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DTE

January 13, 2020
NRC-20-0005

10 CFR 50.54(q)

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

Fermi 2 Power Plant
NRC Docket No. 50-341
NRC License No. NPF-43

Subject: Submittal of Revision 49 to the Fermi 2 Radiological Emergency Response Preparedness Plan

Pursuant to 10 CFR 50.54(q), DTE Electric Company (DTE) hereby submits Revision 49 to the Radiological Emergency Response Preparedness (RERP) Plan for Fermi 2.

Specific changes to the RERP Plan in Revision 49 are listed in Enclosure 1, Change Analysis Summary. This revision 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.

Enclosure 2 is a copy of Revision 49 to the Fermi 2 RERP Plan. The changes made to the plan are tracked using revision bars.

In accordance with 10 CFR 50.4(b)(5)(ii), Revision 49 is being sent to the NRC Document Control Desk, NRC Region III Office, and the NRC Resident Inspector at Fermi 2.

No new commitments are being made in this submittal.

Should you have any questions or require additional information, please contact me at (734) 586-1769.

Sincerely,

Jason R. Haas
Manager – Nuclear Licensing

Enclosures:

1. RERP Plan Revision 49 Change Analysis Summary
2. RERP Plan Revision 49

cc: NRC Project Manager
NRC Resident Office
Regional Administrator, Region III

Enclosure 1 to
NRC-20-0005

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

RERP Plan Revision 49 Change Analysis Summary

RERP Plan Revision 49 Change Analysis Summary

Listed below is each change by section and page number, the reason for the change, and the basis for concluding that the revised plan continues to satisfy the criteria for the Emergency Plan.

Section / Page	Change	Basis
A.2/A-2 C.1/C-2 I.3.1.1/I-2 O.2/O-2	Changed the title of the Michigan Department of Environmental Quality to the Michigan Department of Environment, Great Lakes, and Energy (EGLE). Title was changed due to State of Michigan Executive Order.	The change made is editorial only. The duties and responsibilities have not changed as described in the Plan. The name change was made as it better describes the department's area of responsibility. Therefore, this change is not a reduction in effectiveness of the RERP Plan.
Figure B-4/B-7	Added the "Laboratory Technician" to the reporting structure of whom may be assigned to perform onsite (or offsite) environmental (or other) sample analysis to the Radiation Protection Advisor in the TSC. This was not specified previously.	As in the Emergency Operations Facility (EOF), the Laboratory Technician may be tasked with counting / analyzing environmental (or other) samples. Results may be requested by the Technical Support Center (TSC). The possible reporting structure is simply illustrated in Figure B-4. This is an editorial change. Therefore, this change is not a reduction in effectiveness of the RERP Plan.
Figure B-5/B-8	Updated (typical) EOF figure to add Assistant Radiation Protection Coordinator.	The change is a correction to the EOF position chart. This position was not included previously but is normally staffed. The position is not part of minimum staffing as required by the RERP Plan nor the staffing analysis. It is a supplemental position that provides additional depth. Therefore, this change is not a reduction in effectiveness of the RERP Plan.

Section / Page	Change	Basis
Figure B-5/B-8	Simplified the "Laboratory Technician EOF Laboratory" title to the more generic "Laboratory Technician" title to account for variety in the person and reporting structure of whom may be assigned to perform offsite (or onsite) environmental (or other) sample analysis.	The change is editorial only. The position is staffed as needed from available Chemistry, Radiation Protection or other qualified staffing. The Laboratory Technician may perform the tasks at another count room or lab location on-site, such as the Availability Improvement Building (AIB) or Radiation Protection (RP) Count Room or Chemistry Lab, not necessarily the EOF Lab. The results would be reported to the requesting facility (i.e., TSC or EOF or both). Capabilities have not been changed nor impacted. Therefore, this change is not a reduction in effectiveness of the RERP Plan.
E.2/E-1, E-2	Editorial changes to rearrange order of information, step order, word simplification.	These changes were editorial in nature to improve clarity and step flow. Editorial changes do not detract from content. Therefore, this change is not a reduction in effectiveness of the RERP Plan.
E.2/E-1, E-2	Revised the description of the content for initial and follow-up messages in section E.2. The State of Michigan has engaged the licensees in Michigan to establish updated notification message content.	As stated on section E.2 of the Plan, "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." This has not changed. This content is reflected in the State's forms EMD-032A and EMD-032B. Fermi 2 has adopted this information into the Plan and implementing procedures and forms. The Plan requirements continue to be met. Therefore, this change is not a reduction in effectiveness of the RERP Plan.

Section / Page	Change	Basis
Appendix 4 / Appendix 4-3 line 28	Updated radiation procedure title and designator for Personnel Contamination Monitoring.	The personnel decontamination process remains the same. This is considered an editorial change. Therefore, this change is not a reduction in effectiveness of the RERP Plan.
Appendix 5 / Appendix 5-2 and 5-3	Aligned position references to the correct reference (to EP-110) as described in Section B.2 of the Plan. The reference in the Appendix did not get changed when Table B-2 was removed and replaced with the procedural reference in Plan revision 47.	Revision 47 of the RERP Plan eliminated Table B-2 and replaced it with a reference to the procedure that defines roles and responsibilities of the ERO, namely EP-110. This change is to correct the reference in Appendix 5 that was not completed in revision 47. This is a correction and the Plan requirements are met. Therefore, this change is not a reduction in effectiveness of the RERP Plan.
Appendix 5 / Appendix 5-3	Updated the Note to refer to the current classification basis and NRC Adams Accession number for Fermi 2. This was not updated during revision 41 of EP-101 in 2016.	There is no impact to classification. The note is information only to communicate the classification basis currently approved at Fermi 2. The update reflects the NRC approval information. Therefore, this change is not a reduction in effectiveness of the RERP Plan.

Enclosure 2 to
NRC-20-0005

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

RERP Plan Revision 49

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
LNO	-	Licensed Nuclear Operator
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
NOC	-	Nuclear Operations Center
NRF	-	National Response Framework
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
PAR	-	Protective Action Recommendation
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
SEOC	-	State Emergency Operations Center
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
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.

Additionally, the definition of the following terms are prescribed and apply, unless otherwise noted, throughout the document.

1. Annual - once during a calendar year.
2. Quarterly - once during a calendar quarter

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, DTE Energy'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 Monroe and Wayne County dispatch, 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 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 (SEOC) in Lansing is activated for coordination of state emergency activities. The SEOC 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/day operation for a protracted period of time during an emergency situation at Fermi 2.

The Michigan State Police and the Michigan Department of Environment, Great Lakes, and Energy (EGLE) are the primary state response agencies during a radiological emergency. The Michigan 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 SEOC

- 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 Michigan Department of Environment, Great Lakes, and Energy 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 dispatch initiates notification procedures in Monroe County.

When notified of an emergency at Fermi 2, Wayne County Dispatch 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 SEOC in Lansing is activated, at which time all communications with the counties are channeled through the SEOC.

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, 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 SEOC. 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 NRF.

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 ProMedica Monroe Regional Hospital (Monroe) or Beaumont Hospital – 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 ProMedica Monroe Regional Hospital or Beaumont Hospital – Trenton 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:

- GE-Hitachi Nuclear Energy Americas LLC
- 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

