

**Detroit  
Edison**

2000 Second Avenue  
Detroit, Michigan 48226  
(313) 237-8000

August 31, 1981  
EF2 - 54,538

Mr. L. L. Kintner  
Division of Project Management  
Office of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555



Dear Mr. Kintner:

References: NRC Review Comments on Fermi 2 Emergency  
Plan, March 1981, dated July 6, 1981

Subject: Enrico Fermi Atomic Power Plant, Unit 2  
NRC Docket No. 50-341  
Radiological Emergency Response Plan

Enclosed are the responses to the set of comments  
referenced above and a description of the meteorological  
instrumentation.

Detroit Edison presently has a consultant preparing RERP  
procedures, developing the scenario for the full-scale  
exercise in February, and developing and conducting the  
training program. During this process, various areas in  
the RERP are being identified as requiring major revi-  
sions. The program is not sufficiently developed at  
this time to provide adequate responses to the comments  
or revised pages in the plan. In many cases the detail  
requested to be placed in the RERP is logically and fun-  
damentally a part of the procedures.

B027  
~~1/40~~  
5  
1/40

Mr. L. L. Kintner  
August 31, 1981  
EF2 - 54,538  
Page 2

Our present schedule indicates that a revised RERP will be available December 15, 1981. This is consistent with the procedures being developed and the completion of the local jurisdictions' plans within the 10-mile EPZ.

Sincerely,



W. F. Colbert  
Technical Director  
Fermi 2 Project

WFC:jl  
Enclosure

cc: Mr. B. Little  
Mr. P. Psomas

Mr. L. L. Kintner  
August 31, 1981  
EF2 - 54,538  
Page 3

bcc: (w/o attachments)

T. A. Alessi  
E. L. Alexanderson  
H. O. Arora  
W. J. Fahrner  
F. E. Gregor  
E. P. Griffing  
A. Heidrich  
W. R. Holland  
J. W. Honkala  
W. H. Jens  
R. S. Lenart  
E. Lusi  
J. W. Nunley  
H. Tauber  
R. A. Vance  
H. A. Walker  
A. E. Wegele

C. M. Johnson (GE-San Jose)

bcc: (w/attachments)

E. F. Madsen  
P. A. Marquardt (3)  
L. E. Schuerman  
J. M. Wisniewski

Document Control  
File (RERP)

J. E. Slider (NUS-Rockville)

NRC REVIEW COMMENTS  
FERMI 2 RADIOLOGICAL EMERGENCY RESPONSE PLAN

- A. ASSIGNMENT OF RESPONSIBILITY (ORGANIZATIONAL CONTROL)
- A.1.C Provide a block diagram illustrating the interrelationships of State, local, Federal and private sector organizations with the Fermi Nuclear Power Facility.
  - A.1.d. Identify a specific individual by title that is in charge of the emergency response for each organization.
  - A.1.e. Describe the provisions for 24 hour per day emergency response manning of communications for offsite organizations.
  - A.3 Provide written letters of agreement for each offsite support organization. These letters of agreement should include concepts of operation, specific support commitments, authorities, responsibilities, and limits on actions of each, contractor, private organization, and local service support group.
  - A.4 Provide evidence that each principal organization is capable of continuous (24-hour) operation for a protracted period.



NRC REVIEW COMMENTS  
FERMI 2 RADIOLOGICAL EMERGENCY RESPONSE PLAN

RESPONSE

A. ASSIGNMENT OF RESPONSIBILITY (ORGANIZATIONAL CONTROL)

Items A.1.c., A.1.d., A.1.e., A.4

The planning efforts of State and local jurisdictions is not complete at this time. The Emergency Services Division of the Michigan State Police is responsible under Michigan Public Act 390 (1976) for emergency planning at the State and local level.

It is anticipated that the final draft of the plans for Monroe County and the jurisdictions in Wayne County within the 10-mile EPZ will be completed in November 1981. At that time Section A to the Fermi 2 Radiological Emergency Response Plan (RERP) will be completed.

Item A.3

The letters of agreement with the support organizations are being established. When the Fermi 2 RERP is revised, those available at that time will be included.

NRC REVIEW COMMENTS  
FERMI 2 RADIOLOGICAL EMERGENCY RESPONSE PLAN

B. ONSITE EMERGENCY ORGANIZATION

- B.2 Verify that the Emergency Coordinator has the authority to unilaterally initiate any emergency actions.
- B.3 Describe the line of succession and identify the specific conditions for higher level officials assuming the function of Emergency Coordinator.
- B.4 Clearly define the responsibilities of the Emergency Coordinator that may not be delegated, i.e., the decision to notify and to recommend protective actions to authorities responsible for offsite emergency measures.
- B.5 Specify how minimum staffing requirements, as per Table B-1 of the criteria, will be established. A total augmentation plan should also be established showing the 30 and 60 minute augmentation schedule. Augmentation plans should also address provisions for inclement weather.
- B.6 Specify the interfaces between onsite functional areas of emergency activity, licensee headquarters, support, local services support, and State and local government response organization. Clearly illustrate these interfaces with a block diagram.
- B.7 Identify the corporate management and administrative and technical support personnel that will augment the plant staff.
- B.9 Identify the services to be provided by local agencies. Submit copies of the arrangements and agreements reached. These agreements should delineate the authorities, responsibilities and limits on the actions of the contractor, private organization and local services support groups.

NRC REVIEW COMMENTS  
FERMI 2 RADIOLOGICAL EMERGENCY RESPONSE PLAN

RESPONSE

B. Onsite Emergency Organization

Item B.2

The authority of the Emergency Director will be delineated in the revised Fermi 2 RERP.

Item B.3

At the present time there are no plans for company personnel in a position above that of Plant Superintendent to assume the position of Emergency Director. The individuals listed in Table B.2 of the RERP define the levels of succession.

Item B.4

As the Fermi 2 RERP is revised, the authorities of the Emergency Director that may not be delegated will be clearly defined.

Item B.5

Augmentation of personnel will be based on the classification of the emergency and the activation of the various Emergency Response Facilities (ERF) as determined at the time of the emergency.

Item B.5

Emergency personnel required for the ERF's will be put on alert should the emergency progress. A survey of the personnel presently involved in the emergency organization indicates that an augmentation schedule of 90 to 120 minutes is practical (under normal conditions) once the decision has been made to activate a specific ERF.

Many of the initiating conditions for an unusual event do not warrant augmentation by function according to Table B-1. It is Edison's intention to augment based on the need at the time of the emergency.

Item B.6

When completed, Section A will adequately respond to this item without the necessity of repetitive information.

Item B.7

Support personnel that will be required to augment the plant staff will be outlined in the supporting procedures for the plan.

Item B.9

Letters of agreement will be introduced in Section A.

NRC REVIEW COMMENTS  
FERMI 2 RADIOLOGICAL EMERGENCY RESPONSE PLAN

C. EMERGENCY RESPONSE SUPPORT AND RESOURCES

- C.1.a Identify specific persons authorized to request Federal assistance.
- C.1.b. Submit provisions for incorporating the Federal response capability into Emergency operations (i.e., Department of Energy). The Plan should specify the Federal resources expected for accident categories in Appendix 1 of the criteria, including expected times of arrival at the site. Specific licensee resources as needed to support the Federal response should be listed in the Plan, e.g., command posts, telephone lines, radio frequencies and telecommunications centers.
- C.2.b Specify the provisions for dispatching a representative to principal offsite government Emergency Operations Centers (EOC).
- C.3 Identify available radiological laboratories and their capabilities and the response times that can be expected in an emergency (i.e., vendors, universities, private laboratories, etc.).
- C.4 Provide a copy of the mutual aid agreement with other nuclear facilities.

