



Federal Emergency Management Agency

Region V
536 South Clark Street, 6th Floor
Chicago, IL 60605-1521

January 26, 2001

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DRS		
DNMS		
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Mr. James E. Dyer
Regional Administrator
Nuclear Regulatory Commission Region III
801 Warrenville Road
Lisle, Illinois 60532-4351

Dear Mr. Dyer:

Enclosed is a copy of the final report for the Fermi 2 Nuclear Power Plant exercise conducted in the State of Michigan, Monroe and Wayne Counties. The date of the exercise is October 25, 2000.

There were no new issues identified.

Copies of the report have been transmitted to the Nuclear Regulatory Commission (NRC) National Office, the State of Michigan and the FEMA National Office.

If there should be any questions, please call me or have a member of your staff contact Bruce Pfaff at (312) 408-5321.

Sincerely,

Woodie J. Curtis, Chairman
Regional Assistance Committee



**Final Exercise Report
Enrico Fermi 2 Nuclear Power Plant**

Licensee: Detroit Edison Company

Exercise Date: October 25, 2000

Report Date: January 26, 2001

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I. EXECUTIVE SUMMARY

On October 25, 2000, an exercise was conducted in the plume exposure pathway emergency planning zone (EPZ) around the Enrico Fermi 2 Nuclear Power Plant by the Federal Emergency Management Agency (FEMA), Region V. The purpose of the exercise was to assess the level of State and local preparedness in responding to a radiological emergency. This exercise was held in accordance with FEMA's policies and guidance concerning the exercise of State and local radiological emergency response plans and procedures.

The most recent exercise at this site was conducted on June 9, 1998. The qualifying emergency preparedness exercise was conducted on February 2, 1982.

FEMA wishes to acknowledge the efforts of the many individuals who participated in this exercise. In the State of Michigan the risk counties of Monroe and Wayne participated along with the State government.

Protecting the public health and safety is the full-time job of some of the exercise participants and an additional assigned responsibility for others. Still others have willingly sought this responsibility by volunteering to provide vital emergency services to their communities. Cooperation and teamwork of all the participants were evident during this exercise.

The State and local organizations demonstrated knowledge of their emergency response plans and procedures and adequately implemented them. No Deficiencies or Areas Requiring Corrective Action (ARCA) were identified as a result of this exercise.

II. INTRODUCTION

On December 7, 1979, the President directed FEMA to assume the lead responsibility for all offsite nuclear planning and response. FEMA's activities are conducted pursuant to 44 Code of Federal Regulations (CFR) Parts 350, 351 and 352. These regulations are a key element in the Radiological Emergency Preparedness (REP) Program that was established following the Three Mile Island Nuclear Station accident in March 1979.

FEMA Rule 44 CFR 350 establishes the policies and procedures for FEMA's initial and continued approval of State and local governments' radiological emergency planning and preparedness for commercial nuclear power plants. This approval is contingent, in part, on State and local governments' participation in joint exercises with licensees.

FEMA's responsibilities in radiological emergency planning for fixed nuclear facilities include the following:

- Taking the lead in offsite emergency planning and in the review and evaluation of plans and procedures developed by State and local governments;
- Determining whether such plans and procedures can be implemented on the basis of the evaluation of the plans and procedures conducted by State and local governments;
- Responding to requests by the U.S. Nuclear Regulatory Commission (NRC) pursuant to the Memorandum of Understanding between the NRC and FEMA dated June 17, 1993 (Federal Register, Vol. 58, No. 176, September 14, 1993); and
- Coordinating the activities of Federal agencies with responsibilities in the radiological emergency planning process:
 - U.S. Department of Commerce,
 - U.S. Nuclear Regulatory Commission,
 - U.S. Environmental Protection Agency,
 - U.S. Department of Energy,
 - U.S. Department of Health and Human Services,
 - U.S. Department of Transportation,
 - U.S. Department of Agriculture,
 - U.S. Department of the Interior, and
 - U.S. Food and Drug Administration.