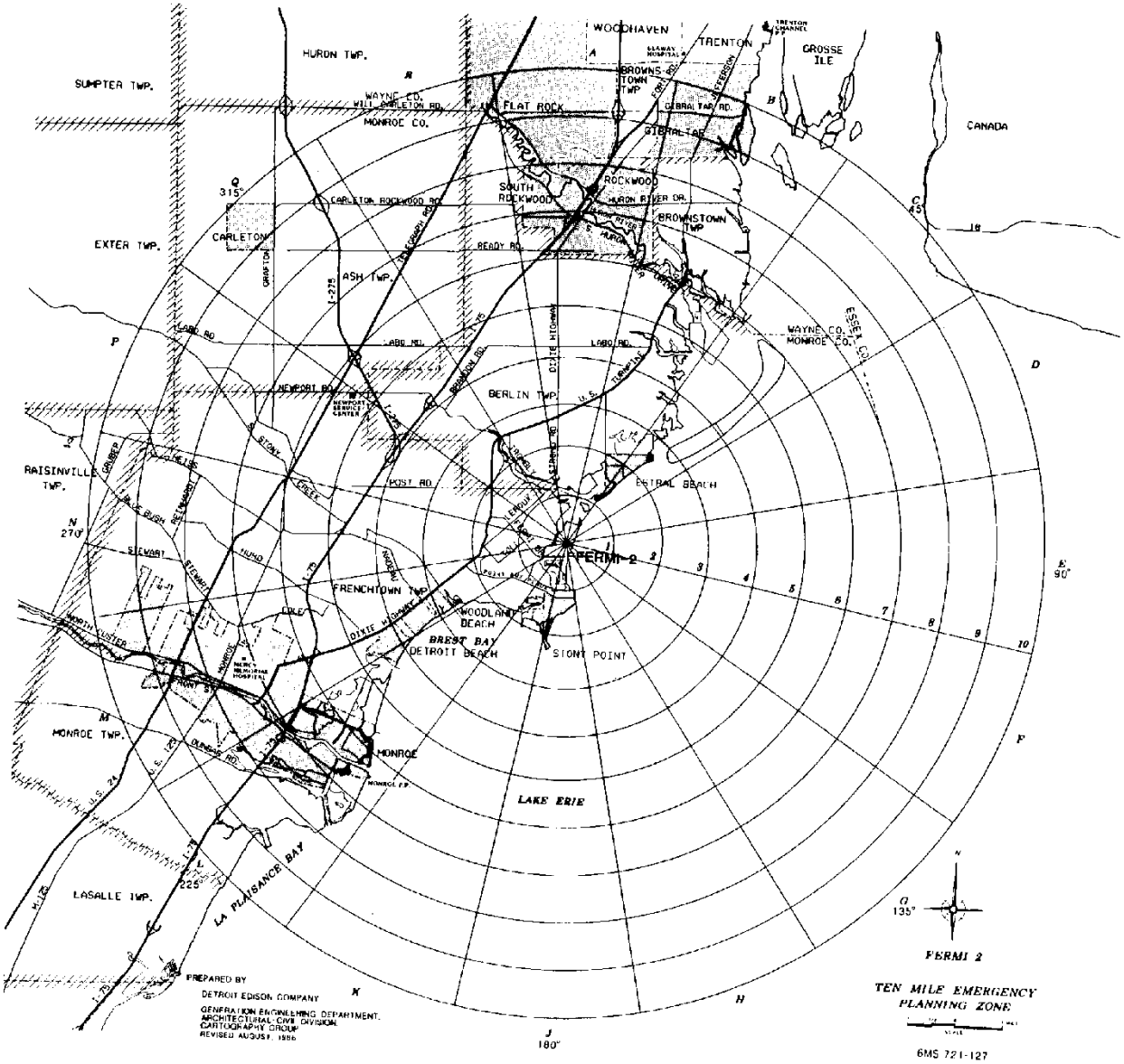


Figure A-2

FERMI 2 50-MILE EMERGENCY PLANNING ZONE

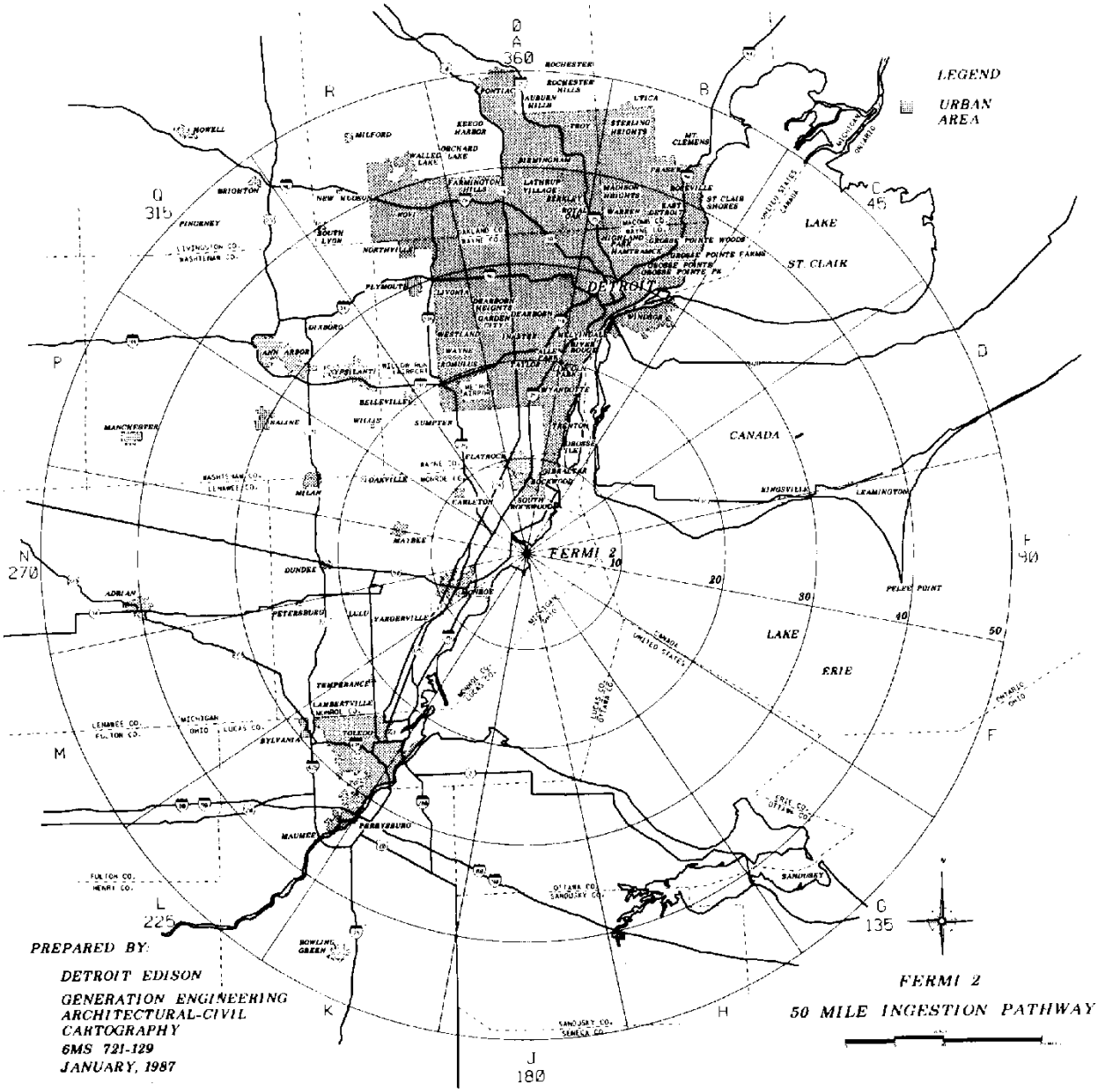


Figure A-3

STATE OF MICHIGAN AGENCY ASSIGNMENT AND FUNCTION CHART

AGENCY ASSIGNMENT / DISASTER FUNCTION	AGRICULTURE	LABOR & ECON. GROWTH	CORRECTIONS	EDUCATION	EXECUTIVE (GOV)	ENVIRO QUALITY	MILITARY AFF	NATURAL RES	COMM HEALTH	FAMILY IND AGY	STATE POLICE	TRANSPORTATION
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/COMMUNICATIONS	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

