of radioiodine during emergency situations, particular attention is focused on searching for skin contamination when monitoring personnel during evacuation. Personnel found to be contaminated are directed to the onsite or offsite decontamination facility as appropriate.

Depending on the nature of an injury and the amount and location of contamination, contaminated injured personnel are either treated at Fermi 2 or transported to Mercy-Memorial Hospital or Oakwood Southshore Medical Center for treatment. The treatment of contaminated injured personnel is described in Section L.

All equipment and tools are checked for contamination before being removed from a known contaminated area. If tools or equipment are contaminated, they will be decontaminated in accordance with Radwaste Decontamination Procedures.

Contaminated waste resulting from personnel decontamination and contaminated material that cannot be decontaminated or utilized as controlled contaminated equipment are handled in accordance with Radwaste Decontamination Procedures.

Drinking water and food supplies are not allowed into contaminated or potentially contaminated areas. If a potential for contamination or contamination is discovered in an area already containing drinking water or food, the food and water are surveyed to ensure that they are not contaminated. If contamination is discovered, appropriate actions will be taken based on the level and location of the contamination.

In general, contaminated areas and materials are permitted to be returned to normal use when there is no detectable radiation above the normal background levels. However, some areas and equipment may have to be returned to use above these limits. In such cases, special precautions and measures are taken to prevent personnel contamination and to limit the spread of contamination. These precautions may include using protective clothing or covering the contaminated items or area.

TABLE K-1: EMERGENCY EXPOSURE CRITERIA (a)

| <i>Dose limit (rem) (b)</i> | <i>Activity</i> | <i>Condition</i> |
|-----------------------------|--|--|
| 5 | all | |
| 10 (c) | protecting valuable property | lower dose not practicable |
| 25 (c) | life saving or protection of large populations | lower dose not practicable |
| >25 (c) | lifesaving or protection of large populations | only on a voluntary basis to persons fully aware of the risks involved |

- (a) Reference: U.S. Environmental Protection Agency, “Manual of Protective Action Guides and Protective Actions for Nuclear Incidents,” EPA 400-R-92-001.
- (b) Limit for Total Effective Dose Equivalent to non-pregnant adults during the duration of the emergency. Dose to the lens of the eye should be limited to 3 times the stated values. Dose to all other organs, including thyroid, skin, and body extremities, should be limited to 10 times the stated values.
- (c) Only the Emergency Director can authorize exposure in excess of 10CFR20 limits.

Additional Criteria

1. All emergency exposure will be maintained ALARA.
2. Exposure limits are for total exposure received over the duration of an emergency.
3. Emergency exposures will be justified if the maximum risks permitted to workers are acceptably low, and the risks or costs to others that are avoided by their actions outweigh the risks to which the workers are subjected.
4. Declared pregnant workers should be excluded from exposure in excess of 10CFR20 limits.

L. MEDICAL SUPPORT

This Plan Section describes the arrangements made for medical services for contaminated injured personnel.

L.1 Offsite Support

- L.1.1 Hospitals** - Arrangements have been made for medical treatment of Fermi 2 personnel who may have injuries complicated by the presence of radioactive contamination and/or overexposure to radiation. The primary treatment facility is Mercy Memorial Hospital in Monroe, Michigan. A back-up medical facility is established at Oakwood Southshore Medical Center in Trenton, Michigan, located approximately 12 miles from the plant.

Mercy Memorial Hospital and Oakwood Southshore Medical Center are adequately supplied and equipped to receive and treat contaminated patients. DTE Energy maintains emergency cabinets containing contamination control supplies and dosimeters at both hospitals.

- L.1.2 Services** - In addition, DTE Energy will coordinate medical emergency activities and ensure the following are provided:

- An emergency medical plan in place for the treatment of radiation-related injuries
- A radiation emergency medical team qualified to implement the emergency medical plan
- Written procedures regarding radiological medical emergencies detailing actions to be taken onsite
- Written procedures regarding radiological medical emergencies detailing actions to be taken onsite for offsite transportation of injured/contaminated individuals and hospital notifications
- Immediate telephone consultation for the hospital staff and/or Fermi 2 personnel with respect to evaluation and treatment of individuals involved in a radiological medical emergency
- Recommendations regarding facilities, equipment, and supplies required for effective implementation of the emergency medical plan
- Annual training of plant, ambulance, and hospital personnel who have responsibilities regarding radiological medical emergencies
- An annual emergency medical drill providing immediate evaluation and critique of the results
- Backup radio-bioassay laboratory services for the evaluation of body burdens and exposure consequence
- Arrangements, as required, for the medical evaluation and/or treatment of radiological casualties at a definitive care center for specialized treatment

L.2 Onsite First Aid Capability

A nurse is usually onsite during normal working hours five days a week. In addition, at least two persons qualified in first aid methods equivalent to Red Cross multi-media training will be onsite at all times. First aid to injured personnel can normally be performed in conjunction with any needed decontamination. However, if immediate treatment of the injury is vital, medical treatment takes precedence over decontamination efforts. This philosophy also extends to offsite emergency care involving radioactive contamination.

L.3 Transportation Arrangements

Contractual arrangements have been made with an authorized emergency transport carrier (ambulance service) for the transportation of patients from Fermi 2 who may have injuries complicated by the presence of radioactive contamination or who may have exceeded personnel exposure limits.

M. REENTRY AND RECOVERY PLANNING AND POST-ACCIDENT OPERATIONS PLANNING

During an emergency, immediate action is directed toward limiting the consequences of the incident in a manner that gives maximum protection to the plant personnel and the general public. Once the situation is under control, the emergency actions shift into the recovery phase. Recovery actions shall be planned and deliberate.

M.1 Reentry and Recovery

The actual magnitude of an emergency event will dictate the extent of personnel involvement in the recovery operations.

- a. For events of a minor nature, the normal on-shift organization should be adequate to perform recovery actions (Unusual Event classifications).
- b. For events involving significant damage to plant systems required to maintain operation of the plant, the onsite emergency organization should be adequate to coordinate the necessary recovery actions (Alert classifications).
- c. For events involving damage to plant systems required to maintain safe shutdown of the reactor, the complete recovery organization should be adequate to manage the necessary recovery actions (Site Area or General Emergency classifications).

The Emergency Director has the responsibility for implementing this procedure if the emergency classification is at the Unusual Event or Alert level.

The Emergency Officer has the responsibility for authorizing recovery operations for events classified as a Site Area or General Emergency.

The Manager, Nuclear Outage Management has the overall responsibility as Recovery Manager to coordinate and manage all recovery operations.

Once the Emergency Officer has determined that the Site Area or General Emergency event has terminated or is stable, the Manager, Nuclear Outage Management (or alternate) becomes the Recovery Manager and activates the Recovery Organization. The Recovery Manager will order a meeting of the Recovery Organization. All recovery actions are developed via evaluation of plant conditions and data acquired throughout the emergency. All planned actions and recommendations to reduce protective action measures will be thoroughly reviewed to minimize radiation exposure or other hazards to recovery personnel and the public. The Recovery Organization will develop, coordinate, and expedite plans and schedules for recovery operations. The Nuclear Safety Review Group (NSRG) will oversee the activities of this team to ensure that all nuclear safety aspects of the recovery operations are satisfied.