Representatives of these agencies serve on the FEMA Region V Regional Assistance Committee (RAC), which is chaired by FEMA.

Formal submission of the plans, for the Enrico Fermi 2 Nuclear Power Plant to FEMA Region V by the State of Michigan and involved local jurisdictions, occurred on

March 22, 1982. Formal approval of these plans was granted by FEMA on March 9, 1987, under 44 CFR 350.

A REP exercise was conducted on October 25, 2000 by FEMA Region V to assess the capabilities of State and local off site emergency preparedness organizations in implementing their plans and procedures to protect the public health and safety during a radiological emergency involving the Enrico Fermi 2 Nuclear Power Plant. The purpose of this exercise report is to present the exercise results and findings on the performance of the offsite response organizations (ORO) during a simulated radiological emergency.

The findings presented in this report are based on the evaluations of the Federal evaluator team, with final determinations made by the FEMA Region V RAC Chairperson and approved by the Regional Director.

The criteria utilized in the FEMA evaluation process are contained in:

- NUREG-0654/FEMA-REP-1, Rev. 1, "*Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants*," November 1980;
- FEMA-REP-14, "*Radiological Emergency Preparedness Exercise Manual*," September 1991; and
- FEMA-REP-15, "*Radiological Emergency Preparedness Exercise Evaluation Methodology*," September 1991.

Section III of this report, entitled "Exercise Overview," presents basic information and data relevant to the exercise. This section of the report contains a description of the plume pathway EPZ, a listing of all participating jurisdictions and functional entities that were evaluated, and a tabular presentation of the time of actual occurrence of key exercise events and activities.

Section IV of this report, entitled "Exercise Evaluation and Results," presents detailed information on the demonstration of applicable exercise objectives at each jurisdiction or functional entity evaluated in a jurisdiction-based, issues only format. This section also contains, if applicable: (1) descriptions of all Deficiencies and ARCAs assessed during this exercise, recommended corrective actions, and the State and local governments' schedule of corrective actions for each identified exercise issue and (2) descriptions of unresolved ARCAs assessed during previous exercises and the status of the OROs' efforts to resolve them.

III. EXERCISE OVERVIEW

Contained in this section are data and basic information relevant to the October 25, 2000, exercise to test the offsite emergency response capabilities in the area surrounding the Enrico Fermi 2 Nuclear Power Plant. This section of the exercise report includes a description of the plume pathway EPZ, a listing of all participating jurisdictions and functional entities, which were evaluated, and a tabular presentation of the time of the actual occurrence of key exercise events and activities.

A. Plume Emergency Planning Zone Description

The Enrico Fermi 2 Nuclear Power Plant comprises approximately 1,120 acres of land owned by the Detroit Edison Company (Edison). The site is bounded on the north by Swan Creek, on the east by Lake Erie, on the south by Pointe Aux Peaux Road and on the west by Toll Road. Entrance to the site is from Enrico Fermi Drive (a private road owned by Edison) to the west, and from Pointe Aux Peaux Road to another private road owned by Edison to the south. The plant is approximately 8 miles east-northeast of Monroe, Michigan; 30 miles southwest of downtown Detroit, Michigan; and, 25 miles northeast of downtown Toledo, Ohio. The latitude of the site is 41°48'57" north and the longitude is 83°31'15" west.

The plant consists of a boiler water reactor that generates about 1,075 megawatts of electric power. The plant license was issued on July 15, 1985; commercial operations began on January 23, 1988.

Large lagoons dominate the northern and southern portions of the site. The western portion includes several wooded areas and quarry lakes. Site elevation ranges from Lake Level on the East Side to about 25 feet above Lake Level on the West Side.