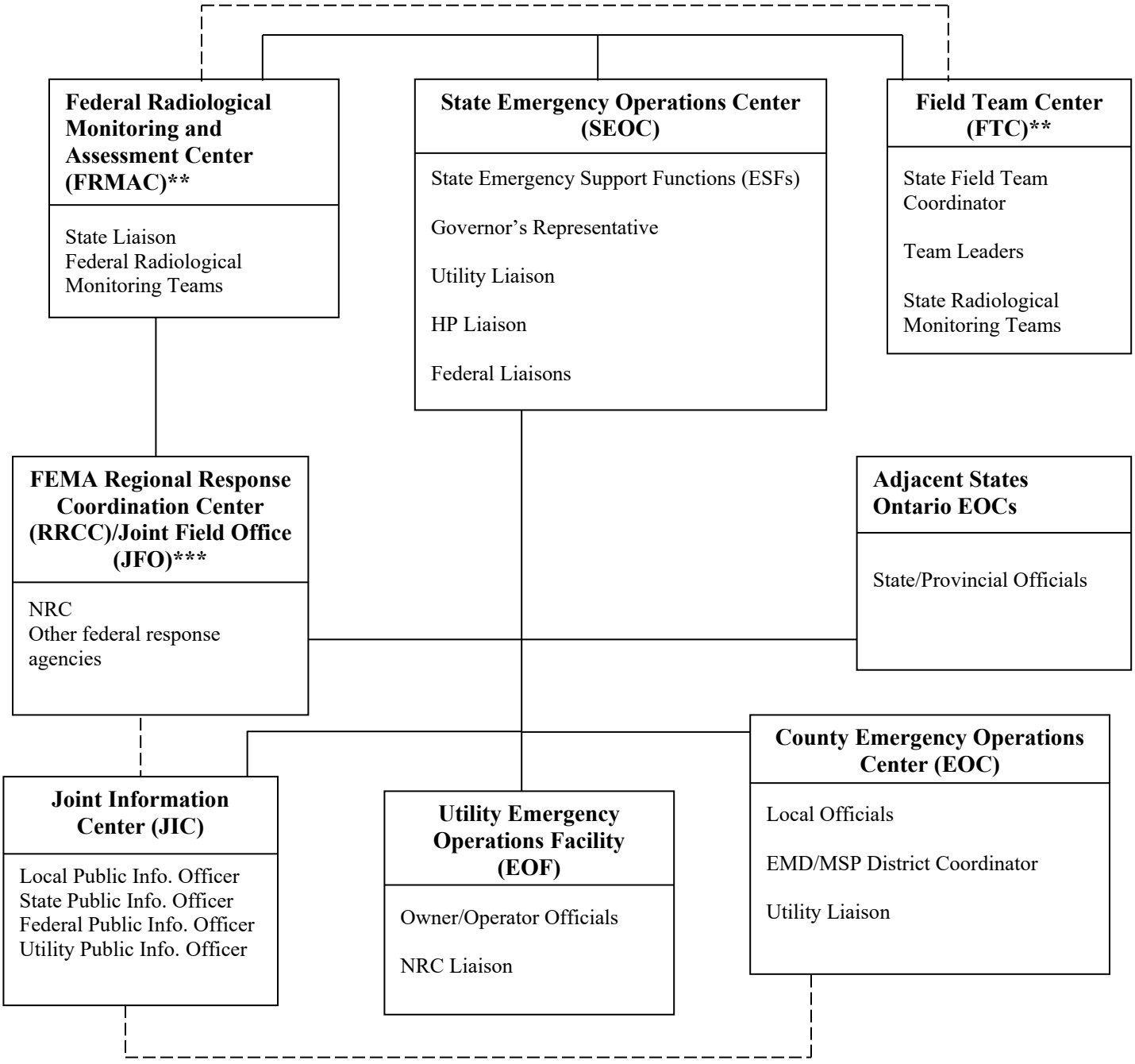
Figure A – 5

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 typical 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 described in RERP Implementing Procedure EP-110, Organization and Responsibilities.

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 Director, Nuclear Production/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 10CFR20 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 are assigned according to the needs of each ERF. The assignments are approved by the Manager, RERP.

B.3 Emergency Response Organization Interfaces

The onsite ERFs are discussed in Section H. The offsite centers are, at a minimum, Western Wayne Service 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	Licensed Nuclear 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	
		EOF	Radiation Protection Coordinator			1
	Offsite Surveys	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	
	Chemistry/Radiochemistry	OSC	Chemistry Technician	1		
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.**

Figure B-1
NUCLEAR GENERATION ORGANIZATION

See UFSAR Figure 13.1-2

Figure B-2

CONTROL ROOM (typical)

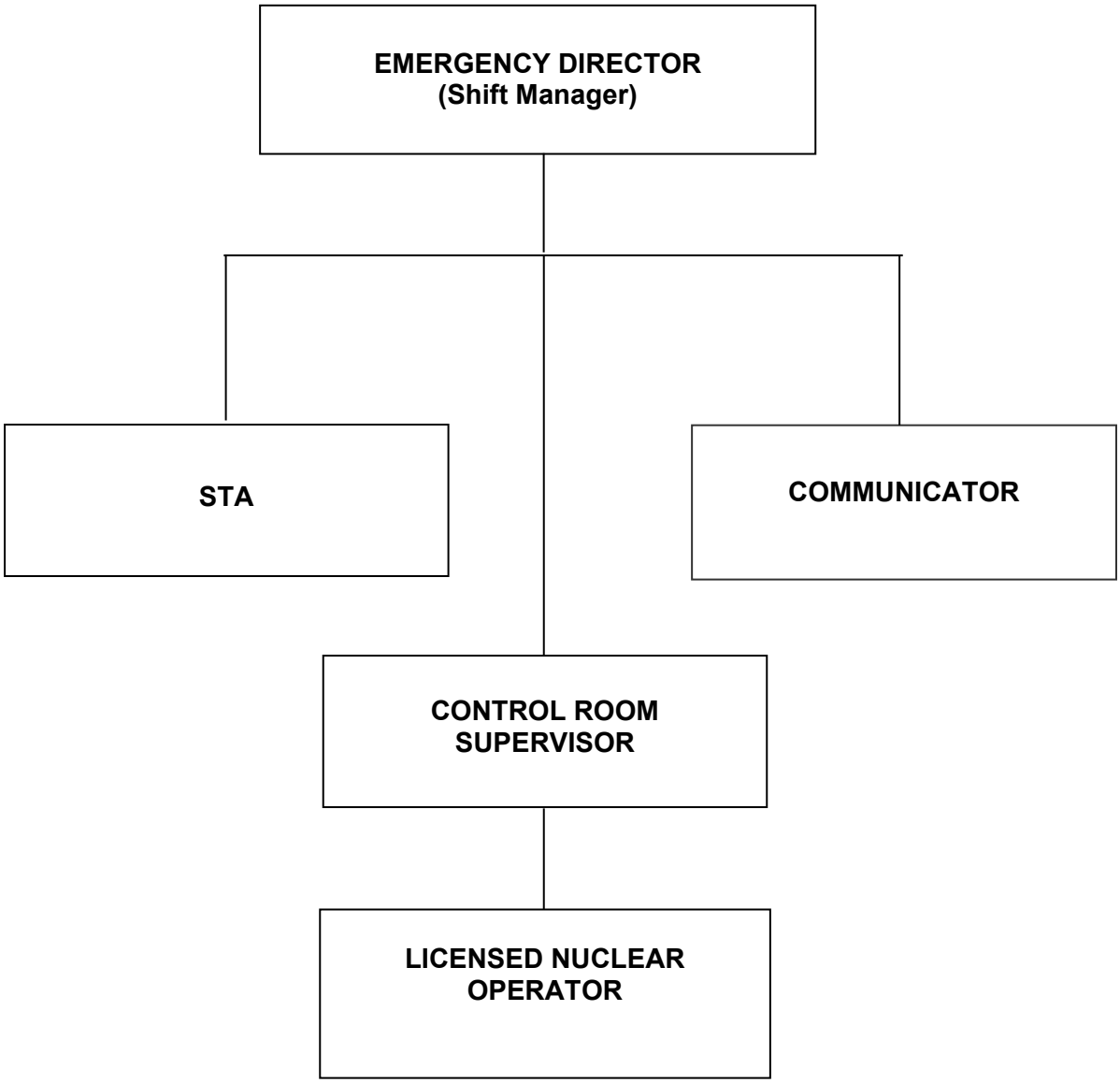
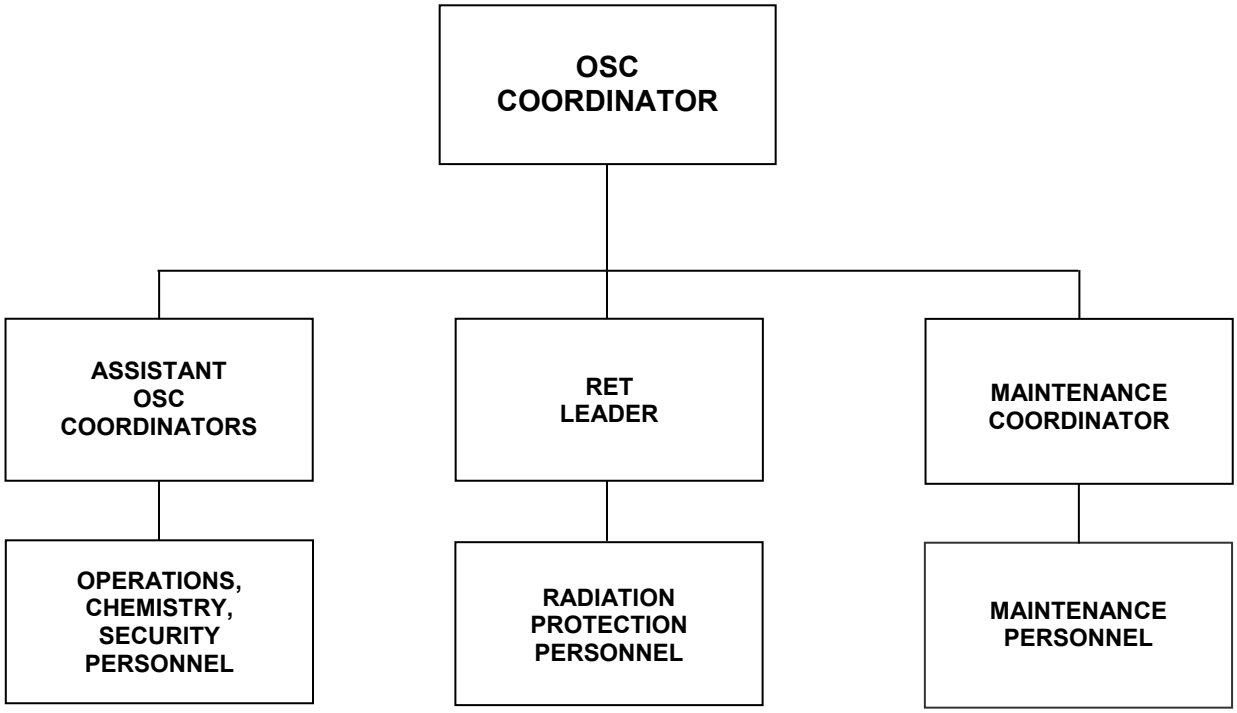