NRC REVIEW COMMENTS  
FERMI 2 RADIOLOGICAL EMERGENCY RESPONSE PLAN

RESPONSE

C. EMERGENCY RESPONSE SUPPORT AND RESOURCES

Item C.1.a.

In section C.1 (p. C-1 the Emergency Director is clearly delineated as having the responsibility to request Federal assistance.

Items C.1.b. and C.1.c.

Limited Federal Assistance will be requested by the Fermi 2 Emergency Director as indicated in the letter of agreement with the DOE.

Activation of the Federal Radiological Response Plan (FRRP) falls within the province of the State. Any resources required to support the FRRP would also be within the responsibility of the State.

Item C.2.b.

Representatives will be dispatched to principal off-site EOCs as requested by the offsite response organization.

Item C.3

Available radiological laboratories and their capabilities will be specified in letters of agreement as they are completed.

Item C.4.

The mutual aid agreement will be included as a letter of agreement when it is signed by all parties.

NRC REVIEW COMMENTS  
FERMI 2 RADIOLOGICAL EMERGENCY RESPONSE PLAN

D. EMERGENCY CLASSIFICATION SYSTEM

- D.1. Provide comprehensive parameter values and/or equipment status for all emergency action levels and initiating conditions for each emergency classification. The information provided in Tables D1-D4 does not provide sufficient detail for evaluation.
- D.3 Demonstrate that State and local organizations have procedures providing for emergency actions consistent with those recommended by the FERMI nuclear facility.

NRC REVIEW COMMENTS  
FERMI 2 RADIOLOGICAL EMERGENCY RESPONSE PLAN

RESPONSE

D. EMERGENCY CLASSIFICATION SCHEME

Tables D.1 through D.4 will be reviewed, and where appropriate additional details will be provided. Detailed values will be provided in the implementing procedures.

Item D.3

The responsibility for State and local organizations to have procedures for emergency action levels consistent with those recommended in NUREG-0654/FEMA-REP-1 lies with FEMA, the organization that reviews the offsite plans.



NRC REVIEW COMMENTS  
FERMI 2 RADIOLOGICAL EMERGENCY RESPONSE PLAN

E. NOTIFICATION METHODS AND PROCEDURES

- E.1. Describe the procedures for message authentication and verification.
- E.2. Describe the provisions for followup messages from the facility to offsite authorities.
- E.6 Commit that a prompt Alerting and Notification System meeting the design objectives of NUREG-0654, Rev. 1, Appendix 3 will be developed and in place. The Plan should address the administrative and physical means, and the time required to promptly notify the public of an emergency. The Plan should commit to the establishment of such a system and indicate when the system will be operational.
- E.7. Provide for written messages intended for the public consistent with the licensee's classification scheme. Messages to the public giving instructions regarding specific protective actions to be taken by occupants of affected areas should be included in the Plan.

NRC REVIEW COMMENTS  
FERMI 2 RADIOLOGICAL EMERGENCY RESPONSE PLAN

RESPONSE

E. NOTIFICATION METHODS AND PROCEDURES

Item E.1 and E.2

The procedures for message authentication, verification and follow-up have not been completed.

Item E.5

A study has been conducted to determine the methods for prompt notification around the Fermi 2 plant. Emergency preparedness planning for the jurisdictions within Monroe and Wayne Counties has been initiated through the Emergency Services Division of the Michigan State Police. At the appropriate time, discussions on the prompt notification system will be initiated through the State Police with these jurisdictions within the 10-mile EPZ. A schedule has not been established for this contact. It is anticipated, however, that the system will be operational prior to issuance of a license for power operation.

Item E.7

Written messages intended for the public with respect to the classification scheme and protective actions are the responsibility of State and local authorities, not the licensee and as such will not be included in the plan.

Messages of this nature should be developed on a case-by-case basis since they are highly dependent on the emergency conditions. "Canned" messages are of no value.

NRC REVIEW COMMENTS  
FERMI 2 RADIOLOGICAL EMERGENCY RESPONSE PLAN

F. EMERGENCY COMMUNICATIONS

The provision for communications as described in the Plan is insufficient to meet the objectives of the criteria. The Plan should include information to describe:

- F.1. 1) Alternates for both ends of the communications link.
- F.1.a. 2) How State, local and other support groups will be notified 24 hours per day (e.g., town sheriff, volunteer fire fighters, local EOC volunteers).
- F.2. 3) The communications link between the facility and mobile medical support groups.

NRC REVIEW COMMENTS  
FERMI 2 RADIOLOGICAL EMERGENCY RESPONSE PLAN

RESPONSE

F. Emergency Communications

Item F.1

Alternates for the communications link are delineated in the RERP procedures.

Item F.1a

Means of notification of various response groups are delineated in the RERP procedures.

Item F.2

Once a person is in the ambulance and is being transported to the hospital, the communications link is between the vehicle and the hospital with which the Licensee has an agreement.

NRC REVIEW COMMENTS  
FERMI 2 RADIOLOGICAL EMERGENCY RESPONSE PLAN

G. PUBLIC EDUCATION AND INFORMATION

- G.1. The Public Information Program described in the Plan does not clearly define what sector of the public will receive periodic information regarding how they will be notified, what their actions should be in an emergency emergency, the agreed upon means of evacuation verification, the location of relocation centers and the use of radio-protective drugs. Further, information on provisions for the specific needs of the handicapped should be included. Provide this information.
- G.2. Provide actual samples of the Public Information Program that will be distributed to the public, for review and evaluation.
- G.4.c. Describe the means and methods used by each organization for rumor control.

NRC REVIEW COMMENTS  
FERMI 2 RADIOLOGICAL EMERGENCY RESPONSE PLAN

RESPONSE

G. Public Education and Information

Item G.1

Section G.1 of the Fermi 2 RERP describes the methods that will be used and the segments of the public that will receive the information. Many of the details requested will be included in procedures and not the RERP.

Item G.2

There is no requirement that the Licensee provide samples of the Public Information Program for review and evaluation.

Item G.4.c

The means and methods for rumor control will be included in procedures.

NRC REVIEW COMMENTS  
FERMI 2 RADIOLOGICAL EMERGENCY RESPONSE PLAN

H. EMERGENCY FACILITIES AND EQUIPMENT

- Identify all acronyms used to describe plant systems.
  - Verify that "as built" diagrams of the facility will be available for the personnel in the EOF and TSC.
  - Identify Laboratory facilities, their capabilities, and the expected backup response they may provide during an emergency.
- H.1. Specify the types of equipment available in the TSC, and EOF, identified in NUREG-0696, including the types and locations of communications equipment. This information should be detailed on a scaled drawing.
- H.2. Specify the road distance and travel time between the control room for both the interim and permanent nearsite EOF.
- H.5.a. Provide a detailed description of the process monitors. The description provided in Table H.8 does not give sufficient detail for evaluation.
- H.5. Provide a description of the meteorological instrumentation and procedures as identified & in Appendix 2 of NUREG-0654, Rev. 1 and the provisions to obtain representative real-time meteorological information from other
- H.6. sources.
- H.9. Specify how personnel onsite during the emergency will have adequate protective equipment available to them, i.e., protective respiratory devices.
- H.10. Identify the provisions for inspection, inventory, quarterly operational checks and calibration of both fixed and portable instruments and equipment (protective equipment, communication equipment, radiological monitoring equipment and emergency supplies).