The following are typical criteria for declaring an emergency event terminated:

- Radiation levels in all inplant areas are stable and are decreasing with time.
- The reactor is in a shutdown condition with adequate core cooling available.
- The release of radioactive materials to the environment is within ODCM limits and the potential for additional uncontrolled releases is minimal.
- Fire, flooding, or similar emergency conditions which do not effect reactor operation are under control or have ceased.

The recovery plans, from a practical standpoint, must be flexible enough to meet the needs of the existing event. It is not possible to anticipate in advance all the conditions that may be encountered in an emergency situation. The recovery plans will be developed by DTE Energy and coordinated with federal and local governmental officials.

The following actions will be taken, as required, prior to authorizing reentry into the plant:

- Review available radiation surveillance data and determine plant areas potentially affected by radiation and/or contamination.
- Review radiation exposures of personnel required to participate in the recovery operations and determine the need for additional personnel as well as the source of these additional personnel.
- Review the adequacy of radiation survey instrumentation and equipment (for example, types, ranges, number, calibration, etc.)
- Plan survey team activities to include:
 - Areas to be surveyed
 - Radiation and contamination levels anticipated
 - Radiation survey equipment required
 - Shielding requirements and availability
 - Protective clothing and equipment required
 - Access control procedures
 - Issuance of new Radiation Work Permit
 - Exposure control limits and personnel dosimetry required
 - Decontamination requirements
 - Communication equipment required

The initial reentry into the plant areas should encompass the following activities with task priority determined by the Recovery Manager:

- Determine the initial required recovery operations.
- Observe any hazards or potential hazards associated with recovery operations.
- Make a comprehensive radiation surveillance of plant facilities and designate all radiological problem areas.
- Isolate hazardous areas of the plant by using appropriate warning signs and rope barriers.
- Revise security access lists to prevent unauthorized or inadvertent entry into hazardous areas.

The recovery operation, as defined herein, involves assessing equipment damage and repairs; installing shielding, rope barriers, signs and tags; and decontaminating and cleaning as necessary to place the plant in acceptable, long-term stable condition. Recovery operations will not be initiated until the area(s) affected by the emergency has been defined. Particular attention will be directed toward isolating components and systems as required to control or minimize the hazards. A systematic investigation will be conducted to determine what equipment has been damaged and the extent of the damage.

Recovery operations can be terminated when the plant has been returned to pre-accident levels of radiation and contamination and a condition which is acceptable and controllable for an extended period of time or to normal operating condition.

M.2 Recovery Organization

The Recovery Organization is shown in Figure M-1. The organization is based on the organization and functions as described in NUREG-0696, Functional Criteria for Emergency Response Facilities and NUREG-0737, Supplement 1, Clarification of TMI Action Plan Requirements, Requirements for Emergency Response Capability. Recovery Organization functions are briefly described below:

Recovery Manager (Manager – Nuclear Outage Management or Alternate)

- Determines and declares when a stable condition exists and when the plant is ready to begin reentry and recovery.
- Authorizes funds and the utilization of manpower and equipment necessary to accomplish the recovery operation.
- Notifies offsite authorities, in a timely manner, that a recovery operation will be initiated and indicates any expected or potential offsite impact.
- Authorizes offsite notification whenever recovery operations have potential offsite effects.

Nuclear Production Coordinator (Director, Nuclear Production or Alternate)

- Authorizes the start of plant reentry activities.
- Prepares an analysis of the circumstances leading up to and resulting from the emergency, together with recommendations to prevent a recurrence.
- Ensures that As Low As Reasonably Achievable (ALARA) concerns are addressed in Recovery-related operations activities.
- Maintains the plant during the recovery operation.
- Develops implementing and operating procedures to support recovery efforts.
- Assures that plant personnel are trained in recovery-related operating and maintenance procedures.
- Develops post-accident plans and procedures for obtaining solid, liquid, and gaseous samples as required.
- Implements recovery plans and schedules.
- Implements offsite and onsite radiation monitoring programs.
- Authorizes the return to normal operations when approved by the NRC.

Offsite Activities Coordinator (Regional Manager, Corporate & Governmental Affairs or Alternate)

- Provides recovery information to offsite officials.
- Coordinates offsite activities with onsite activities.

Nuclear Safety Review Group Coordinator (Manager, Nuclear Licensing or Alternate)

- Ensures that all nuclear safety aspects of the reentry and recovery operation are satisfied by calling upon the NSRG to review the various recovery organization activities.
- Analyzes and develops input pertinent to plant licensing issues.
- Provides expertise to support offsite radiation monitoring programs and activities.

Technical and Engineering Support Coordinator (Director, Nuclear Engineering or Alternate)

- Develops post-accident engineering procedures necessary to maintain a safe reactor shutdown.
- Coordinates activities with Plant Operations group.
- Assures that ALARA concerns are addressed in Recovery-related engineering activities.
- Coordinates A/E or consultant activities if required.
- Advises on plant and engineering technical matters.
- Coordinates the design activities that support recovery activities.
- Analyzes and develops solutions for instrumentation difficulties and the functions controlled by those instruments.

Quality Assurance Coordinator (Manager, Nuclear Quality Assurance or Alternate)

- Ensures that quality assurance requirements are met in all aspects of the recovery operations.

Administration and Planning Support Coordinator (Manager, Strategic Planning or Alternate)

- Provides administrative and clerical support for the recovery operation.
- Establishes schedules and priorities that ensure an orderly and progressive work flow.
- Tracks and expedites vendor contracts, corporate and governmental commitments.

Public Information Coordinator (Supervisor, Communication Planning or Alternate)

- Disseminates information about the recovery operation to the media.

Outage Management Coordinator (Outage Coordinator or Alternate)

- Coordinates outage activities with engineering, production, and construction activities.
- Provides input in determining outage activity priorities.

Nuclear Security Coordinator (Manager, Nuclear Security or Alternate)

- Coordinates security activities such as personnel accountability and site access control.

Secretary

- Documents Recovery meetings including list of meeting(s), participants, action items, status reports, etc.
- Coordinates all information for dissemination to the appropriate recipients.

M.3 Recovery Operations Notification

It is the responsibility of the Recovery Manager to notify corporate and offsite authorities, in a timely manner, that a recovery operation is initiated. Additional notifications will be made whenever the operation may have potential offsite effects.