Figure B-3

OPERATIONAL SUPPORT CENTER (typical)



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

Figure B-4

TECHNICAL SUPPORT CENTER (typical)

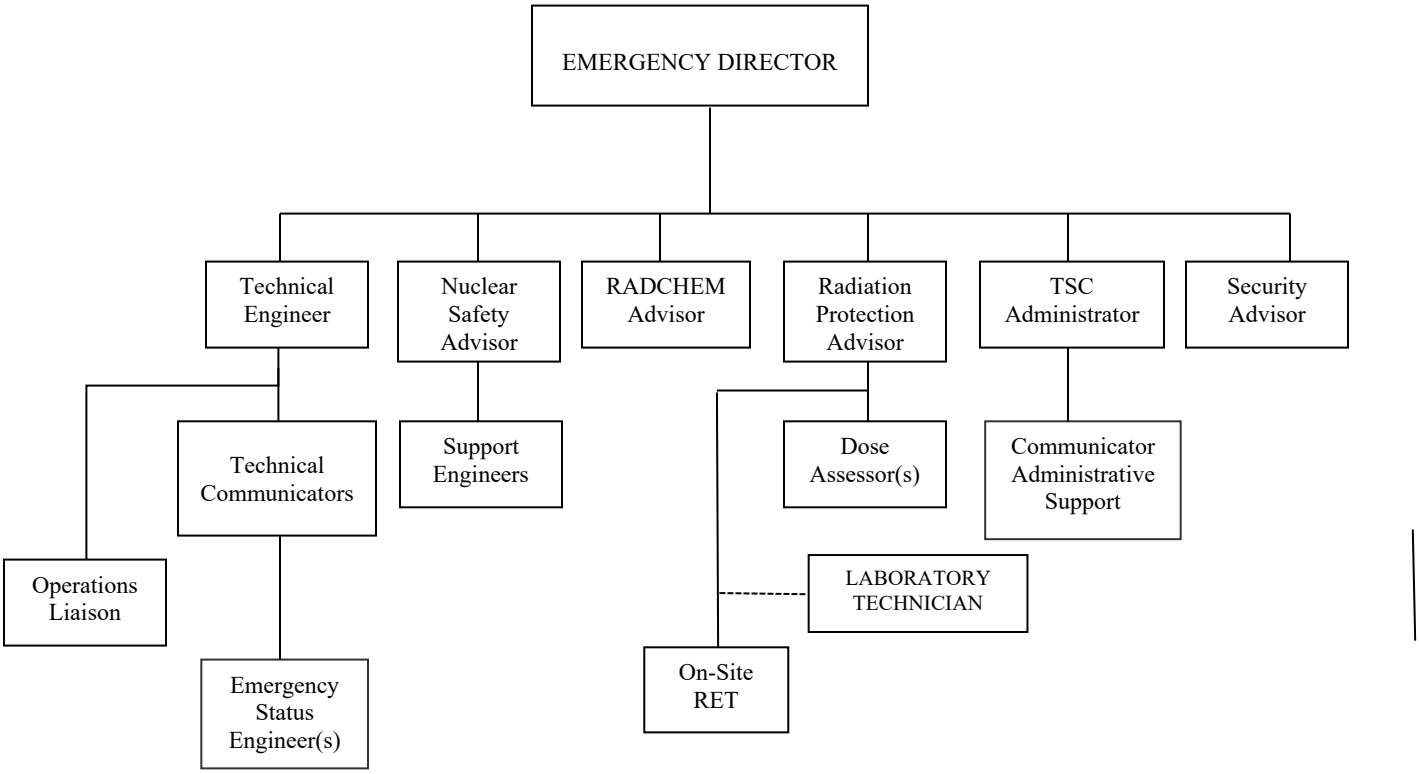
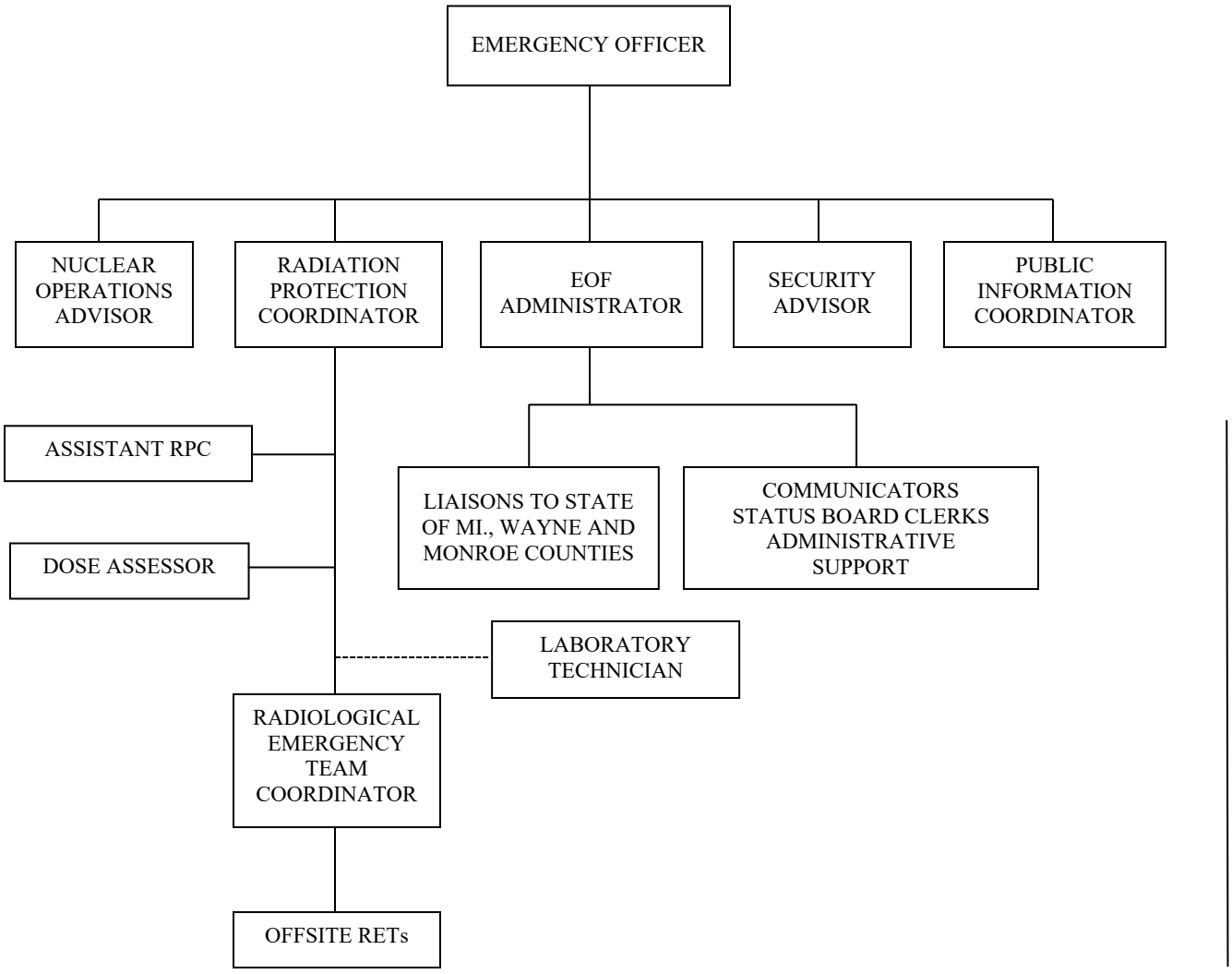


Figure B-5
EMERGENCY OPERATIONS FACILITY (typical)



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 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		
Carls	6	NNW
Custer	10	W
Grosse Ile	11	NNE

State and local command centers that may be available to support federal response include the SEOC located at the Michigan State Police Emergency Management and Homeland Security Division, in Lansing, Michigan, and the alternate SEOC located at the State Police Second District Headquarters, Northville, Michigan. The State Emergency Operations Centers (SEOCs) 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 Monroe County Emergency Management Division, and the Wayne County EOC is located at the Wayne County Emergency Management Division.