NRC REVIEW COMMENTS  
FERMI 2 RADIOLOGICAL EMERGENCY RESPONSE PLAN

RESPONSE

H. Emergency Facilities and Equipment

- o A list of abbreviations and acroynms is included in the RERP on the page before Appendix I. This will be expanded as new material becomes necessary.
- o Details such as the availability of "as built" drawings will appear in procedures for the facilites.
- o Laboratories are identified in Sections A and C.

Item H.1

The level of detail requested for the emergency response facilities is not available at this time . Additional information will be provided after it becomes available.

Detroit Edison, however, is convinced that it is innapropriate to include this information in the RERP.

Item H.2

The road distance and travel time between the control room and the EOF is not relevent to the RERP. The EOF is located within owner controlled property and travel is over owner controlled roadways.

Item H.5.a

The process control monitors are evaluated in the FSAR review process and the information provided in Table H.8 is sufficient for the purposes of the RERP.



Item H.5 and H.6

Meteorological instrumentation is described in Appendix 1 to these responses.

Item H.9

Location and quantities of protective equipment are being developed and will be included in the RERP procedures.

Item H.10

The information requested in Item H.10 will be provided in RERP procedures.

NRC REVIEW COMMENTS  
FERMI 2 RADIOLOGICAL EMERGENCY RESPONSE PLAN

I. ACCIDENT ASSESSMENTS

- I.3. Include a plot or graph indicating the relationship between the containment radiation &
- I.4. monitor(s) reading(s) and radioactive material available for release from containment.
- I.3.b. Clearly establish methods and techniques used to determine the magnitude of a release of radioactive materials based on plant effluent monitors. In addition, establish the relationship between effluent monitor readings and onsite and offsite exposures and contamination for various meteorological conditions.
- I.6. Describe the methodology to be used for determining release rates and projected doses if the instrumentation used for assessment were to go offscale or become inoperable.
- I.7. Describe the capability and resources for field monitoring within the plume exposure Emergency Planning Zone. Methods, equipment, and expertise to make rapid assessments of the actual or potential magnitude and locations of any radiological hazards through the liquid or gaseous pathways should be described. The description should address activation criteria, means of notification, field team composition, transportation, communication, monitoring equipment, and estimated deployment times.
- I.9. Describe the means for relating measured field contamination levels to dose rates for key isotopes and gross radioactivity measurements. Also describe the provisions for comparison with Protective Action Guides.
- I.10. Describe the inplace arrangements for location and tracking of the airborne radioactive plume.

NRC REVIEW COMMENTS  
FERMI 2 RADIOLOGICAL EMERGENCY RESPONSE PLAN

RESPONSE

I. Accident Assessment

Items I.3, I.3.c, I.4, I.6 and I.9

The methodology for accident assessment is being developed

Item I.7

The details requested in this item are under development and will be contained in the RERP procedures.

Item I.10

The inplace arrangements for location and tracking the airborne radioactive plume will be a part of the RERP procedures for the Radiological Emergency Teams that operate in the field.

NRC REVIEW COMMENTS  
FERMI 2 RADIOLOGICAL EMERGENCY RESPONSE PLAN

J. PROTECTIVE RESPONSE

- Table J.9 is missing from the Plan.

- J.2. Explain the basis for the adverse weather evacuation time estimates, the selection of alternative routes and the methods of evacuation that will be used during inclement weather.
- J.4. Describe the provisions for evacuation of non-essential onsite personnel, including evacuation routes, transportation and decontamination capabilities. On a diagram, show the location of decontamination facilities.
- J.6. Describe the use of radioprotective drugs by onsite personnel. Specify who decides when they are used, by whom, and what dosage is. Specify the amount available onsite.
- J.7. Describe the recommendations for protective measures or calculated dosage rates. Recommendations should be keyed to the emergency classifications and Action Levels described in Appendix 1 of the criteria. Verify that as a minimum, the protective actions listed in Tables J.2 and J.4 will be recommended.
- J.10. Discuss the provisions for protecting the health and safety of mobility-impaired persons.
  - J.10.e. Describe the provisions for individual respiratory protection, protective clothing and the use of radioprotective drugs by onsite emergency workers.
  - J.10.f. Discuss provisions by State and local organizations for administering radioprotective drugs to the general public.
- J.11.a. Submit a map showing evacuation routes to be used by onsite and offsite personnel, which identifies relocation centers, medical facilities shelter areas.

NRC REVIEW COMMENTS  
FERMI 2 RADIOLOGICAL EMERGENCY RESPONSE PLAN

RESPONSE

J. Protective Response

Item J.2 and J.4

The details of site evacuation will be included in the RERP procedures. The location of decontamination facilities has not been determined.

Item J.6

A position concerning the use of radioprotective drugs has not been established.

Item J.7

The recommendations for protective measures that will be provided to the appropriate State and local authorities are being developed as part of Section I.

Item J.10

Protection of the health and safety of mobility impaired persons outside the owner controlled property is the responsibility of the State and local authorities and should be addressed in their plan procedures.

Item J.10f

Provisions by State and local organizations for administering radioprotective drugs should be addressed in their plan procedures and are not a part of the Fermi 2 RERP.

Item J.11.a (Should be J.10.a)

This item is under discussion with the local governmental authorities through the State Police planners.

NRC REVIEW COMMENTS  
FERMI 2 RADIOLOGICAL EMERGENCY RESPONSE PLAN

K. RADIOLOGICAL EXPOSURE CONTROL

- K.2. Specify who, besides the Emergency Director, can authorize excess exposure to personnel.
- K.2. Submit information regarding the personnel training program that will allow volunteers to make rapid decisions based upon knowledge of potential risks.
- K.3.b. Specify the methods used to ensure that dosimeters are read at appropriate frequencies (specify these frequencies) and the methods used to provide for maintaining records.
- K.5.a. Specify action levels for determining the need for decontamination.
- K.5.b. Specify the means for radiological decontamination of emergency personnel.
- K.7. Identify the locations and specify the capability for decontaminating relocated onsite personnel, and providing extra clothing.

NRC REVIEW COMMENTS  
FERMI 2 RADIOLOGICAL EMERGENCY RESPONSE PLAN

K. Radiological Exposure Control

Item K.2

- The responsibility of the Emergency Director to authorize excess personnel exposure cannot be delegated.
- The onsite radiation protection program is presently under development.

Item K.3.b

Methods and frequencies for dosimeter reading are specified in the RERP procedures and do not have to be detailed in the plan.

Item K.5.a, K.5.b, and K.7

Section K of the Fermi 2 RERP addresses the criteria for satisfying the noted items. Any further details will be in RERP procedures.

NRC REVIEW COMMENTS  
FERMI 2 RADIOLOGICAL EMERGENCY RESPONSE PLAN

L. MEDICAL SUPPORT

- L.1. Provide Letters of Agreement with appropriate hospitals (these appear to be the Seaway and University Hospitals in the current plan). These agreement letters should specify what services will be provided by the hospital and what limits of actions will be.
- L.2. Specify what first aid treatment facilities are available onsite. This should be accomplished by both a narrative description of the facility and a diagram showing the first aid area's relationship to the rest of the site.
- L.3. Provide a Letter of Agreement with an ambulance service (EMTS Ambulance Service in the plan). Specify whether a Health Physics Technician from the site will accompany the contaminated injured person(s). Specify what type of communications will be available between the ambulance, the site and the hospital.



NRC REVIEW COMMENTS  
FERMI 2 RADIOLOGICAL EMERGENCY RESPONSE PLAN

RESPONSE

L. Medical Support

Item L.1

All letters of agreement when completed will be contained in an Appendix to the plan.