The primary 10-mile EPZ includes parts of Monroe and Wayne counties in Michigan; part of Lake Erie; and the southern tip of Essex County, Canada. Most of the 10-mile EPZ lies within Monroe County. The following jurisdictions are located within the EPZ: Monroe County, Monroe City, Ash Township, Carleton Village, Berlin Township, Estral Beach Village, Exeter Township, South Rockwood Village, Frenchtown Township, Rainsville Township, Gibraltar City, Flat Rock City, and Rockwood City. The population in the 10-mile EPZ, including both permanent and seasonal residents, is 109,937 during the summer and 121,367 during winter.

The 50-mile EPZ consists of portions of the Provinces of Ontario and Quebec in Canada and the following Michigan counties: Lenawee, Livingston, Macomb, Monroe, Oakland, Washtenaw, and Wayne; and the Ohio counties of Erie, Fulton, Lucas, Ottawa, Sandusky, and Wood. The population within the 50-mile EPZ is estimated at 5,327,000.

Land use within the EPZ is diverse. About 55 percent of the land is farmland; the majority of agricultural land is located in Monroe County. The portion of Wayne

County nearest to Detroit is a growing residential suburb. Twelve state parks and recreational areas (with campgrounds and cottages), two agricultural labor camps, and several light industries are located within the 10-mile EPZ.

B. Exercise Participants

The following agencies, organizations, and units of government participated in the Enrico Fermi 2 Nuclear Power Plant exercise on October 25, 2000.

STATE OF MICHIGAN

Michigan State Police, Emergency Management Division
Michigan Department of Environmental Quality,
Radiological Protection Section

RISK JURISDICTIONS (MICHIGAN)

MONROE COUNTIES

Monroe County Emergency Management
Michigan State Police, County Liaison
Monroe County Fire Department
Monroe County Sheriff's Department
Monroe County Department of Social Services
Monroe County Damage Assessment
Monroe County Department of Public Health
Monroe County School District
Detroit Edison Utility Liaison

WAYNE COUNTY

Wayne County Emergency Management
Wayne County Department of Public Health
Wayne County Department of Social Services
Wayne County Damage Assessment
Wayne County School District
Wayne County Department of Transportation
Wayne County Fire Department
Wayne County Sheriff's Department

SUPPORT JURISDICTIONS (MICHIGAN)

None

PRIVATE/VOLUNTEER ORGANIZATIONS (MICHIGAN)

American Red Cross
WJR AM Radio Station
Radio Amateur Communications Emergency Service (RACES)

C. Exercise Timeline

Table 1, on the following page, presents the time at which key events and activities occurred during the Enrico Fermi 2 Nuclear Power Plant exercise held on October 25, 2000. Also included are the times that notifications were made to the participating jurisdiction/functional entities.

TABLE 1. EXERCISE TIMELINE

DATE AND SITE: *October 25, 2000, Enrico Fermi II Nuclear Power Plant*

Emergency Classification Level or Event	Time Utility Declared	STATE	Monroe	Wayne	JPIC
		EOC			
Unusual Event	0830	0841	0837	0837	1005
Alert	0854	0903	0859	0857	1005
Site Area Emergency	0936	0950	0951	0954	1005
General Emergency	1018	1032	1043	1040	1040
Simulated Radiation Release Started	1150	1205	1210	1208	1208
Simulated Radiation Release Terminated	1236	1236	1245	-	1300
Facility Declared Operational		0919	0947	0925	1020
Declaration of State of Emergency		1012	1010	1018	1027
Exercise Terminated : Plume Pathway Phase		1305	1328	1308	1302
1st Protection Action Order EVAC Area 1 and 2, Shelter 3, 4, and 5, and Lake (5 miles)		1032	1045	1040	1055
1st Siren Activation		N/A	1049	1049	1049
1st EAS/EBS Message		N/A	N/A	1053	1053
AG Advisory: Shelter Livestock Stored Feed and Well Water		N/A	1058	N/A	N/A
2nd Protection Action Order EVAC Area 1, 2, 3, 4, 5, and the Lake (10 miles)		1120	1130	1125	1145
2nd Siren Activation		N/A	1132	1131	N/A
2nd EAS/EBS Message		N/A	N/A	1138	N/A
KI Administration Decision: All Emergency Workers		1228	1235	1235	N/A

IV. EXERCISE EVALUATION AND RESULTS

Contained in this section are the results and findings of the evaluation of all jurisdictions and functional entities that participated in the October 25, 2000, exercise to test the offsite emergency response capabilities of State and local governments in the 10-mile EPZ surrounding the Enrico Fermi 2 Nuclear Power Plant.