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 Michigan State Police in the EOF; the counties may dispatch liaisons as they deem necessary. In addition, the Michigan Department of Environment, Great Lakes, and Energy 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.

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 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.

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. A complete list of the organizations with letters of agreement is located in Appendix 1.

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 HiCom 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):

Location of incident and telephone number (or communications channel identification) of communcating emergency response facility

Emergency classification, to include the date and time of declaration

Reason for Classification (applicable EAL)

Status of radioactive release

Protective action recommendations

Meteorological conditions including wind speed, wind direction from, stability class, and precipitation

Plant Status, including additional information such as:

- status of emergency response actions,
- requests made for onsite support from offsite organizations,
- prognosis for escalation or termination of event based on plant information.

Release/Off-site Dose Data to include:

- Calculated release rate information of released radioactive materials in terms of their relative quantities and concentration of noble gases, iodines, and particulates, as applicable
- Projected dose at 2, 5, and 10 miles downwind including sector(s) affected including basis (i.e. monitor, sample, back calculation of field data, etc)
- Release pathway information including effluent release point, projected release duration, and type of release (airborne or waterborne).

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.

County officials have an additional method of notifying the public of an emergency at Fermi 2. This notification system sends recorded messages, texts, and/or e-mail messages directly to residents concerning weather, fire or police events, and emergencies at Fermi 2.

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. **2950 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**, Gibralter 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

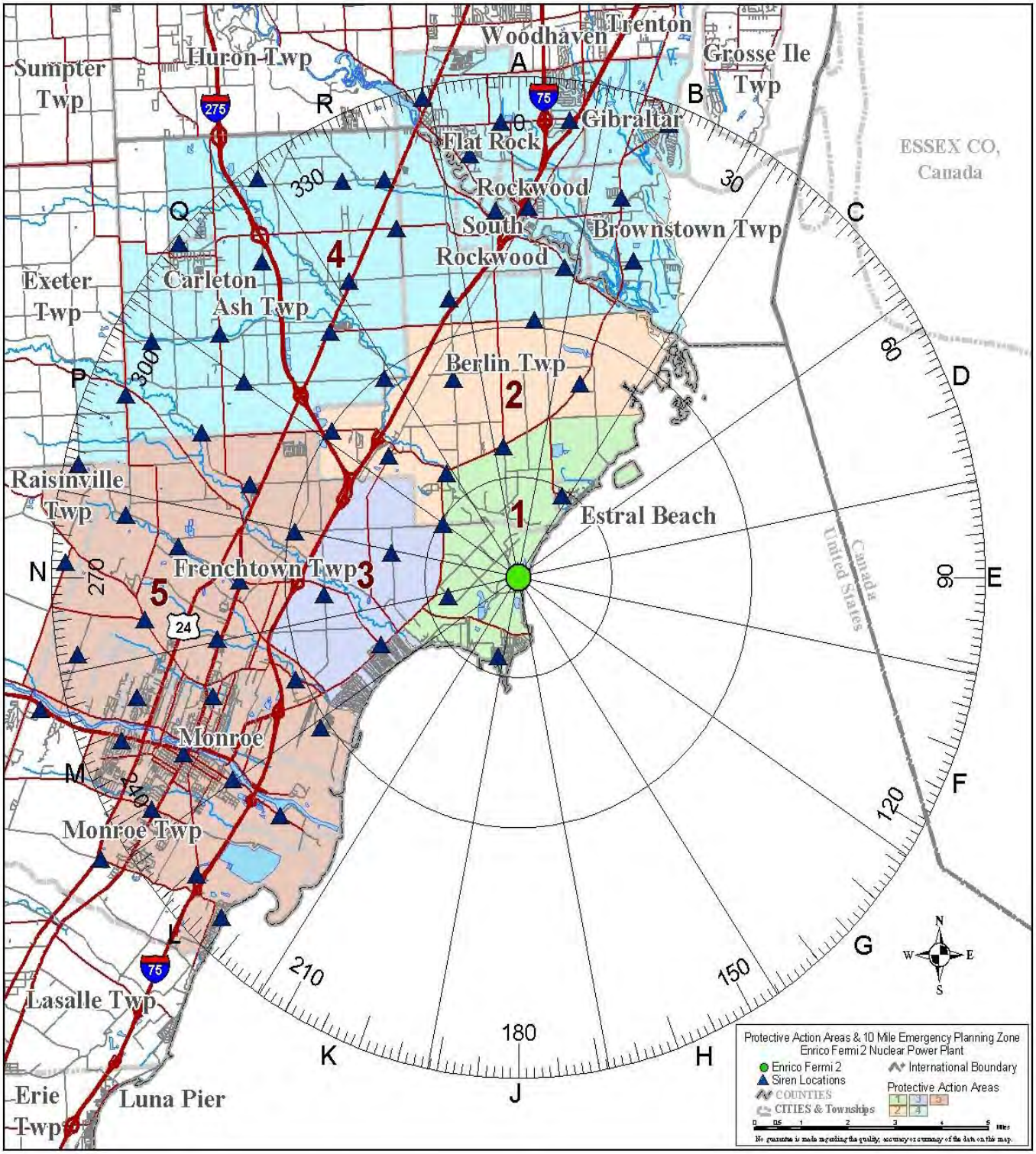
30. **28101 Arsenal Road**, north of Huron River Drive
31. **24680 Woodruff,** Woodruff and Alders in Elementary School yard
60. **28951 Hall Road**, 100' north of Gibralter Road.

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 DTE Energy-owned Private Branch Exchange (PBX) telephone system (Avaya G3S/I). An DTE Energy-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 –** A DTE Energy-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-premesis 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 inside panel H11-P700 to establish communication using Plant Radio for Control Room/Operation Group (Zone 1) to hand-held portable radios via the plant's radio repeaters system. This radio base station provides for control room panel microphone and ceiling speaker operation.

An additional radio console is located inside panel H11-P703 to allow for backup Control Room communication to hand-held portable radios on various other user group (Zone 1, 2, or 3) channels via the Plant Radio repeaters system. This console provides radio communication selection into Maintenance Channels (Zone 2, named MAINTENENCE), Security Maintenance (Zone 3, named MODS), and Fire Protection (Zone 1, named OPS) via the plant's radio repeaters system.

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 (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 Plant's Radio repeaters system or via direct hand held channels DIR1 and DIR2 (on Zone1, 2, and 3).
Back Up console located inside panel H11-P703 can be used in the event when there is a loss of the main radio console located inside panel H11-P700, and during partial loss of the Plant's Radio repeaters system.

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 Service 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 2nd floor Radwaste Mezzanine 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.