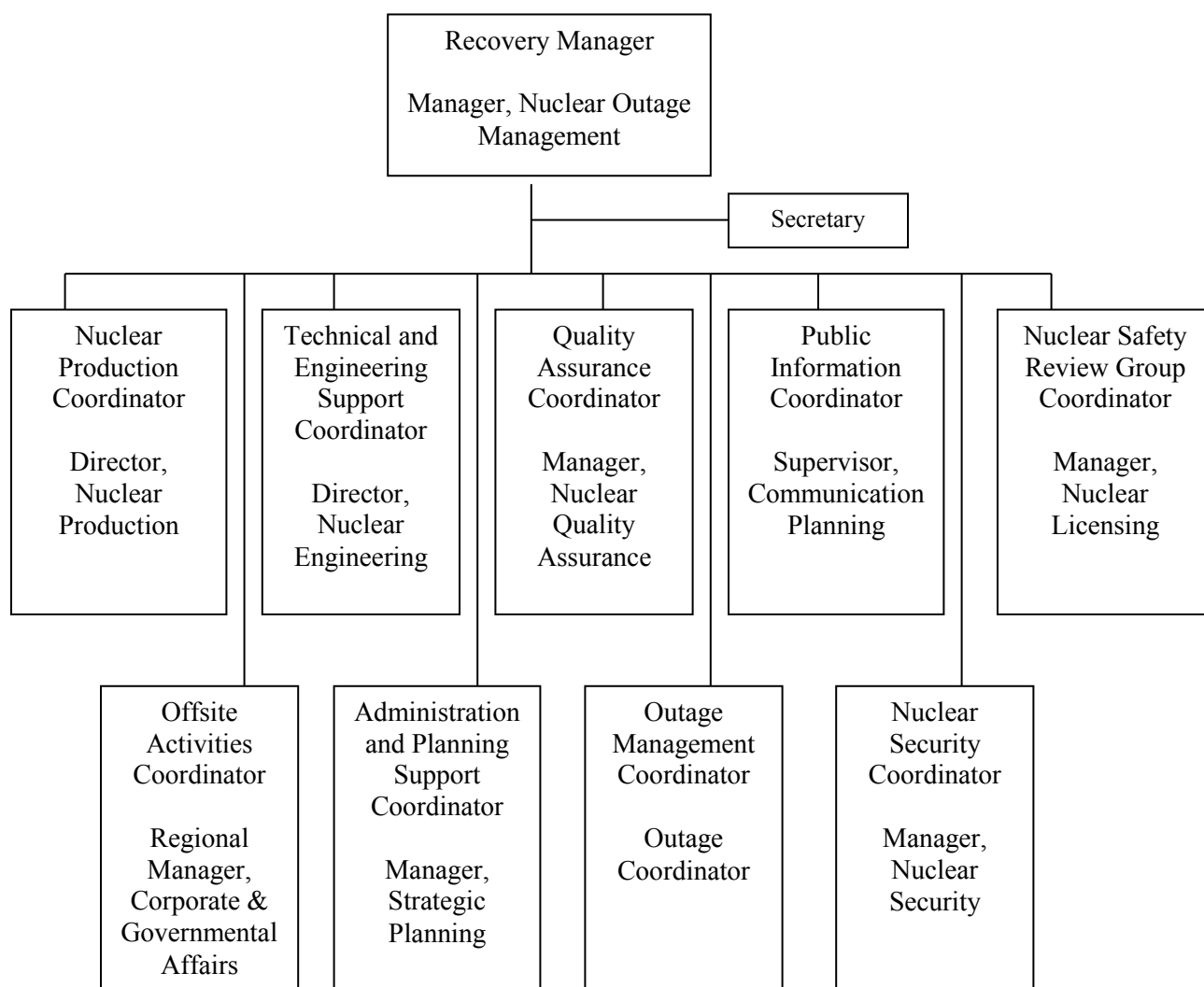
M.4 Population Exposure Evaluation

Dose Assessment personnel in the EOF will continue to cooperate with state and federal agencies and periodically update total population exposure estimates. In the event a release of radioactive material is planned, the anticipated offsite dose will be calculated, including an estimate of the total population dose.

M.5 Recovery Organization Composition

It is not intended that the Recovery Organization be limited to only those persons/functions identified in Figure M-1. As specific emergency circumstances dictate, additional expertise will be called upon to participate in the Recovery Organization.

Figure M-1
RECOVERY ORGANIZATION



N. EXERCISES AND DRILLS

This Plan Section describes the program of exercises and drills conducted to develop and maintain emergency response preparedness skills and to evaluate emergency response preparedness capabilities.

N.1 Exercise Requirements

An exercise is an event that tests the integrated capability of a major portion of the basic elements existing within emergency response preparedness plans and organizations. Exercises mobilize personnel and resources enough to adequately verify the capability to respond to an accident scenario.

Exercises may be announced or unannounced at various times and weather conditions using different scenarios.

The utility is required to exercise the emergency plan biennially according to 10 CFR 50, Appendix E, Section F. State and local agencies will participate at the frequency specified by 44 CFR 350, unless they choose to participate more often. Exercises are critiqued biennially by licensee evaluators and may be critiqued by Federal and/or State observers.

N.2 Drill Requirements

A drill is a supervised event aimed at evaluating, developing, and maintaining skills in a particular operation. Drills are supervised and evaluated by evaluators/controllers who are knowledgeable in their area of observation and/or have attended a pre-drill briefing. As a minimum, the following drills will be conducted.

N.2.1 Communications

Communication equipment between the Fermi 2 Emergency Response Facilities (Control Room, Technical Support Center and Emergency Operations Facility), Michigan State Police, the Monroe County Central Dispatch and Wayne County Central Communications, are tested monthly.

Communication equipment to the NRC's Emergency Response Organizations is tested monthly.

Communications between the Fermi 2 Emergency Response Facilities and the appropriate offsite response organizations are tested during annual drills.

Communications between the EOF and the Offsite Radiological Emergency Teams (RETs) are tested annually. Annual drills shall also test the ability to understand the content of messages.

Emergency Telephone Directories are verified and updated if necessary, quarterly.

- N.2.2 **Fire** - Fire drills are conducted quarterly. A fire drill involving the Frenchtown Fire Department is conducted annually.
- N.2.3 **Medical Emergency** - Medical emergency drills, which involve a simulated contaminated individual and participation by local support agencies (for example, contracted ambulance service, Oakwood Southshore Medical Center or Mercy Memorial Hospital), are conducted annually.
- N.2.4 **Radiological Monitoring** - RET drills are conducted annually. These drills will include the collection and analysis of air samples and shall include sample media such as water, grass, and soil from the Owner-Controlled Area or nearby offsite areas. In addition, these drills provide the opportunity for the assessment of communication and record keeping capabilities.
- N.2.5 **Radiation Protection** - Radiation Protection drills involving the sampling and analysis of simulated elevated radioactive airborne or liquid samples as well as direct radiation measurements in the plant environment are conducted semiannually. These drills may be conducted in conjunction with the biennial exercise.
- N.2.6 **Additional Drills** - Additional drills will be scheduled as necessary to provide adequate training of personnel, provide emphasis on weak areas, and ensure an adequate level of emergency preparedness. In years in which an exercise is not conducted, at least one drill involving a combination of some of the principal functional areas of onsite emergency response shall be conducted. Additional drills will vary in scope such that all required elements as described in 10 CFR 50.54 Appendix E IV F 2.J. are demonstrated over an eight calendar year exercise cycle.