Item L.2

The first aid facilities that will be available when the plant becomes operational are being designed. A facility presently exists in conjunction with the construction activity.

Item L.3

- An individual trained in body health physics monitoring techniques will accompany the radiologically contaminated person.
- Once the contaminated person is in the ambulance and being transported to the hospital, all communications will center at the hospital.

NRC REVIEW COMMENTS  
FERMI 2 RADIOLOGICAL EMERGENCY RESPONSE PLAN

M. RECOVERY AND REENTRY PLANNING AND POSTACCIDENT OPERATIONS

- M.1. Describe the means by which decisions are reached to relax both onsite and offsite protective measures during the recovery period following an emergency.
- M.2. The Plan lists the positions of the individuals that fill key positions but not the authority and responsibility of each. Specify by position/title the authority and responsibilities and who will fill key positions in the facility recovery organization.
- M.3. Describe the means for informing members of the response organizations that a recovery operation is to be initiated, and identify those changes in the organizational structure that may occur.
- M.4 Describe the method(s) established for periodically estimating the total population exposure.

NRC REVIEW COMMENTS  
FERMI 2 RADIOLOGICAL EMERGENCY RESPONSE PLAN

RESPONSE

M. Recovery and Reentry Planning and Postaccident Operations

Item M.1

Each emergency situation is different and the Recovery Plan should be sufficiently flexible that the organization can define criteria and methodology at the time of the recovery operation.

Item M.2

The Recovery Organization is in the process of being revised. The specifics requested are not available.

Item M.3

The method for informing the response organizations that the recovery phase has been initiated will be contained in the general procedures for recovery.

Item M.4

The method for estimating population exposure is being developed with the accident assessment program.

NRC REVIEW COMMENTS  
FERMI 2 RADIOLOGICAL EMERGENCY RESPONSE PLAN

N. EXERCISES AND DRILLS

- N.2.a. The communications drill frequency should be changed from annually to quarterly to conform to the criteria in NUREG-0654, Rev. 1.
- N.2.b. Verify that five drills will be conducted quarterly.
- N.3. Verify that exercise and drill scenarios will be designed to allow free play for decision making.
- N.3.a. Verify that advance materials will be provided to official observers.

NRC REVIEW COMMENTS  
FERMI 2 RADIOLOGICAL EMERGENCY RESPONSE PLAN

RESPONSE

N. Exercises and Drills

Item N.2a

The Michigan Emergency Preparedness Plan provides for communications with the state in the ingestion pathway. The Licensee is not responsible for directly contacting the state (Ohio) in the ingestion pathway.

Item N.2b

As stated in NUREG-0654, Rev. 1, fire drills will be conducted in accordance with the plant technical specifications.

Item N.3

Consideration will be given in the design of the scenarios to allow free play and opportunity for decision making.

Item N.3a

RERP procedures will designate who will be provided with advance materials and the type of materials that will be received.

NRC REVIEW COMMENTS  
FERMI 2 RADIOLOGICAL EMERGENCY RESPONSE PLAN

O. RADIOLOGICAL EMERGENCY RESPONSE TRAINING

- 0.1. Additional information is required concerning the training program for personnel who will implement the radiological emergency response plan. The description should include the specialized training and periodic retraining programs (include scope, nature and frequency) for each of the nine categories of personnel listed in Section II.0.4. of NUREG-0654, Rev. 1.
- 0.2. Identify where the formal training program includes training to determine individual qualifications, and specify the minimum level of competence established for each position assigned an emergency response role.
- &
- 0.3. Training and retraining programs, qualifications testing and competence for State and local officials should also be included.
- 0.3 The Plan should be modified to specify that first aid personnel will be retrained and tested annually and personnel holding multimedia certifications should be recertified every two years.

NRC REVIEW COMMENTS  
FERMI 2 RADIOLOGICAL EMERGENCY RESPONSE PLAN

RESPONSE

0. Radiological Emergency Response Training

Items 0.1, 0.2, and 0.3

A training program for personnel who will plan and/or implement Radiological emergency response plans has been established. As appropriate, the program includes practical drills as well as formal instruction. Initial training is reinforced by annual retraining.

The radiological emergency response training for members of the onsite emergency organization will consist of formal instruction with practical drills and exercises in which individuals demonstrate their ability to perform their assigned emergency functions.

The directors and coordinators of the plant emergency organization are given an overview of the composite of the various emergency response organizations, offsite as well as onsite, and their concept of operation. They are also provided with an explanation and practical application of (by drills, exercises, etc.) the function and the relationship of each of the coordinate elements of this composite. They are provided adequate information on the initiating conditions and the emergency response actions for various emergency situations. Special emphasis will be given on notification procedures and communication links. The supervision of special teams and the acquiring of proficiencies in the determination of offsite radiological doses will also be a part of the curriculum.

Personnel responsible for accident assessment, including control room shift personnel and STAs, are given an overview of the total onsite emergency response organization and are provided with an explanation and application of the function and relationship of each coordinate element.

They are provided adequate information on initiating conditions (equipment status, instrument readings or parameter values) for recognizing the various emergency conditions, and the preplanned response actions for such situations. The STAs receive specialized training in transient and accident response; they are trained to recognize and diagnose a wide range of unusual conditions and accident situations including multiple equipment failures and human errors, complex transient responses and inadequate core cooling.

Training for the radiological emergency teams includes the operation of portable radiation survey instruments and air sampling equipment, air sampling techniques, contamination surveys, air activity, radiation field determinations, and dose assessment.

Quarterly drills are conducted for the fire brigade to maintain a high proficiency in fire fighting. Radiation safety, security and special hazards associated with a nuclear power plant are a part of their training.

Security Department personnel are given instructions on the emergency procedures applicable to the Security Department. They are also provided a concept of the expected response of the major onsite and offsite response organizations.

Repair and damage control functions are handled by the maintenance personnel through their normal procedures. These personnel are trained in the implementation of these procedures.

First aid training is provided to the rescue teams and to many others. The initial training will qualify the participants for an American Red Cross First Aid certificate. Additional annual training will be provided for the emergency treatment of contaminated injuries and in the use of emergency rescue equipment. Personnel holding multi-media certification will be recertified every three years.

The emergency medical assistance program provides for the annual training of plant, ambulance and hospital personnel who may be involved directly or indirectly in the execution of the program. This training is oriented toward the transporting, handling and treatment of contaminated injuries. Company physicians are sent to a seminar on the medical treatment for radiation injuries.



Select individuals from the licensee's headquarters are trained in radiation protection and in certain emergency procedures to provide for the augmentation of the onsite emergency organization should additional trained manpower be required during an emergency. They are also provided an overview of the various response organizations and their concept of operation. This training is provided in part by the annual exercise described in Section N.

Personnel responsible for transmission of emergency information and instructions are instructed on net discipline, language usage and their operating procedures.

Item 0.4

The licensee cannot impose training requirements on State and local personnel. Provisions are made for firefighters and medical and ambulance services.

NRC REVIEW COMMENTS  
FERMI 2 RADIOLOGICAL EMERGENCY RESPONSE PLAN

P. RESPONSIBILITY FOR PLANNING EFFORT

- o Provide an appendix listing the schedules for installation of equipment, the type of equipment to be installed, testing dates and dates when the equipment will be operational.
- P.1. Verify that each organization shall provide for the training of individuals responsible for the planning effort.
- F.3. The Plan lists the Superintendent-Nuclear Productions and the Manager-Nuclear Operations as having responsibilities for reviewing and updating the plan. However, it is unclear as to the identity of the Emergency Plan Coordinator. Identify the one individual responsible for review and updating of the Plan.
- P.7. Provide an appendix listing, by title, the procedures required to implement the Plan.
- P.8. Although the Plan is basically written in NUREG-0654 format, many areas of the plan pertain to more than one area of NUREG-0654; provide a cross-referenced index to all NUREG-0654 criteria.