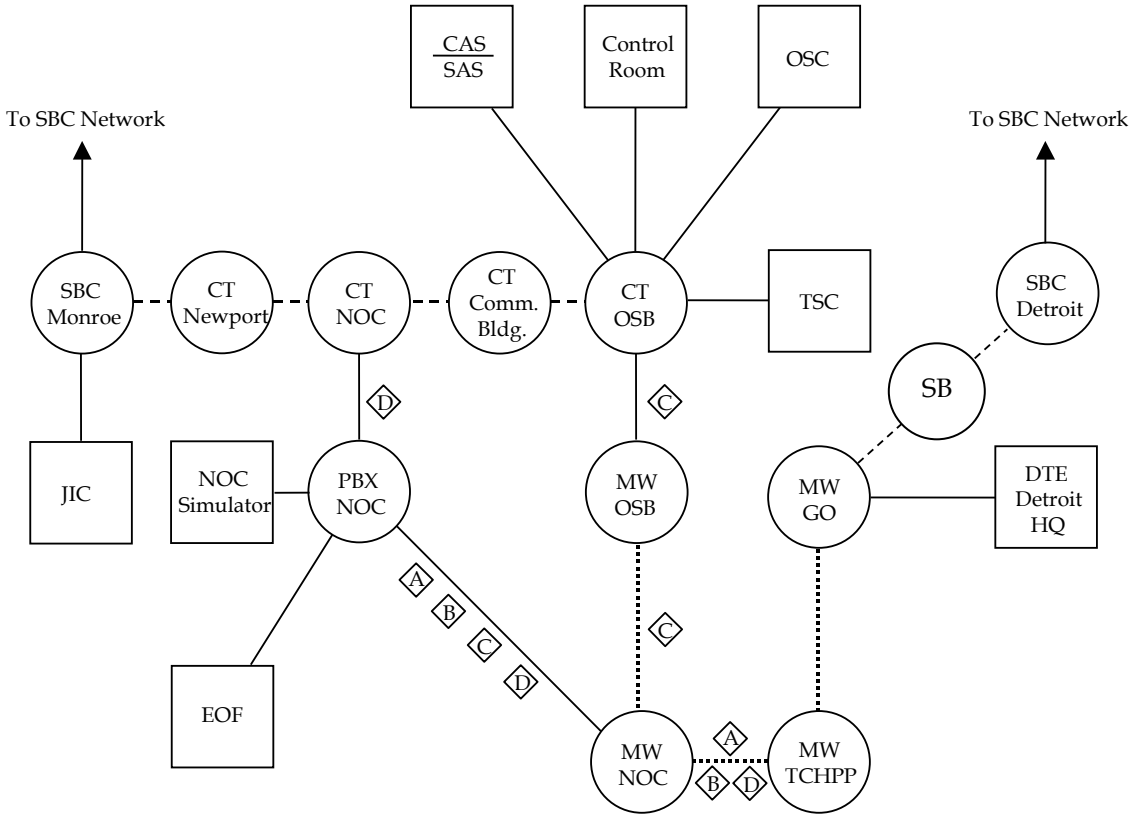
F.5 Plant Intercom System

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



Microwave
Fiber Optics
Cable

A Direct Inward Dialing Channels

B Detroit Central Office Channels

C Emergency Facilities Channels

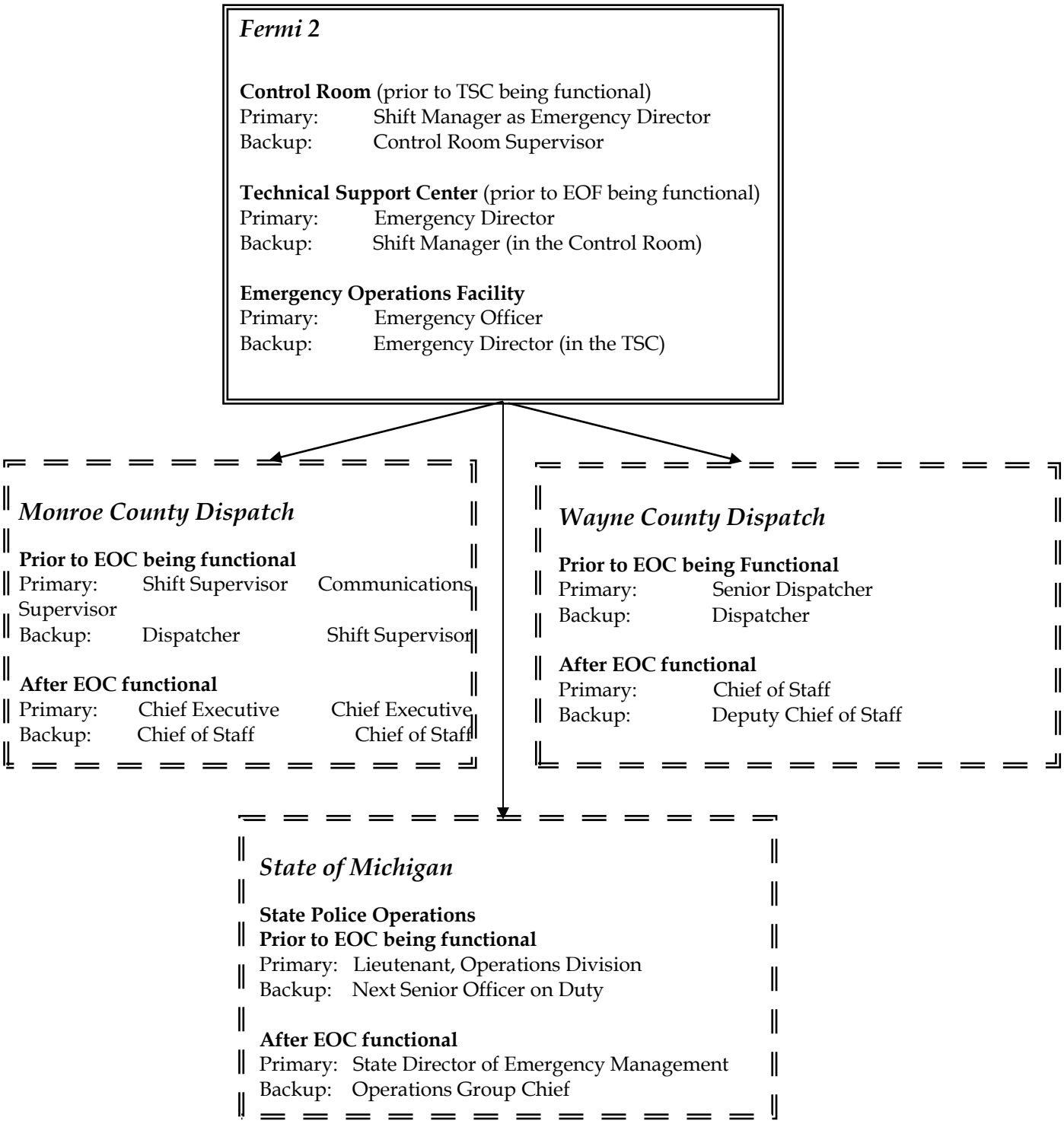
D Network Tie Lines

Emergency Response Facilities are equipped with Direct Ring Local Central Office and Off-Premise Extensions (PBX - NOC)

CT	Century Telephone
PBX	Private Branch Exchange
SBC	Southern Bell Communications/AT&T
TCHPP	Trenton Channel Power Plant

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 with 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 employes, 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 DTE Energy 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 and 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 and 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 function of the OSC is to provide an onsite area(s) where designated support personnel will assemble in an emergency. It provides an area for the coordination of shift personnel to support emergency response operations without causing congestion in the Control Room. The OSC is located within the TSC envelope and is staffed by the OSC command and control staff. Additional areas adjacent or remote to this location can be used for support, briefings, and personnel musters. These areas include:

- Assembly point adjacent to the Main Control Room
- Work areas immediately adjacent to the TSC/OSC
- The machine shop in the Office Services Building
- Other areas may be used at the direction of the Emergency Director

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 Organizations)

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 DTE Energy.

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 (SEOC), 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 Service 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 describes 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 Energy 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 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 H-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 available to the Control Room, OSC, TSC, EOF personnel (i.e. all emergency facilities). IPCS is also available at 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

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

Inplant Chemistry Capabilities

- Gamma emitting isotopic analyses
- Low energy Beta (H-3) emitting isotopic identification
- H_2 and O_2 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
- H_2 and O_2 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 10CFR20 and 10CFR50, 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 Michigan Department of Environment, Great Lakes, and Energy 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 three concurrent release pathways during each calculational step. A fourth 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)
- SFP_CG (Spent Fuel Pool; fission products in the Reactor Building; pathway via SGTS) – An underwater mechanical damage / failure of two assemblies.
- SFP_OH (Spent Fuel Pool; fission products in the Reactor Building; pathway via SGTS) – For fuel that is overheated but not yet on fire (partially covered – hot gap) which is assumed to be recent one-third of a core.
- SFP_Zr (Spent Fuel Pool; fission products in the Reactor Building; pathway via SGTS) – For a Zr fire, which is assumed to involve the entire fraction of the core most recently offloaded core (based on typical one-third offload).
- SFP_DC (Dry Cask Spent Fuel; fission products directly to the environment; unmonitored) – Fuel damage in a dry cask (68 assemblies in a cask).

For each available accident type, the program maintains an initial isotopic inventory. Initial inventories for each accident type, except FHA, SFPs, and Dry Cask Accident (DCA), are designated by three source types (Coolant, Gap, or Core). A specific inventory is used for the FHA, SFPs, and DCA. 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) (DTE Energy'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.

A range of protective actions including sheltering, evacuation and prophylactic use of iodine have been developed for the plume exposure pathway Emergency Planning Zone (EPZ) emergency workers and the general public. Guidelines for the choice of protective actions during an emergency, consistent with Federal guidelines, are developed and in place, and protective actions for the Ingestion Exposure Pathway EPZ appropriate to the locale have been developed.