N.3 **Drill and Exercise Scenarios**

Drill and exercise scenarios will contain, as a minimum, the following:

- Basic objective(s) of the drill or exercise and appropriate evaluation criteria
- Date, time period, place(s) of the drill or exercise, and participating organizations
- Simulated events
- Time schedule of real and simulated initiating events
- Narrative summary that describes the conduct of the exercise or drill and includes such items as simulated casualties, offsite fire department assistance, rescue of personnel, use of protective clothing, deployment of emergency teams and public information activities
- Detailed data sheets (as required)
- Assignments for qualified controllers/evaluators and provisions for observers from Federal, State, and local organizations as appropriate

N.4 Conducting Drills and Exercises

Official Federal, State, or local observers are provided advance exercise scenario materials as appropriate:

- The NRC will be provided with advance materials in accordance with FEMA and NRC guidance documents.
- State and local observers will be provided advance materials on an as-needed basis.

All drills and exercises (except communications drills) are preceded by a conference at which personnel conducting or monitoring the drill or exercise obtain instructions and guidance. As soon as practicable following the drill or exercise, a critique is held. A formal evaluation based on the results of the critique is prepared. The Manager, RERP is responsible for management review of observer and participant comments and the implementation of appropriate corrective actions.

O. RADIOLOGICAL EMERGENCY RESPONSE PREPAREDNESS TRAINING

Radiological emergency response training is provided to all individuals in the emergency response organization. The integrated training program includes General Employee Training for all persons at Fermi 2 and detailed training for individuals and groups with responsibilities during an emergency. The training program provides initial training and periodic retraining. Drills and exercises constitute a portion of the integrated training program and are discussed separately in Section N.

O.1 Qualification Requirements for Onsite Emergency Response Personnel

All emergency response personnel are initially trained and some receive periodic retraining. Furthermore, each emergency response organization team must participate in a drill or exercise at least annually. The initial and requalification training requirements for emergency response organization positions are specified in Selection, Training, and Qualification Program Description QP-ER-665, RERP Emergency Response Organization. Completion of training activities is recorded in the applicable computer data system(s). The RERP Training Program is conducted in accordance with RERP Implementing Procedures.

During drills, on the spot correction of unsatisfactory performance will be made and demonstration of the proper performance will be offered by the instructor/controller.

Personnel assigned to emergency teams that provide first aid will complete a training course equivalent to Red Cross Multi-Media on a schedule compatible with the Red Cross requirements.

O.2 Training Requirements for Offsite Organizations

DTE Energy provides specialized training for the contracted ambulance service, the Frenchtown Fire Department, Mercy Memorial Hospital and Oakwood Southshore Medical Center. This training may include topics from the following areas:

- RERP Plan orientation
- Communications and emergency notifications
- Transporting and treating contaminated patients
- Radiation fundamentals
- Protection against radiological hazards
- Emergency equipment
- Site access procedures
- Identification of individuals onsite in control of offsite support activities

In addition to the specific offsite training stated above, DTE Energy, Michigan State Police Emergency Management and Homeland Security Division, and the local counties have developed a four part training program that is presented annually to the local offsite emergency response organizations. The program consists of the following basic information which serves as emergency worker orientation.

- Emergency Management in Michigan; includes plans, procedure, and organization
- Nuclear power plant operations
- Basics of Radiation

Additional specific training programs are available to local organizations through the Michigan State Police Emergency Management and Homeland Security Division.

DTE Energy also conducts an annual seminar for offsite State and local government personnel who will be involved with the onsite/offsite emergency response facilities, emergency action levels, emergency classification, meteorology, dose assessment, field surveys, and protective action recommendations. This seminar provides a basis for understanding the application, process, and interfaces among Fermi 2 and offsite response organizations. The presentation is made available to the following:

- Michigan State Police Emergency Management and Homeland Security Division
- Michigan Department of Environmental Quality
- Province of Ontario, Canada
Ministry of Solicitor General
Ministry of Labor
- Monroe County
- Wayne County

P. RESPONSIBILITY FOR THE PLANNING EFFORT: DEVELOPMENT, PERIODIC REVIEW, AND DISTRIBUTION OF RERP PLANS

This Plan Section identifies key personnel who are responsible for developing, reviewing, and updating the RERP Plan, discusses the RERP format, and describes the review process.

P.1 Responsibilities

The Manager, RERP has overall authority and responsibility for RERP planning for DTE Energy and is responsible for developing and updating the RERP Plan and its implementing and administrative procedures. The Manager, RERP coordinates the development and revision of the plan and procedures with other response organizations. The Manager, RERP will identify the supporting procedures required by other groups.

The Manager, RERP in conjunction with Nuclear Training, is responsible for ensuring that all Emergency Response Organization personnel complete training in emergency preparedness.

The Manager, RERP is responsible for the training of individuals responsible for the planning effort.

P.2 Format of the RERP Plan

The RERP Plan is written in the following format:

- Each Plan section corresponds to a similarly titled section in NUREG-0654/FEMA-REP-1, Revision 1, November 1980, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants (see Appendix 5).
- A specific table of contents is provided.
- A list of implementing and administrative procedures is found in Appendix 3. A list of supporting procedures and documents is found in Appendix 4.

P.3 Review and Revision of the RERP Plan

The Manager, RERP is responsible for ensuring that an annual review of the Plan is conducted. The Letters of Agreement (Appendix 1) between the Fermi 2 Emergency Response Organization and offsite agencies will also be reviewed and updated as required at that time. Changes are recommended based on the following considerations:

- Written critiques and evaluations of drills and exercises, especially recommended corrective actions
- Changes in company or plant organization
- Changes in function or organization of support agencies, including necessary revisions to letters of agreement
- Changes in state or federal regulations or regulatory guidance
- Changes in state or local emergency plans
- Modifications to the plant or site that could affect emergency planning, including modifications to plant systems, emergency equipment, or emergency facilities, etc
- Changes to Technical Specifications
- Recommendations from other organizations, such as state and federal agencies and other utilities
- Significant changes in the areas surrounding the site, such as changes in population density or land usage
- Changes in capabilities of supporting organizations, including local hospitals, ambulance services, fire departments, etc.
- Changes in other plant operating or administrative procedures

Revisions to the RERP Plan are reviewed by affected organizations and approved by the Onsite Review Organization (OSRO). Revised pages indicate where revisions were made and controlled copies are distributed. Documents concerned with review of the RERP Program are retained for at least 5 years.

The Plan shall contain an appendix listing, by number and title those procedures required to implement the Plan. This listing shall cross-reference the RERP Plan Section implemented by each implementing or administrative RERP procedure. The Plan also contains a cross-reference to each section of NUREG-0654 required to be implemented in the Fermi 2 RERP Program in Appendix 5.

P.4 Review and Revision of RERP Program

- P.4.1 **Independent Review** - An independent audit of the RERP Program is to be conducted in accordance with 10 CFR 50.54(t). The review will address all aspects of the RERP Program, including the Plan, implementing and administrative procedures, training, readiness, testing, equipment, and interfaces with the state and local government agencies. This independent review may be conducted in conjunction with a scheduled exercise. Recommended correction actions and any proposed revisions to the RERP Plan are documented and reviewed. The Manager, RERP is responsible for recommending revisions to be made to the RERP Plan or other corrective actions as appropriate.