NRC REVIEW COMMENTS  
FERMI 2 RADIOLOGICAL EMERGENCY RESPONSE PLAN

RESPONSE

P. Responsibility for the Planning Effort

- o The Fermi 2 RERP is consistent with NUREG-0654, and Edison regards it inappropriate to include the information in the Fermi 2 RERP. A schedule of the type requested, however, is currently being developed and will be provided when it is completed.

Item P.1

RERP procedures will describe the training programs provided for Licensee personnel.

Item P.3

The Assistant Vice President and Manager - Nuclear Operations has the overall responsibility for the RERP. Section P.1 clearly states the responsibilities of the Emergency Plan Coordinator.

Item P.7

The list of RERP procedures is presently undergoing revision and is not available.

Item P.8

Detroit Edison does not have a cross-referenced index. Because the Fermi 2 RERP closely follows the requirements of NUREG-0654, the development and incorporation of a cross reference is regarded to be unnecessary.

APPENDIX 1

Enrico Fermi Atomic Power Plant, Unit 2

NRC Docket No. 50-341

Proposed Meteorological Data

Acquisition System

### Meteorological Data Acquisition System(MDAS)

The meteorological monitoring system on the Fermi Site presently meets the requirements of R.G.1.23.

Using the present onsite 60-meter tower, the existing meteorological sensors will be upgraded, including a temperature differential network, a sigma theta signal conditioner, and a precipitation gauge capable of real-time data acquisition, and designated the primary system. A secondary system will consist of redundant sensors mounted on the 60-meter tower that will be independent of the primary system.

A backup system will consist of wind speed, wind direction, and sigma theta mounted at the 10-meter level of the 150-meter tower presently onsite. Tables H-1, H-2, and H-3 indicate the parameters measured, the sensor descriptions, and the signal conditioners, respectively. Figure H-1 shows a block diagram of the modified system. This is subject to change as design progresses.

The 60-meter tower will have redundant power supplies. The primary system will be fed by a line designated as Brest 5063 and the secondary system by a line designated Fermi 1. Should the power be lost on either line, an automatic throwover switch will connect the remaining energized line to the system. The backup system will be fed by Fermi 1. Redundant power is not supplied to this system since there are two other sources of data at the 10-meter level.

Data will be transmitted to the microprocessors located in the Fermi 2 Control Room balcony and the various users such as the Control Room, Technical Support Center, and Emergency Operations Facility by various telephone lines (overhead and underground) and microwave.

Figure H-2 indicates the various power lines and data links; Figure H-3 indicates the links to the microprocessors. Dial-up capability for both onsite and offsite is provided at the microprocessors.

A supplemental tower system is available from the ambient air quality monitoring network around the Monroe Power Plant. This system is maintained by Detroit Edison's Engineering Research Department and is available by dial-up capability. A brief description of this system is enclosed.

## EF-2-FSAR

TABLE H-1 METEOROLOGICAL PARAMETERS

10 Meter Level

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

60 Meter Level

Wind Speed  
Wind Direction  
Air Temperature  
Sigma Theta

Miscellaneous

Temperature Difference  
Precipitation at Ground Level (a)  
Pasquill Stability Classification

- 
- a. Available from the primary system only.

## EF-2-FSAR

TABLE H-2 METEOROLOGICAL MONITORING SYSTEM SENSORS

### WIND SPEED SENSORS: All Levels

Sensor: Climet Instruments Model #WS-011-1.(a) Wind speed transmitter and cup assembly

Distance constant: 5 ft maximum  
Threshold wind: 0.6 mph  
Accuracy:  $\pm 1\%$  or 0.15 mph, whichever is greater

### WIND DIRECTION SENSORS: All Levels

Sensor: Climet Instruments Model #WD-012-30(a) wind direction transmitter and wind vane assembly

Distance constant: 1 meter maximum  
Damping ratio: 0.4 standard  
Threshold: 0.75 mph  
Accuracy:  $\pm 3^\circ$

### TEMPERATURE SENSORS: 10-m Level

Sensor: Climet Instruments Model 015-3(a) thermistor

Range:  $-30^\circ\text{C}$  to  $+50^\circ\text{C}$   
Linearity:  $\pm 0.16^\circ\text{C}$   
Accuracy:  $\pm 0.15^\circ\text{C}$

### DIFFERENTIAL TEMPERATURE: All Levels

Sensor: Climet Instrument Model 015-3(a) matched thermistors

Range:  $-5^\circ\text{C}$  to  $+10^\circ\text{C}$   
Linearity:  $\pm 0.05^\circ\text{C}$   
Accuracy:  $\pm 0.05^\circ\text{C}$

### DEW POINT SENSOR:

Sensor: Environmental Equipment Division of EG&G, Model #110S-M(a) dew point measuring set

Range:  $-62^\circ\text{C}$  to  $+49^\circ\text{C}$   
Accuracy:  $\pm 0.3^\circ\text{C}$  maximum



## EF-2-FSAR

TABLE H-2 METEOROLOGICAL MONITORING SYSTEM SENSORS (Continued)

PRECIPITATION SENSOR:

Sensor:	Weathertronics Incorporated Model 6020 (a) electrically-heated tipping-bucket rain and snow gauge	
Range:	Unlimited	
Accuracy:	0.01 in.	
Sensitivity:	0.01 in.	

---

a. Or equivalent.