The approved Protective Action Recommendation (PAR) emergency plan implementing procedure constitutes the licensee's commitment to Off-site Response Organizations (ORO) to provide PARs immediately upon the declaration of a General Emergency in a manner mutually agreed upon. Efforts to achieve licensee and ORO agreement on protective action strategy decision criteria should be documented in a manner that makes the information available for review by the NRC and FEMA. At Fermi 2, this agreement is documented in NARP 14-0229. title "Michigan Licensees Documentation of PAR Strategy Development/Evaluation".

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	*Early (b)*	Sheltering Evacuation Control of access
2. External radiation from plume	*Early (b)*	Sheltering Evacuation Control of access
3. Inhalation of activity in plume	*Early (b)*	Sheltering Administration of stable iodine Evacuation Control of access
4. Contamination of skin and clothes	*Early (b)*	Sheltering Evacuation Decontamination of persons
5. External radiation from ground deposition of activity	*Intermediate (c)*	Evacuation Relocation Decontamination of land and property
6. Ingestion of contaminated food and water	*Late (d)*	Food and water controls (e)
7. Inhalation of resuspended activity	*Late (d)*	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)

Structure or Location	*Representative Shielding Factor (b)*	*Representative Range*
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

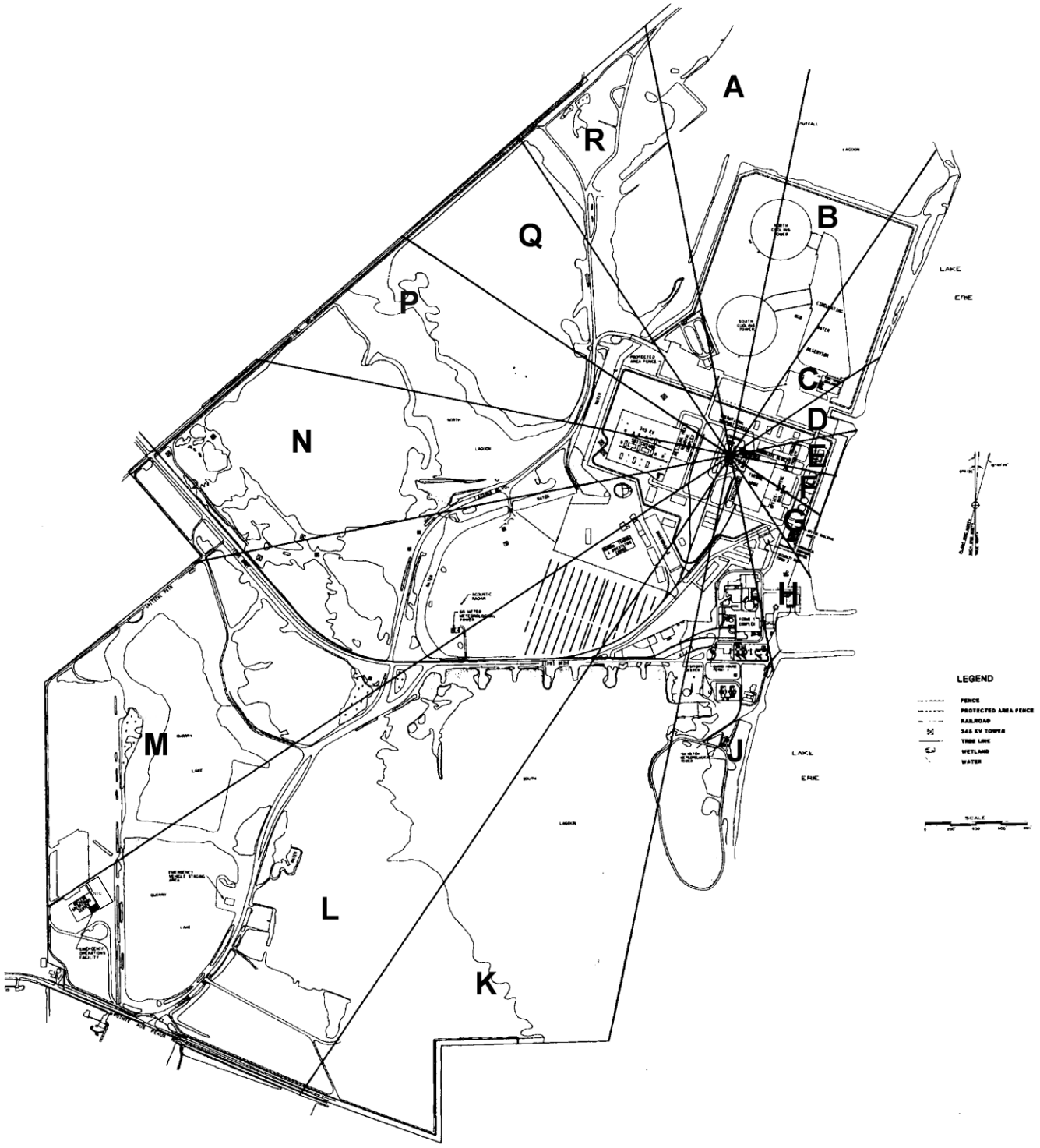
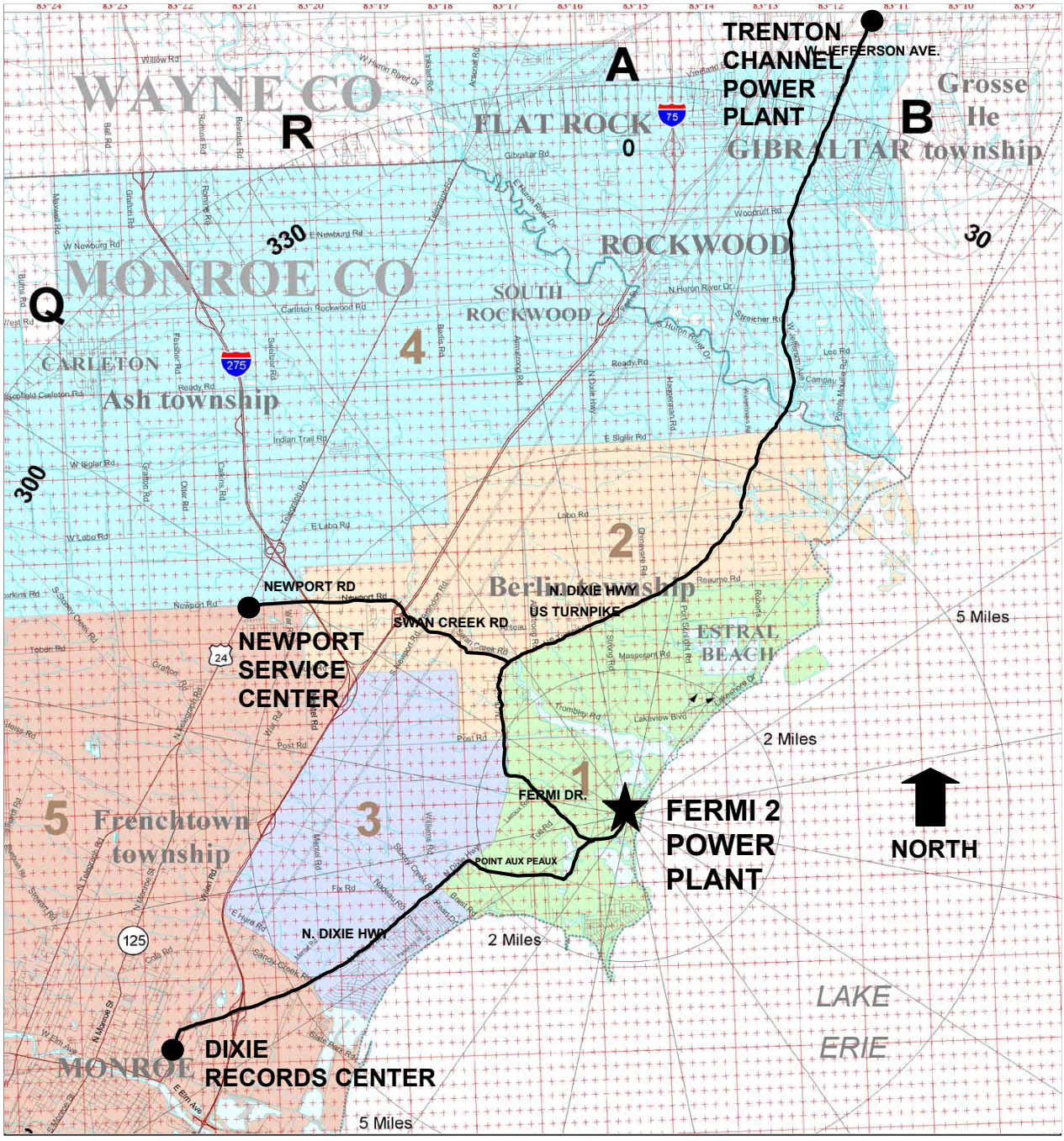


Figure J-2
EVACUATION ROUTES AND ASSEMBLY AREAS



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 10CFR20.