Each jurisdiction and functional entity was evaluated on the basis of its demonstration of criteria contained in exercise objectives delineated in FEMA-REP-14, REP Exercise Manual, September 1991. Detailed information on the exercise objectives and the extent-of-play agreement for this exercise is found in Appendix 3 of this report.

A. Summary Results of Exercise Evaluation

The matrix presented in Table 2, on the following page(s), presents the status of all exercise objectives from FEMA-REP-14, which were scheduled for demonstration during this exercise at all participating jurisdictions and functional entities. Exercise objectives are listed by number and the demonstration status of those objectives is indicated by the use of the following letters:

- M - Met (No Deficiency or ARCAs assessed and no unresolved ARCAs from prior exercises)
- D - Deficiency assessed
- A - ARCA(s) assessed or unresolved ARCA(s) from prior exercise(s)
- N - Not Demonstrated (Reason explained in Subsection B)
- C - Credit

Table 2. Summary Results of 2000 Exercise Evaluation

DATE AND SITE: *October 25, 2000, Enrico Fermi 2 Nuclear Power Plant*

JURISDICTIONS/LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33		
STATE OF MICHIGAN																																			
EMERGENCY OPERATIONS CENTER	M	M	M	M			M		M	M	M	M		M			C						M												
JOINT PUBLIC INFORMATION CENTER		M		M								M																							
FIELD TEAM CENTER		M		M	M		M							M																					
HEALTH PHYSICS RESPONSE TEAM # 1 (HPRT)					M	M		M						M																					
HEALTH PHYSICS RESPONSE TEAM # 2 (HPRT)					M	M		M						M																					
HEALTH PHYSICS RESPONSE TEAM # 3 (HPRT)					M	M		M						M																					
RISK JURISDICTIONS:																																			
MONROE COUNTY																																			
EMERGENCY OPERATIONS CENTER		M	M	M	M						M	M	M		M	M	M																		
INITIAL NOTIFICATION POINT (Monroe County Central Dispatch)	M																																		
DOSIMETRY DISTRIBUTION (County Environmental Health Department)					M									M																					
EMERGENCY WORKER MON./DECON. CENTER (County Fairgrounds)					M									M									M												
PUBLIC RECEPTION MON./DECON. CENTER (Dundee High School)					M									M						M															
CONGREGATE CARE CENTER (Dundee High School)																							M												
TRAFFIC AND ACCESS CONTROL					M																		M												
JOINT PUBLIC INFORMATION CENTER - COUNTY														M																					
PROTECTIVE ACTIONS-SCHOOLS (Jefferson District)					M												M																		

LEGEND:

M = Met (No Deficiency or ARCA(s) assessed and no unresolved ARCAs from prior exercises)
 N = Not demonstrated as scheduled (reason explained in Section IV.B.)

A = ARCA(s) assessed or unresolved ARCA(s) from prior exercise(s) D = Deficiency(ies) assessed
 Blank = Not scheduled for demonstration C = Credit

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B. Status of Jurisdictions Evaluated

This subsection provides information on the evaluation of each participating jurisdiction and functional entity, in a jurisdiction based, issues-only format. Presented below is a definition of the terms used in this subsection relative to objective demonstration status.