# EF-2-FSAR

TABLE H-3 METEOROLOGICAL MONITORING SYSTEM SIGNAL CONDITIONING

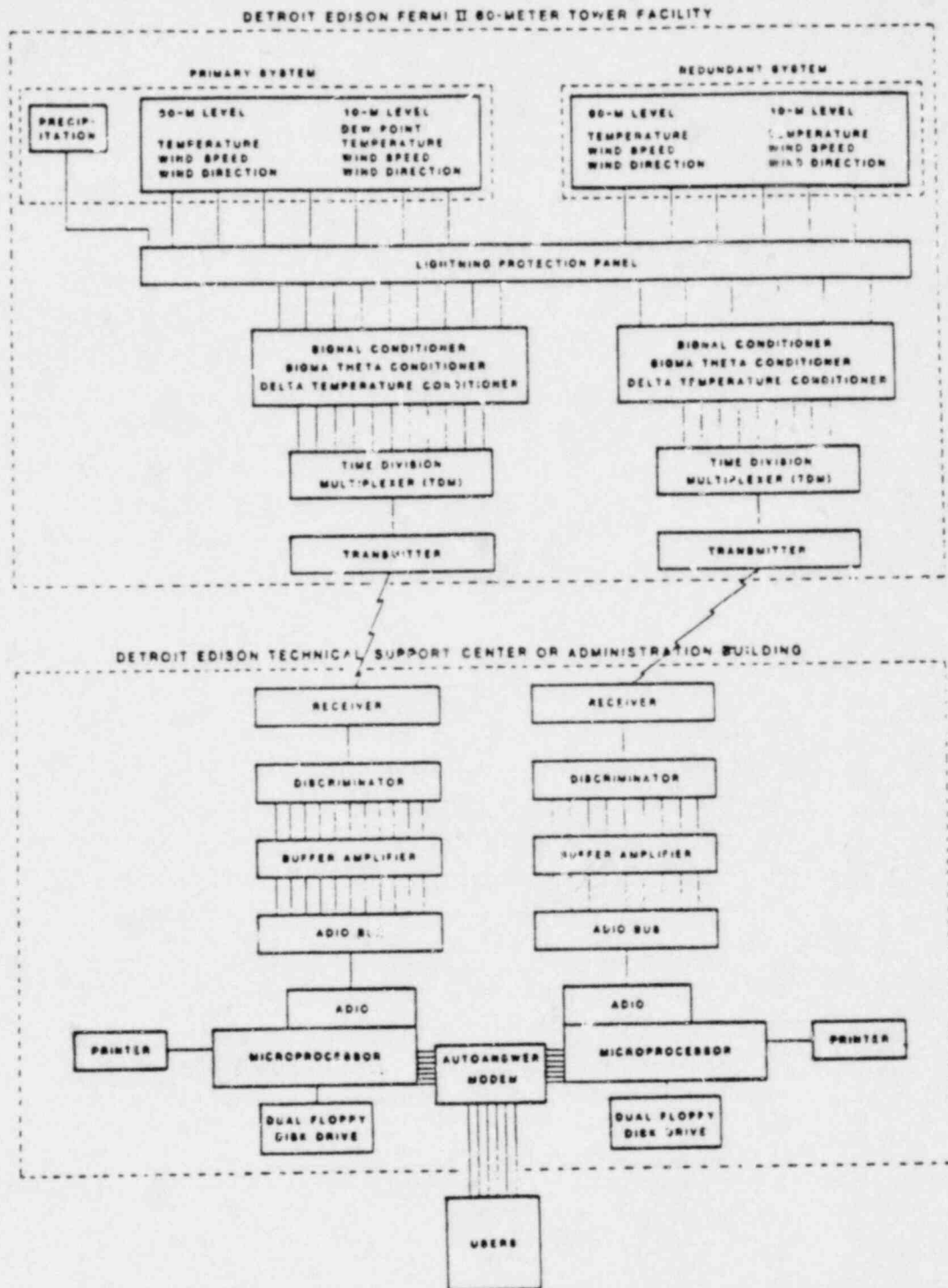
SIGNAL CONDITIONER: Primary and Secondary Systems

TRANSLATOR:	Climet Instruments Model 060-20 Translator (a) Number of Channels: 20 I/O Connections: Barrier strip connections Voltage Outputs: 0 to 5 V  Power Requirements: 115 Vac
WIND SPEED PC Board:	Climet Instruments Model 05-8003-26 (a) Range: 0 to 100 mph Accuracy: 0.015% full scale
WIND DIRECTION PC Board:	Climet Instruments Model 05-8019-2, PCB (a) Range: 0 to 540° Accuracy: 0.05% full scale
TEMPERATURE PC Board:	Climet Instruments Model 05-8004-15 (a) Range: -30°C to +50°C Accuracy: 0.002% full scale
DIFFERENTIAL TEMPERATURE PC Board:	Climet Instruments Model D8005-1 (a) Range: -5°C to +10°C Accuracy: 0.033% full scale
DEW POINT PC Board:	Climet Instruments Model 05-8004-52 (a) Range: -30°C to +50°C Accuracy: 0.065% full scale
PRECIPITATION:	Climet Instruments Model 05-8157-4 (a) Range: 0-1 in. Accuracy: 0.001% full scale
SIGMA THETA:	Climatronics Standard Deviation Computer (a) Range: 0-100° equals 0-5 V Accuracy: $\pm 2^\circ$

---

a. Or equivalent.