The Emergency Director will evaluate any emergency response exposures in excess of 10CFR20 limits. The Emergency Director is responsible for authorizing emergency personnel to exceed the 10CFR20 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 ProMedica Monroe Regional Hospital or Beaumont Hospital – Trenton 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)

Dose limit (rem) (b)	*Activity*	*Condition*
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 ProMedica Monroe Regional Hospital in Monroe, Michigan. A back-up medical facility is established at Beaumont Hospital – Trenton in Trenton, Michigan, located approximately 12 miles from the plant.

ProMedica Monroe Regional Hospital and Beaumont Hospital – Trenton 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
- Training of plant, ambulance, and hospital personnel who have responsibilities regarding radiological medical emergencies at least once per calendar year
- An emergency medical drill providing immediate evaluation and critique of the results at least once per calendar year
- 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).

Authorization and implementation of the recovery operations are the responsibility of senior Emergency Response Organization team members, (i.e., Emergency Director and/or Emergency Officer).

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

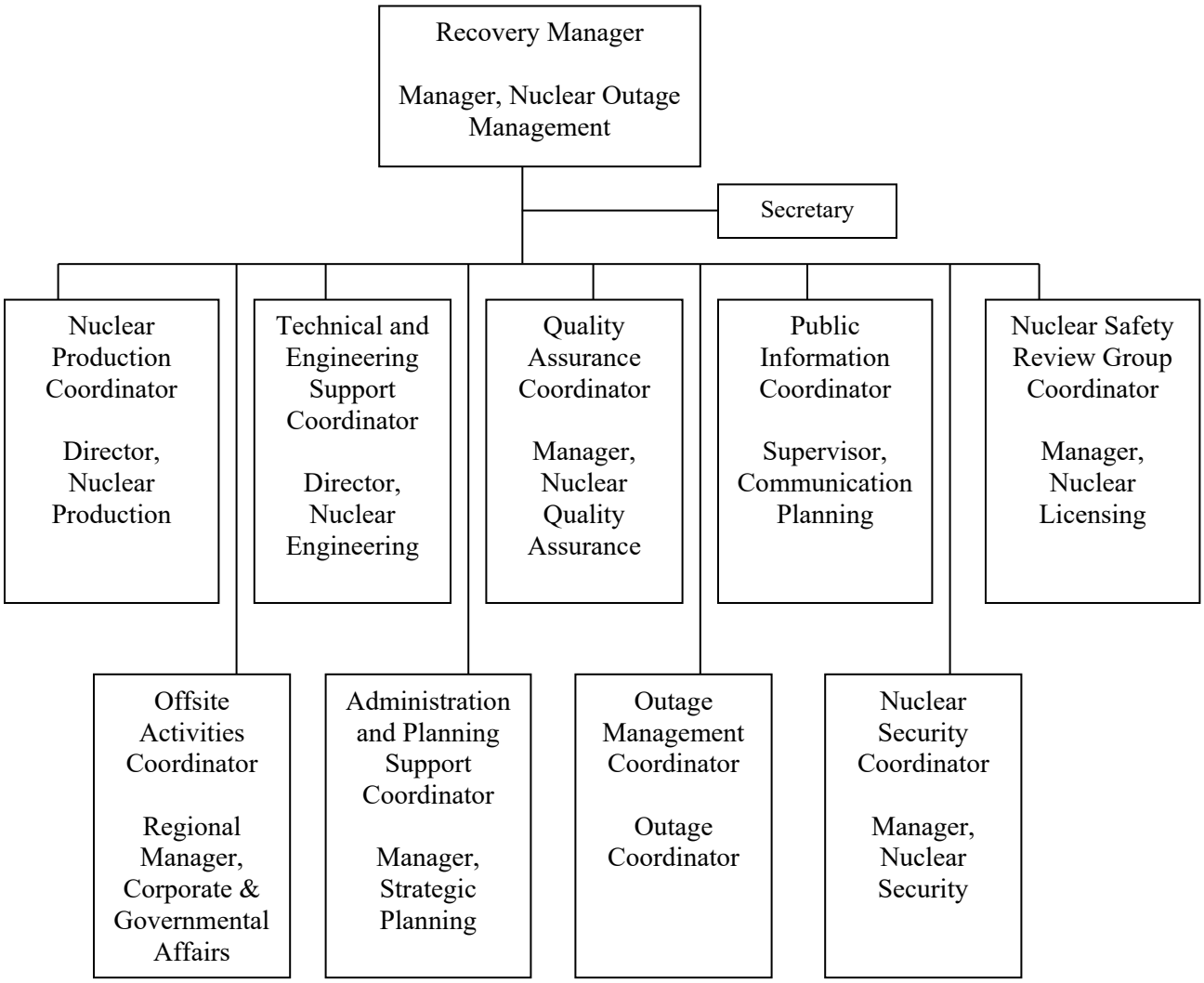
Dose Assessment personnel in the EOF will continue to cooperate with state and federal agencies and periodically update total population exposure estimates. In the event a release of radioactive material is planned, the anticipated offsite dose will be calculated, including an estimate of the total population 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 10CFR50, Appendix E, Section F. State and local agencies will participate at the frequency specified by 44CFR350, 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, Monroe County dispatch and Wayne County dispatch, 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, Beaumont Hospital – Trenton or ProMedica Monroe Regional 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 10CFR50 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, 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, ProMedica Monroe Regional Hospital and Beaumont Hospital – Trenton. 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 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 Environment, Great Lakes, and Energy
- 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 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

GE Hitachi Nuclear Energy Americas LLC

Institute of Nuclear Power Operations (INPO) Emergency Response Assistance Agreement

ProMedica Monroe Regional Hospital

Monroe County Community College

Mutual Assistance Agreement between:

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

Beaumont Hospital – Trenton

DTE Electric – Dixie Records Center

DTE Electric – Newport Service Center

DTE Electric – Western Wayne Service Center

DTE Electric – Trenton Channel Power Plant

Monroe County Emergency Management Division

Monroe County Sheriff Department

National Oceanic and Atmospheric Administrations's National Weather Service

Southeastern Michigan EAS Plan

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
294	Incident Command Post (ICP) Liaison Response to Hostile Action Based (HAB) Events	H
301-01	Technical Support Center	B,F,H,I,J,K,M
302-01	Operational Support Center	B,F,H
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RERP IMPLEMENTING PROCEDURES

INDEX (Continued)

EP NO.	TITLE	RERP PLAN SECTION IMPLEMENTED
305-01	Unified Incident Command Post	A,C
306-01	Alternate/Alternative Emergency Failities	H
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 Release	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 (EITER)	F,H
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

END

APPENDIX 4

LIST OF SUPPORTING PROCEDURES AND DOCUMENTS IDENTIFIED IN THE PLAN

SUPPORTING PROCEDURES AND DOCUMENTS IDENTIFIED IN PLAN

INDEX

SUPPORTING PROCEDURES AND
DOCUMENTS IDENTIFIED IN PLAN

INDEX (continued)

21 Institute of Nuclear Power Operations (INPO) Emergency Resources Assistance Agreement (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. Fermi 2 Nuclear Power Plant Development of Evacuation Time Estimates. KLD Associates,Inc. (Section J)

27. MRP09, Respiratory Protection (Section K)

28. Radiation Protection Procedure 68.000.006, Personnel Contamination Monitoring (NISP-RP-06) (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)

32. Alert and Notification System (ANS) Design Report (Section E)

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.	EP-110

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.	EP-110
B.7.b	Identify the individual responsible for technical support for planning and reentry/recovery operations.	M.2
B.7.c	Identify management interface with government authorities.	EP-110
B.7.d	Identify the individual responsible for information release to the media.	EP-110
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 NEI-99-01. See ADAMS Accession #ML15233A084 for approval details including Safety Evaluation.

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. **Note: release height is modeled as "ground level" as described in Plan Section I.**	E.2 I.3.1.1
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 1E-7$\mu Ci/cc$ 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.2
P.6	The RERP Plan shall contain a detailed list of supporting plans and their sources.	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