END OF RERP PLAN TEXT

APPENDIX 1:
LETTERS OF AGREEMENT

LETTERS OF AGREEMENT

Letters of agreement have been obtained from both government agencies and private industry that have agreed to support the Fermi 2 Emergency Response Organization during an emergency. The Letters of Agreement listed below are maintained on file.

Monroe Community Ambulance

Frenchtown Fire Department

General Electric Company - BWR Emergency Support Program
(not a Letter of Agreement)

Institute of Nuclear Power Operations (Nuclear Power Plant
Emergency Response Voluntary Assistance Agreement)

Mercy Memorial Hospital Corporation

Monroe County Community College

Mutual Assistance Agreement between:

DTE Energy
Entergy Nuclear Palisades, L.L.C.
Indiana Michigan Power

Oakwood Southshore Medical Center

U.S. Department of Energy (Chicago Operations Office)

Standard Operating Procedure

APPROVALS

The Michigan Southeastern Local Area EAS plan was developed and approved by the Michigan Southeastern emergency Alert Committee, and the National Weather Service in cooperation with the Michigan State Police Emergency Management Division and County Emergency Management officials. This document is maintained on file.

APPENDIX 3:

LIST OF RERP IMPLEMENTING PROCEDURES

FERMI 2

RERP IMPLEMENTING PROCEDURES

INDEX

| EP NO. | TITLE | RERP PLAN SECTION IMPLEMENTED |
|--------|--|-------------------------------------|
| 101 | Classification of Emergencies | D |
| 102 | Unusual Event | D |
| 103 | Alert | D |
| 104 | Site Area Emergency | D |
| 105 | General Emergency | D |
| 110 | Organization and Responsibilities | B |
| 201-03 | Variances from Routine Radiological Practice and Procedures During an Emergency | K |
| 204-01 | Damage Control and Rescue Team | B,K,L |
| 205-01 | Security Force | B,J |
| 220 | Personnel Monitoring and Radiological Emergency Teams | B,H,I,J,K,L |
| 225 | Radiological Medical Emergencies | L |
| 226 | Potassium Iodide | J,K |
| 290 | Emergency Notifications | E,J |
| 292 | Emergency Call Out - Backup Method | E |
| 301-01 | Technical Support Center | B,F,H,I,J,K,M |
| 302-01 | Operational Support Center | B,F,H |
| 303-01 | Emergency Operations Facility | B,F,H,I,J,K,M |
| 304-01 | Alternate Emergency Operations Facility | H |

RERP IMPLEMENTING PROCEDURES

INDEX (Continued)

| EP NO. | TITLE | RERP PLAN SECTION IMPLEMENTED |
|---------------|--|--|
| 305-01 | Unified Incident Command Post | A,C |
| 402 | Responsibilities of the Recovery Organization | M |
| 530 | Assembly and Accountability and Onsite Protective Actions | J |
| 540 | Drills and Exercises | N,O |
| 542 | Computer-Based Offsite Dose Assessment - Airborne Releases | I |
| 545 | Protective Action Recommendations | I,J |
| 546 | Calculation of Estimated Containment High Range Radiation Monitor or SGTS/AXM Monitor Readings if Instruments are Inoperable or Offscale | I |
| 547 | Rapid Estimate of Core/Fuel Damage based on Containment High Range Radiation Monitor | I |
| 550 | RERP Training Program | O |
| 560 | Alert Notification System – Siren Operation and Maintenance | E |
| 570 | Emergency Call Out System – Testing and Maintenance | E |
| 580 | Equipment Important to Emergency Response | F,H |
| 585 | Emergency Satellite Phones | F |
| 590 | 10CRF50.54(q) Screens and Evaluation | P |
| 601 | Public Education and Information | G |
| 607 | Media Pool Operation | G |
| 608 | Joint Information Center Operation | G |
| Appendix A | Forms | E,N,O |

APPENDIX 4

LIST OF SUPPORTING PROCEDURES AND DOCUMENTS IDENTIFIED IN THE PLAN

SUPPORTING PROCEDURES AND
DOCUMENTS IDENTIFIED IN PLAN

INDEX

1. 10 CFR 20 (Sections B, H, I, K)
2. 10 CFR 50.47 (Preface)
3. 10 CFR 50.54(q) (Preface)
4. 10 CFR 50.54(t) (Section P)
5. 10 CFR 50, Appendix A (Section H)
6. 10 CFR 50, Appendix E (Preface)
7. 10 CFR 50, Appendix E, Section F (Section N)
8. 10 CFR 50, Appendix I (Section I)
9. 44 CFR 350 (Section N)
10. NUREG-0654/FEMA-REP-1, Revision 1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants (Preface, Sections B, J, P)
11. NUREG-0696, Functional Criteria for Emergency Response Facilities (Section M)
12. NUREG-0728, Revision 4, NRC Incident Response Plan (Sections A, C)
13. NUREG-0737, Supplement 1, Clarification of TMI Action Plan Requirements, Requirements for Emergency Response Capability (Sections B, I, M)
14. U.S. NRC Regulatory Guide 1.23, Onsite Meteorological Programs (Safety Guide 23) (Section H)
15. American Industrial Hygiene Association Respiratory Protection Devices Manual (Section E)
16. Act 390 of the Public Acts of 1976 (Section A)
17. Fermi 2 Updated Final Safety Analysis Report (Sections B, H, I)
18. Fermi 2 Technical Specifications (Preface, Sections B, D, I, P)
19. EPA 400-R-92-001, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents (Sections I, J, K)
20. National Response Framework (Sections A, C)

SUPPORTING PROCEDURES AND
DOCUMENTS IDENTIFIED IN PLAN

INDEX (continued)

21. INPO Emergency Resources Manual (Section C)
22. Michigan Emergency Management Plan (Preface, Sections A, C, J)
23. Monroe County Emergency Management Plan (Preface, Sections A, C, G, J)
24. Wayne County Emergency Operations Plan (Preface, Sections A, C, J)
25. Sandia Report, SAND 77-1725, Public Protection Strategies for Potential Nuclear Reactor Accidents: Sheltering Concepts with Existing Public and Private Structures (Section J)
26. Advent Engineering Services, Inc., Evacuation Time Estimate Analyses for the Fermi 2 Nuclear Power Plant Emergency Planning Zone (Section J)
27. MRP09, Respiratory Protection, (Section K)
28. Radiation Protection Procedure 67.000.400, Personnel Decontamination and Assessment, (Section J)
29. Radiation Protection Procedure 67.000.405, Maintenance and Inventory of Radiation Protection Emergency Kits, (Sections H, J)
30. Fermi 2 Offsite Dose Calculation Manual (Sections, H, I, J)
31. Selection, Training, and Qualification Program Description QP-ER-665 (Section O)

END

APPENDIX 5:

RERP PLAN CROSS-REFERENCE WITH NUREG-0654

RERP PLAN CROSS-REFERENCE WITH NUREG-0654

| NUREG-0654 Requirement | Description of Requirement | RERP Plan Section |
|---------------------------|--|--|
| A.1.a | Identify State, local and Federal emergency organizations intended to be part of overall response organization. | A |
| A.1.b | Specify concept of operation for each emergency organization. | A |
| A.1.c | Illustrate interrelationships in a block diagram. | A (fA-6) |
| A.1.d | Identify a specific individual by title in charge at all times of the emergency response. | A.1, A.2, A.3 |
| A.1.e | Provide for 24-hour per day emergency response and communications. | A.6 |
| A.3 | Establish written agreements with support organizations and/or governments. | Appendix 1 |
| A.4 | Ensure capability for 24 hour coverage for protracted time and identify individual, by title, who is responsible for ensuring continuity of resources. | A.6, B.2 |
| B.1 | Specify plant staff and responsibilities for all shifts and its relation to the responsibilities and duties of normal staff complement. | B (tB-1) |
| B.2 | Designate an Emergency Coordinator on shift. | B.2.1 |
| B.3 | Designate line of succession for Emergency Coordinator and identify specific conditions for higher level utility officials assuming this function. | B.2.1 |
| B.4 | Establish Emergency Coordinator's functional responsibilities and clearly specify which responsibilities may not be delegated. | B.2.1 |
| B.5 | Identify shift augmentation/minimum staffing as identified in NUREG-0654, Table B-1. | B (tB-1) |
| B.6 | Include block diagram of interfaces established between onsite organizations, State, and local organizations. | B (fB-2, fB-3, fB-4, fB-5) A (fA-6) |
| B.7 | Specify corporate, administrative, and technical support personnel who will augment Table B-1 staff. | B (tB-2) |

Note: "t" indicates a Table; "f" indicates a Figure (tB-1 = Table B-1)

RERP PLAN CROSS-REFERENCE WITH NUREG-0654

| NUREG-0654 Requirement | Description of Requirement | RERP Plan Section |
|---------------------------|--|----------------------|
| B.7.a | Identify the individual responsible for logistical support. | B (tB-2) |
| B.7.b | Identify the individual responsible for technical support for planning and reentry/recovery operations. | B (tB-2) |
| B.7.c | Identify management interface with government authorities. | B (tB-2) |
| B.7.d | Identify the individual responsible for information release to the media. | B (tB-2) |
| B.8 | Specify contractor or private organizations who may be required to provide technical support. | Appendix 1 |
| B.9 | Identify services to be provided by local agencies. | Appendix 1 |
| C.1.a | Specify those persons, by title, who are authorized to request Federal assistance. | C.1 |
| C.1.b | Specify what Federal resources are expected, including estimated times of arrival. | C.1 |
| C.1.c | Specify what utility, local, and State resources are available to support Federal response. | C.1 |
| C.2.b | Identify an individual to be dispatched to governmental Emergency Operations Centers. | C.1 |
| C.3 | Identify radiological laboratories and their general capabilities and expected availability for emergency use. | H.1.4 H.3.2.2 |
| C.4 | Identify nuclear and other facilities, individuals, or organizations providing assistance. | C.2 Appendix 1 |
| D.1 | Identify emergency classification/action levels. | D EP101 |
| D.2 | Include all initiating conditions from NUREG-0654 ^(a) Appendix 1 and all postulated accidents found in the Fermi 2 Final Safety Analysis Report. | EP101 |
| E.1 | Establish procedures which prescribe methods of notification/verification. | E.2 |
| E.2 | Establish procedures for alerting, notifying, and mobilizing Emergency Response Organization. | E.1 |

NOTE (a) – all initiating conditions (regarding emergency classifications/action levels) are from NUMARC/NESP-007 endorsed by the NRC in Regulatory Guide 1.101.

RERP PLAN CROSS-REFERENCE WITH NUREG-0654

| NUREG-0654 Requirement | Description of Requirement | RERP Plan Section |
|-----------------------------------|--|------------------------------|
| E.3 | Establish contents of initial emergency messages. | E.2 |
| E.4 | Provide for follow-up messages from Fermi 2 to Offsite Authorities. | E.2 |
| E.4.a | Follow-up messages shall contain location, name, and telephone number of caller. | E.2 |
| E.4.b | Follow-up messages shall contain date and time of incident. | E.2 |
| E.4.c | Follow-up messages shall contain the class of emergency. | E.2 |
| E.4.d | Follow-up messages shall contain type of actual or projected release and duration. | E.2 |
| E.4.e | Follow-up messages shall contain quantity and height of release. | E.2 |
| E.4.f | Follow-up messages shall contain chemical and physical form and estimates of relative quantities and concentrations (noble gases, iodines, particulates) released. | E.2 |
| E.4.g | Follow-up messages shall contain meteorological conditions (wind speed, directions, stability class, etc.) | E.2 |
| E.4.h | Follow-up messages shall contain actual or projected dose and dose rate at site boundary. | E.2 |
| E.4.i | Follow-up messages shall contain projected dose and dose rate at 2, 5, and 10 miles, including affected sectors. | E.2 |
| E.4.j | Follow-up messages shall contain estimate of surface contamination. | E.2 |
| E.4.k | Follow-up messages shall contain Fermi 2 emergency response actions underway. | E.2 |
| E.4.l | Follow-up messages shall contain protective action recommendations. | E.2 |

RERP PLAN CROSS-REFERENCE WITH NUREG-0654

| NUREG-0654 Requirement | Description of Requirement | RERP Plan Section |
|-----------------------------------|---|--------------------------------|
| E.4.m | Follow-up messages shall contain request for offsite support needed onsite. | E.2 |
| E.4.n | Follow-up messages shall contain prognosis for the event. | E.2 |
| E.6 | Establish administrative and physical means for notifying the public and define time needed to provide notifications and instructions to public within the 10-mile EPZ. | E.3 |
| E.7 | Provide supporting information for public protective actions. | E.3 |
| F.1.a | Provide for 24-hour per day notifications to State and local governments. | A.6 |
| F.1.b | Provide for communications with State and local governments. | H.1.1 H.1.2 H.1.4 |
| F.1.c | Provide for communications with Federal emergency response organizations. | F.1 |
| F.1.d | Provide for communications between the nearsite Emergency Operations Facility and State/local Emergency Operations Centers, and offsite Radiological Emergency Teams. | F.2.2 fA-6 fF-2 H.1.4 |
| F.1.e | Provide for alerting personnel in each response organization. | E.1 |
| F.1.f | Provide for communications between Fermi 2 and NRC Headquarters and NRC Region 3, the nearsite Emergency Operations Facility, and offsite Radiological Emergency Teams. | F.2.2 F.1.3 H.1.4 |
| F.2 | Ensure that a coordinated communications link exists between Fermi 2 and mobile medical support facilities. | F.1.5 |
| F.3 | Conduct periodic testing of emergency communication systems. | N.2.1 |