# EF-2-FSAR



## ENRICO FERMI ATOMIC POWER PLANT UNIT 2 FINAL SAFETY ANALYSIS REPORT

FIGURE 4-1

BLOCK DIAGRAM OF PROPOSED  
METEOROLOGICAL DATA ACQUISITION SYSTEM

AMENDMENT 35 - MARCH 1981

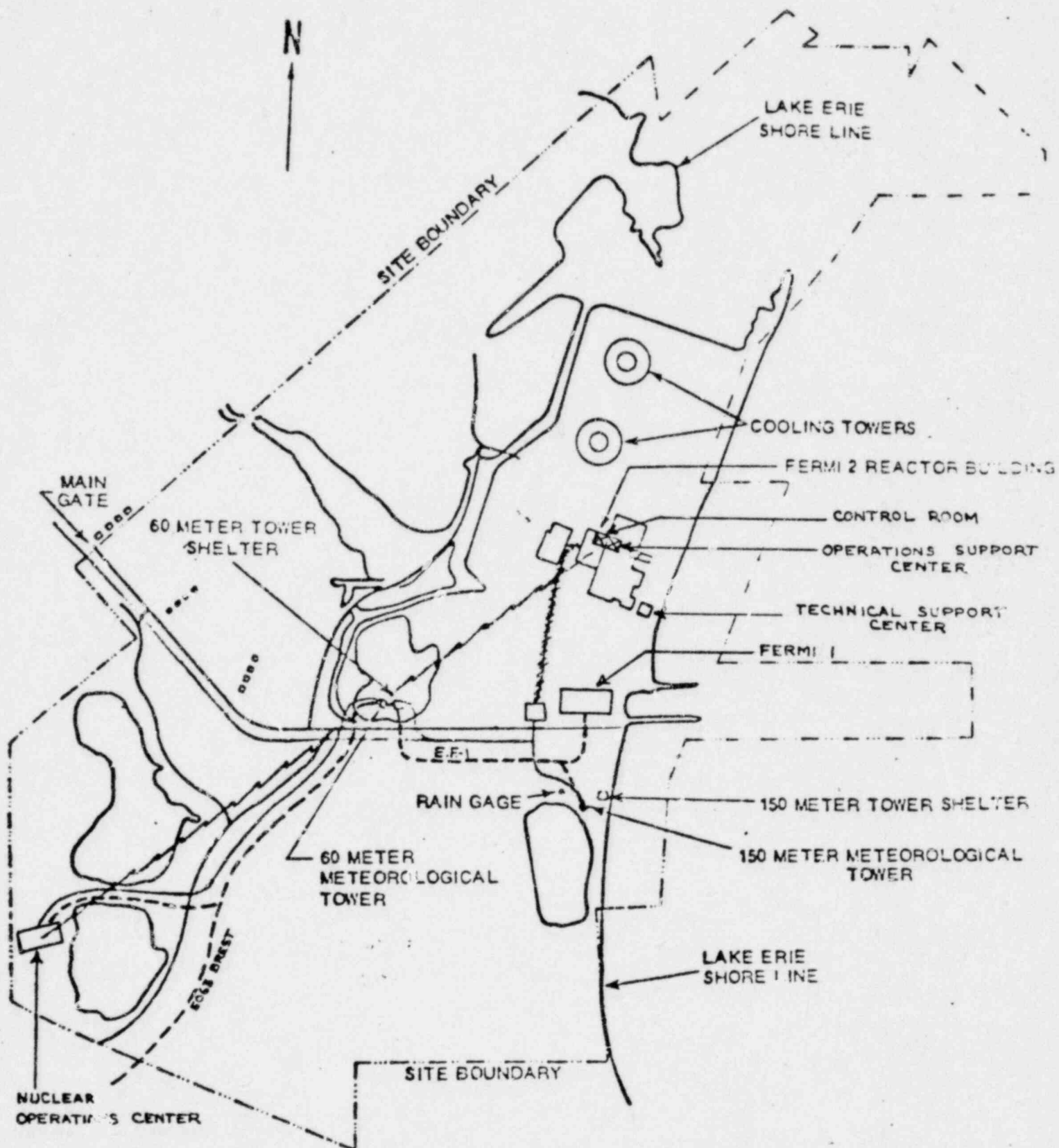
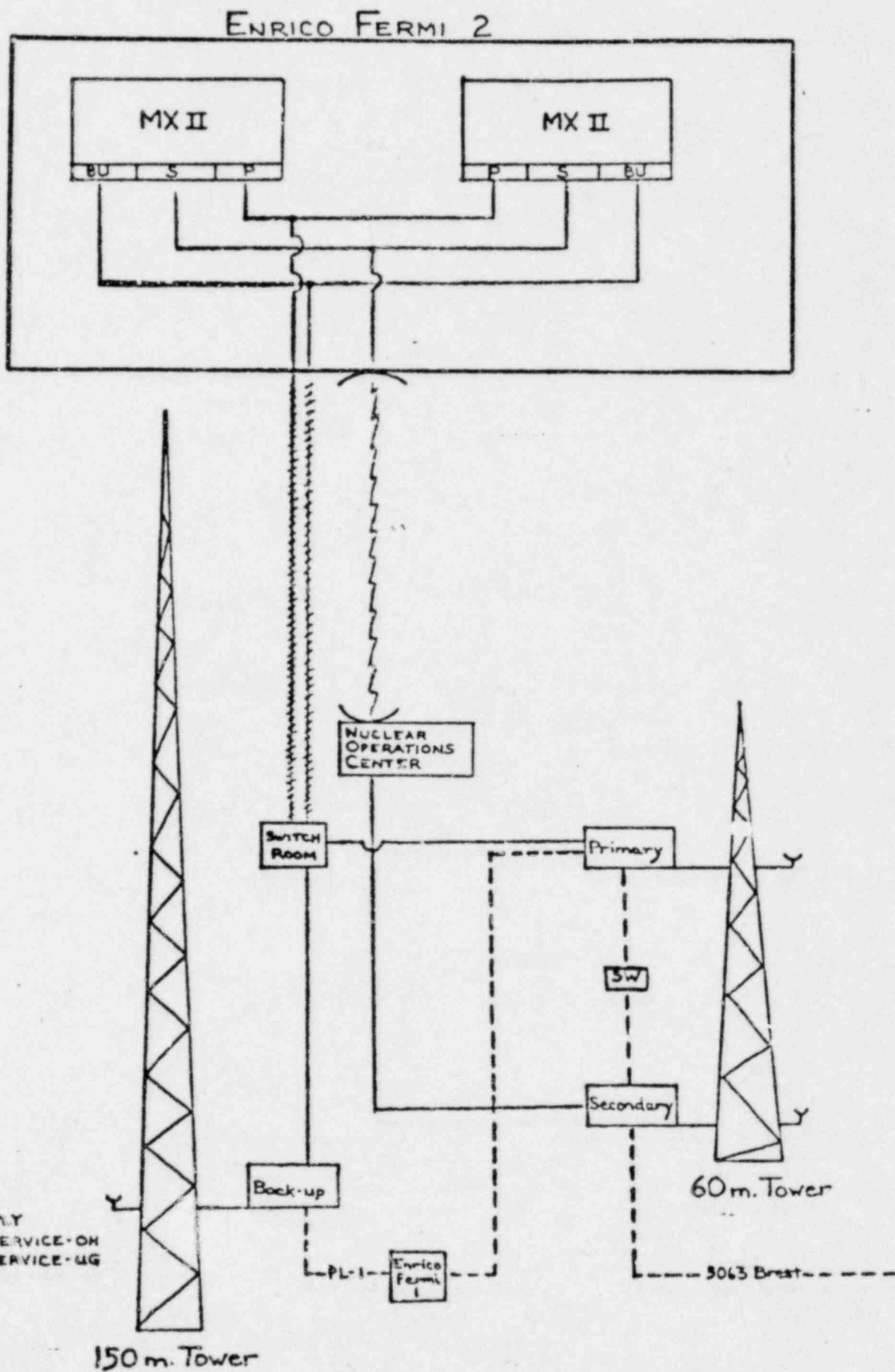


FIGURE H-2

- POWER SUPPLY
- TELEPHONE SERVICE-OH
- ~~~~~ MICROWAVE
- ~~~~~ TELEPHONE SERVICE-UG

DETROIT EDISON FERMI II 60-METER  
AND 150-METER TOWER LOCATIONS



ENRICO FERMI ATOMIC POWER PLANT, UNIT 2

NRC DOCKET NO. 50-341

DETROIT EDISON COMPANY

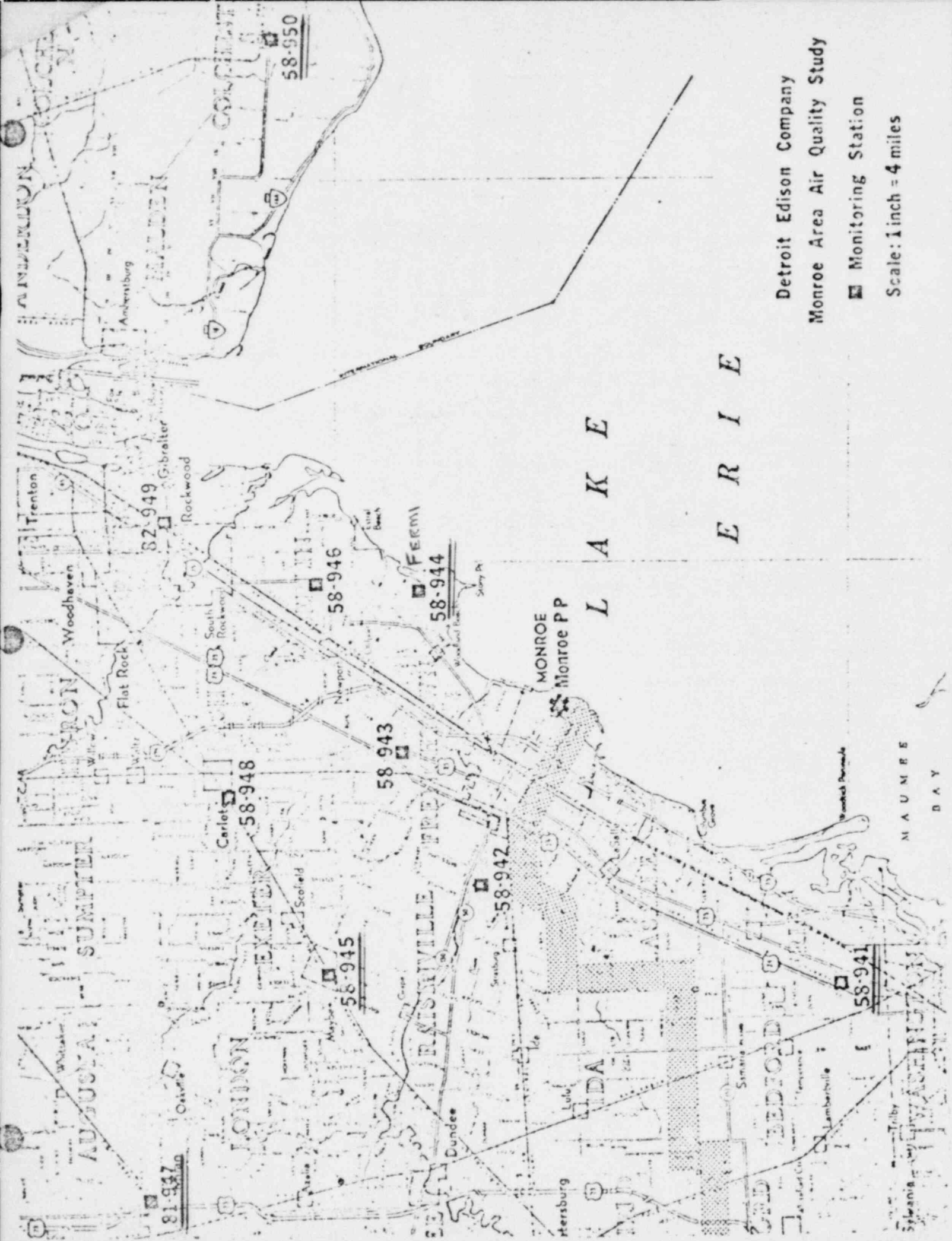
AMBIENT AIR QUALITY MONITORING

MONROE AREA NETWORK

APPENDIX A

DETAILS OF MONROE AREA NETWORK





Detroit Edison Company  
Monroe Area Air Quality Study  
Monitoring Station  
Scale: 1 inch = 4 miles