RERP PLAN CROSS-REFERENCE WITH NUREG-0654

| NUREG-0654 Requirement | Description of Requirement | RERP Plan Section |
|-----------------------------------|---|------------------------------|
| G.1 | Provide, at least annually, dissemination of information to the public regarding notification procedures, protective measures, and general information on radiation. | G.1 |
| G.2 | Provide information for the permanent and transient population, and update such information at least annually. | G.2 |
| G.3.a | Designate points of contact and physical locations for news media use in an emergency. | G.3 |
| G.3.b | Provide space for the media at the nearsite Emergency Operations Facility. | G.3 |
| G.4.a | Designate a spokesperson having access to all necessary information. | G.4 |
| G.4.b | Establish arrangements for timely exchange of information among designated spokespersons. | G.4 |
| G.4.c | Establish coordinated arrangements for dealing with rumors. | G.4 |
| G.5 | Conduct coordinated programs at least annually to acquaint news media with emergency plans, information concerning radiation, and points of contact for the release of information in an emergency. | G.5 |
| H.1 | Establish a Technical Support Center in accordance with NUREG-0696, Revision 1. | H.1.2 |
| H.2 | Establish an Emergency Operations Facility in accordance with NUREG-0696, Revision 1. | H.1.4 |
| H.4 | Provide for the timely activation and staffing of facilities. | B E.1 H.1 |
| H.5 | Identify and establish onsite monitoring systems that are to be used to initiate emergency measures as well as those to be used for conducting assessment. | H.2 |

RERP PLAN CROSS-REFERENCE WITH NUREG-0654

| NUREG-0654 Requirement | Description of Requirement | RERP Plan Section |
|-----------------------------------|--|---------------------------------------|
| H.5.a | Onsite equipment includes geophysical phenomena monitors. | H.2.1 |
| H.5.b | Onsite equipment includes radiological monitors. | H.2.2 |
| H.5.c | Onsite equipment includes process monitors. | H.2.3 |
| H.5.d | Onsite equipment includes fire and combustion products detectors. | H.2.4 |
| H.6.a | Acquire data for offsite geophysical phenomena monitors. | H.3.1 |
| H.6.b | Provide for offsite radiological monitoring and sampling. | H.3.2.1 I.4 |
| H.6.c | Provide for fixed or mobile laboratory facilities for analyzing offsite samples. | H.3.2.2 |
| H.7 | Provide for offsite radiological monitors near the plant. | H.3.2.1 |
| H.8 | Provide meteorological instrumentation and procedures and ensure ability to obtain representative current meteorological information from other sources. | H.3.1.1 |
| H.9 | Provide for an onsite Operational Support Center. | H.1.3 |
| H.10 | Inspect, inventory, and check all emergency equipment at least quarterly, and after each use. | H.5 |
| H.11 | Identify emergency kits by general category. | H.5 |
| H.12 | Establish a central point for receipt and analysis of field data and coordination of sample media. | H.3.2.2 |
| I.1 | Identify plant system and effluent parameter values for off-normal conditions and the corresponding emergency classification. | D EP-101 |
| I.2 | Include onsite capability and resources to provide initial values and continuing assessment, including post-accident sampling, radiation and effluent monitors, in-plant iodine instrumentation, and containment radiation monitoring in accordance with NUREG-0578. | H (tH-2, tH-3, tH-4, tH-5,tH-6) |

RERP PLAN CROSS-REFERENCE WITH NUREG-0654

| NUREG-0654 Requirement | Description of Requirement | RERP Plan Section |
|-----------------------------------|--|------------------------------|
| I.3.a | Establish methods and techniques to determine the source term of releases within plant systems. | I.2 |
| I.3.b | Establish methods and techniques to determine the magnitude of release based on effluent monitors and plant system parameters. | I.2 |
| I.4 | Establish the relationship between effluent monitor readings and onsite and offsite exposures for various meteorological conditions. | I.2 |
| I.5 | Acquire and evaluate meteorological information. | H.3.1.1 |
| I.6 | Establish the methodology for determining release rate and projected doses with dose assessment instrumentation inoperable. | I.2.2 |
| I.7 | Describe the capability and resources for field monitoring within the plume exposure EPZ. | I.4 |
| I.8 | Provide method for making rapid field estimates of liquid and gaseous releases. | I.4 |
| I.9 | Ensure capability to detect airborne radioiodine as low as $1\text{E-}7\mu\text{Ci/cc}$ in the field. | I.4 tH-4 |
| I.10 | Establish means to conduct nuclide analysis/ integrated dose and make provisions for comparing such estimates with protective action guides. | I.3 |
| J.1.a | Establish means to warn non-Emergency Response Organization employees onsite. | J.1 |
| J.1.b | Establish means to warn Visitors onsite. | J.1 |
| J.1.c | Establish means to warn contract/construction personnel onsite. | J.1 |
| J.1.d | Establish means to warn other personnel in the Owner-Controlled Area. | J.1 |
| J.2 | Provide for evacuation routes and transport to offsite assembly areas. | J.2 |
| J.3 | Provide for radiological monitoring of evacuees. | J.2.1 |

RERP PLAN CROSS-REFERENCE WITH NUREG-0654

| NUREG-0654 Requirement | Description of Requirement | RERP Plan Section |
|-----------------------------------|--|------------------------------|
| J.4 | Provide for evacuation of non-essential personnel at Site Area Emergency or General Emergency and provide decontamination. | J.2.1 |
| J.5 | Provide for capability to account for all onsite personnel and report names of missing within 30 minutes. | J.2.2 |
| J.6.a | Provide for respiratory protection during an emergency. | J.3 |
| J.6.b | Provide for use of protective clothing during an emergency. | J.3 |
| J.6.c | Provide for the use of radioprotective drugs. | J.3 |
| J.7 | Provide for protective action recommendations to State and local authorities. Recommendations shall include Emergency Action Levels corresponding to projected dose to the population-at-risk. | J.4 |
| J.8 | Provide for evacuation time estimates within the plume exposure EPZ. | J.4.2 |
| J.10.a | Develop maps for evacuation routes and sampling sites, relocation centers, and shelter areas. | J (fJ-2) |
| J.10.b | Include maps showing population around Fermi 2. | J (tJ-3) |
| J.10.c | Provide for means of notifying transients and residents. | J.4 |
| J.10.m | Describe the basis for choice of recommended protective actions from plume exposure pathway during an emergency. | J.4.1 |
| K.1.a | Establish onsite exposure guidelines for removal of injured personnel. | K (tK-1) |
| K.1.b | Establish onsite exposure guidelines for taking corrective actions. | K (tK-1) |
| K.1.c | Establish onsite exposure guidelines for performing assessment actions. | K (tK-1) |
| K.1.d | Establish onsite exposure guidelines for providing first aid. | K (tK-1) |

RERP PLAN CROSS-REFERENCE WITH NUREG-0654

| NUREG-0654 Requirement | Description of Requirement | RERP Plan Section |
|-----------------------------------|--|------------------------------|
| K.1.e | Establish onsite exposure guidelines for performing personnel decontamination. | K (tK-1) |
| K.1.f | Establish onsite exposure guidelines for providing ambulance service. | K (tK-1) |
| K.1.g | Establish onsite exposure guidelines for providing medical treatment services. | K (tK-1) |
| K.2 | Provide an onsite radiation protection program to be implemented during an emergency. Identify individual, by title or position, who can authorize emergency workers to exceed 10 CFR 20 limits. | K.1 B.2.1 |
| K.3.a | Provide for self-reading/permanent record dosimetry and for capability to determine doses received by emergency workers on a 24-hour-per-day basis. | K.2 |
| K.3.b | Maintain dose records of emergency workers and read dosimetry at appropriate (time) frequencies. | K.2 |
| K.5.a | Specify action level for determining the need for decontamination. | K.3 |
| K.5.b | Establish means for decontamination of wounds, supplies, instruments and equipment, and waste disposal. | K.4 |
| K.6.a | Provide for area access contamination control. | K.4 |
| K.6.b | Provide for drinking water and food supply contamination control. | K.4 |
| K.6.c | Provide criteria for return of areas and items to normal use. | K.4 |
| K.7 | Provide for the decontamination of relocated onsite personnel with special attention given to radioiodine contamination of the skin. | J.2.1 K.3 |
| L.1 | Provide for local and backup hospital and medical services to evaluate radiation exposure and uptake. | L.1.1 |
| L.2 | Provide for onsite first aid capability. | L.2 |
| L.4 | Arrange for transport of victims of radiation accidents to medical facilities. | L.3 |

RERP PLAN CROSS-REFERENCE WITH NUREG-0654

| NUREG-0654 Requirement | Description of Requirement | RERP Plan Section |
|-----------------------------------|---|------------------------------|
| M.1 | Develop general plans and procedures for Reentry/ Recovery operations. | M.1 |
| M.2 | Identify by position and title key members of the Recovery Organization, including their authority and responsibilities. | M.2 |
| M.3 | Specify means for informing organizations that Recovery operations are to be initiated, and what organizational changes might occur. | M.3 |
| M.4 | Establish a method to periodically estimate total population exposure. | M.4 |
| N.1.a | Define and conduct exercises per NRC/FEMA rules. | N.1 |
| N.1.b | Conduct announced and unannounced exercises under various weather conditions and times, and with various scenarios. | N.1 |
| N.2.a | Communications with the State, local authorities, and the NRC shall be tested monthly. Communications between Fermi 2, State and local emergency operations centers, and field teams, shall be conducted annually. | N.2.1 |
| N.2.b | Fire drills shall be conducted in accordance with Technical Specifications. | N.2.2 |
| N.2.c | A medical emergency drill which contains provisions for participation by local support services agencies shall be conducted annually. | N.2.3 |
| N.2.d | Plant environs and radiological monitoring drills shall be conducted annually, and shall include collection and analysis of all sample media. | N.2.4 |
| N.2.e.1 | Conduct Health Physics drills semi-annually that involve response to, and analysis of, simulated elevated airborne and liquid samples, and direct radiation measurements in the environment. | N.2.5 |

RERP PLAN CROSS-REFERENCE WITH NUREG-0654

| NUREG-0654 Requirement | Description of Requirement | RERP Plan Section |
|-----------------------------------|---|------------------------------|
| N.3.a | Scenarios shall contain basic objectives and evaluation criteria. | N.3 |
| N.3.b | Scenarios shall contain dates, time periods, places, and participating organizations. | N.3 |
| N.3.c | Scenarios shall contain a list of simulated events. | N.3 |
| N.3.d | Scenarios shall contain a time schedule of real and simulated events. | N.3 |
| N.3.e | Scenarios shall contain a narrative summary of events. | N.3 |
| N.3.f | Scenarios shall describe arrangements for, and advance materials provided to, official observers. | N.3 N.4 |
| N.4 | Conduct a critique as soon as possible following completion of the drill/exercise, and produce a formal evaluation as a result of the critique. | N.4 |
| N.5 | Establish management controls for assigning and implementing corrective actions. | N.4 |
| O.1 | Conduct training for appropriate individuals. | O.1 |
| O.1.a | Provide site specific training to offsite emergency response organizations. | O.2 |
| O.2 | Emergency Response Organization training shall, besides classroom training, include participation in drills/exercises. | O.1 |
| O.3 | First Aid training shall be equivalent to Red Cross Multi-Media. | O.1 |

RERP PLAN CROSS-REFERENCE WITH NUREG-0654

| NUREG-0654 Requirement | Description of Requirement | RERP Plan Section |
|-----------------------------------|--|------------------------------|
| O.4.a | Provide training for Emergency Response Organization Director/Coordinators. | O.1 |
| O.4.b | Provide training for accident assessment personnel. | O.1 |
| O.4.c | Provide training for radiological monitoring teams and radiological analysis personnel. | O.1 |
| O.4.d | Provide training for police, security, and fire fighting personnel. | O.2 |
| O.4.e | Provide training for Damage Control and Rescue Teams. | O.1 |
| O.4.f | Provide training for First Aid and rescue personnel. | O.1 |
| O.4.g | Provide training for local support services personnel, including Civil Defense/Emergency Services. | O.2 |
| O.4.h | Provide training for medical support personnel. | O.2 |
| O.4.i | Provide training for headquarters support personnel. | O.1 |
| O.4.j | Provide training for Communicators. | O.1 |
| O.5 | Provide for initial and annual retraining of personnel with emergency response responsibilities. | O.1 |
| P.1 | Provide for the training of those responsible for planning. | P.1 |
| P.2 | Identify the individual, by title, who has overall authority and responsibility for planning. | P.1 |
| P.3 | Designate an Emergency Planning Coordinator with responsibility for development and update of emergency plans. | P.1 |
| P.4 | Annually, or as needed, review and update the RERP Plan and agreements, taking into account changes identified by drills/exercises. | P.3 |
| P.5 | The RERP Plan and approved changes shall be dated and marked to show revisions, and shall be sent to all organizations and individuals with implementation responsibilities. | P.3 |

RERP PLAN CROSS-REFERENCE WITH NUREG-0654

| NUREG-0654 Requirement | Description of Requirement | RERP Plan Section |
|-----------------------------------|--|------------------------------|
| P.6 | The RERP Plan shall contain a detailed list of supporting plans and their sources. | P. 2 Appendix 4 |
| P.7 | The RERP Plan shall contain an appendix listing of implementing procedures. This list shall include the sections of the Plan to be implemented by each procedure. | P. 2 Appendix 3 |
| P.8 | The RERP Plan shall contain a specific Table of Contents. Plans submitted for review should be cross-referenced to these criteria. | P. 2 Table of Contents |
| P.9 | Conduct independent reviews of the Emergency Preparedness program every 12 months. Review shall include the RERP Plan, implementing procedures, training, readiness testing, equipment, and interfaces with State and local governments. Review results shall be formally documented, reported to appropriate organizations, and retained for 5 years. | P.4.1 |
| P.10 | Update emergency telephone numbers in procedures at least quarterly. | N.2.1 |

END