L A K E  
E R I E

MAUMRE  
DAY



# MONROE AREA AIR QUALITY STUDY

## Location of Ambient Monitoring Stations

<u>MASN SITE</u>	<u>NAME</u>	<u>UTM COORDINATES (km)</u>		<u>ELEVATION Msl (Ft)</u>	<u>Location</u>
		<u>EAST</u>	<u>NORTH</u>		
<u>58-941</u>	Sterns	289.84	4624.91	590	Sterns Road Substation - 880 E. Sterns Road - Erie Township - Monroe County, Michigan
58-942	Trinity	295.80	4644.39	625	Trinity Substation - 3611 Fairview Drive - Monroe Township - Monroe County, Michigan
58-943	Queen	303.23	4648.44	600	Queen Substation - 6015 N. Monroe Road - Frenchtown Township - Monroe County, Michigan
<u>58-944</u>	Fermi	312.46	4647.53	580	Fermi Energy Center - 6400 Dixie Hwy. - Frenchtown Township - Monroe County, Michigan
<u>58-945</u>	Maybee	291.08	4653.07	635	Maybee Substation - 9000 Baldwin Avenue - Maybee, Michigan - Monroe County, Michigan
58-946	Dixie	312.57	4654.00	590	9005 N. Dixie Hwy - Berlin Township - Monroe County, Michigan
<u>81-947</u>	Carpenter	279.07	4662.66	695	Carpenter Substation - 770 Ideal Street - Milan, Michigan - Washtenaw County, Michigan
58-948	Carleton	300.67	4657.94	620	Carleton Substation - 12050 Burns Road - Ash Township - Monroe County, Michigan
82-949	Fisher	316.03	4661.04	585	Fisher Substation - 18840 Woodruff Road - Gibraltar, Michigan - Wayne County, Michigan
<u>58-590</u>	Harrow	341.40	4655.10	625	Harrow Research Station - Harrow, Ontario - Canada

NOTE: Fermi Met. Tower same as 58-944.

DETROIT EDISON MONROE MONITORING PROGRAM INSTRUMENTATION

MASN SITE	NAME	SAMPLING HEIGHT (AGL)	PARAMETER	MONITOR		METHOD / PRINCIPLE OF OPERATION	DATE OPERATIONAL
				MANUFACTURER	MODEL		
58-941	Sterns	16 Ft	SO <sub>2</sub>	Meloy	SA-185-2A	Flame Photometry	Sept 75
		33 Ft	W/S	MRI	1074		Sept 75
		33 Ft	W/D	MRI	1074		Sept 75
		14 Ft	TSP	General Metals		Gravimetric	Sept 75
58-942	Trinity	16 Ft	SO <sub>2</sub>	Meloy	SA-185-2A	Flame Photometry	Sept 75
		14 Ft	TSP	General Metals		Gravimetric	Sept 75
58-943	Queen	16 Ft	SO <sub>2</sub>	Meloy	SA-185-2A	Flame Photometry	Sept 75
		16 Ft	COH	RAC	5000	Light Transmission	Sept 75
		14 Ft	TSP	General Metals		Gravimetric	Sept 75
58-944	Fermi	16 Ft	SO <sub>2</sub>	Meloy	SA-185-2A	Flame Photometry	Sept 75
		14 Ft	TSP	General Metals		Gravimetric	Sept 75
58-945	Maybee	16 Ft	SO <sub>2</sub>	Meloy	SA-185-2A	Flame Photometry	Sept 75
		33 Ft	W/S	MRI	1074		Sept 75
		33 Ft	W/D	MRI	1074		Sept 75
		14 Ft	TSP	General Metals		Gravimetric	Sept 75
58-946	Dixie	16 Ft	SO <sub>2</sub>	Meloy	SA-185-2A	Flame Photometry	Sept 75
		14 Ft	TSP	General Metals		Gravimetric	Sept 75
81-947	Carpenter	16 Ft	SO <sub>2</sub>	Meloy	SA-185-2A	Flame Photometry	Sept 75
		33 Ft	W/S	MRI	1074		Sept 75
		33 Ft	W/D	MRI	1074		Sept 75
		14 Ft	TSP	General Metals		Gravimetric	Sept 75
58-948	Carleton	16 Ft	SO <sub>2</sub>	Meloy	SA-185-2A	Flame Photometry	Sept 75
		14 Ft	TSP	General Metals		Gravimetric	Sept 75
82-949	Fisher	16 Ft	SO <sub>2</sub>	Meloy	SA-185-2A	Flame Photometry	Sept 75
		14 Ft	TSP	General Metals		Gravimetric	Sept 75
58-950	Harrow	16 Ft	SO <sub>2</sub>	Meloy	SA-185-2A	Flame Photometry	Dec 75
		33 Ft	W/S	MRI	1074		Dec 75
		33 Ft	W/D	MRI	1074		Dec 75
		14 Ft	TSP	General Metals		Gravimetric	Dec 75

DETROIT EDISON MONROE MONITORING PROGRAM INSTRUMENTATION  
(CONTINUED)

<u>MASN SITE</u>	<u>NAME</u>	<u>SAMPLING HEIGHT (AGL)</u>	<u>PARAMETER</u>	<u>MONITOR MANUFACTURER</u>	<u>MODEL</u>	<u>METHOD / PRINCIPLE OF OPERATION</u>	<u>DATE OPERATIONAL</u>
58-944	Fermi Met. Tower	33 Ft	W/S	Climet	WS-011-1		-
		33 Ft	W/D	Climet	WD-012-30		-
		33 Ft	Dew Pt.	EG&G	110S-M	Chilled Mirror	-
		33 Ft	Temp.	Rosemount	146BB	Linear Bridge - Resistance	-
		197 Ft	W/S	Climet	WS-011-1		-
		197 Ft	W/D	Climet	WD-012-30		-
		33-197 Ft	Δ Temp.	Rosemount	146BB	Linear Bridge - Resistance	-
		Ground	Mixing Depth	Aerovironment, Inc.	300C	Sound Pulse	10-79

## INSTRUMENT SPECIFICATIONS

### Meteorological Towers

58-941, 58-945, 81-947, 58-950

Wind Speed - MRI 1074

Starting Threshold	0.75 MPH
Response Distance	18 ft. (63% recovery)
Flow Coefficient	7.9 ft./revolution
Accuracy	$\pm 0.25$ MPH
Range	125 MPH (max.)

Wind Direction - MRI 1074

Starting Threshold	0.75 MPH
Delay Distance	4 ft. (50% recovery)
Damping Ratio	0.5 to 0.6
Accuracy	$\pm 2.5^\circ$
Range	540 $^\circ$