- **Met** - Listing of the demonstrated exercise objectives under which no Deficiencies or ARCAs were assessed during this exercise and under which no ARCAs assessed during prior exercises remain unresolved.
- **Deficiency** - Listing of the demonstrated exercise objectives under which one or more Deficiencies were assessed during this exercise. Included is a description of each Deficiency and recommended corrective actions.
- **Area Requiring Corrective Action** - Listing of the demonstrated exercise objectives under which one or more ARCAs were assessed during the current exercise or ARCAs assessed during prior exercises remain unresolved. Included is a description of the ARCAs assessed during this exercise and the recommended corrective action to be demonstrated before or during the next biennial exercise.
- **Not Demonstrated** - Listing of the exercise objectives which were not demonstrated as scheduled during this exercise and the reason they were not demonstrated.
- **Prior ARCAs - Resolved** - Description of ARCAs assessed during previous exercises, which were resolved in this exercise, and the corrective actions demonstrated.
- **Prior ARCAs - Unresolved** - Description of ARCAs assessed during prior exercises which were not resolved in this exercise. Included is the reason the ARCAs remains unresolved and recommended corrective actions to be demonstrated before or during the next biennial exercise.

The following are definitions of the two types of exercise issues which are discussed in this report.

- A **Deficiency** is defined in FEMA-REP-14 as "...an observed or identified inadequacy of organizational performance in an exercise that could cause a finding that offsite emergency preparedness is not adequate to provide reasonable assurance that appropriate protective measures can be taken in the event of a radiological emergency to protect the health and safety of the public living in the vicinity of a nuclear power plant."

- An **ARCA** is defined in FEMA-REP-14 as "...an observed or identified inadequacy of organizational performance in an exercise that is not considered, by itself, to adversely impact public health and safety."

FEMA has developed a standardized system for numbering exercise issues (Deficiencies and ARCAs). This system is used to achieve consistency in numbering exercise issues among FEMA Regions and site-specific exercise reports within each Region. It is also used to expedite tracking of exercise issues on a nationwide basis.

The identifying number for Deficiencies and ARCAs includes the following elements, with each element separated by a hyphen (-).

- **Plant Site Identifier** - A two-digit number, corresponding to the Utility Billable Plant Site Codes.
- **Exercise Year** - The last two-digits of the year the exercise was conducted.
- **Objective Number** - A two-digit number corresponding to the objective numbers in FEMA-REP-14.
- **Issue Classification Identifier** - (D = Deficiency, A = ARCA). Only Deficiencies and ARCAs are included in exercise reports.
- **Exercise Issue Identification Number** - A separate two (or three) digit indexing number assigned to each issue identified in the exercise.

1. STATE OF MICHIGAN

1.1 State Emergency Operations Center

- a. MET: Objectives 1, 2, 3, 4, 7, 9, 10, 11, 12, 14, and 23.
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ARCAs - RESOLVED: NONE
- f. PRIOR ARCAs - UNRESOLVED: NONE

1.2 Joint Public Information Center

- a. MET: Objectives 2, 4, and 12
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ARCAs - RESOLVED: NONE
- f. PRIOR ARCAs - UNRESOLVED: NONE

1.3 Field Team Center

- a. MET: Objectives: 2, 4, 5, 7 and 14
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ARCAs - RESOLVED: NONE
- f. PRIOR ARCAs - UNRESOLVED: NONE

1.4 Health Physics Response Team # 1

- a. MET: Objectives: 5, 6, 8 and 14
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ARCAs - RESOLVED: NONE
- f. PRIOR ARCAs - UNRESOLVED: NONE

1.5 Health Physics Response Team #2

- a. MET: Objectives: 5, 6, 8 and 14
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ARCAs - RESOLVED: NONE
- f. PRIOR ARCAs - UNRESOLVED: NONE

1.6 Health Physics Response Team #3

- a. MET: Objectives: 5, 6, 8 and 14
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ARCAs - RESOLVED: NONE
- f. PRIOR ARCAs - UNRESOLVED: NONE

2. RISK JURISDICTIONS (MICHIGAN)

2.1 MONROE COUNTY

2.1.1 Emergency Operations Center

- a. MET: Objectives 1, 2, 3, 4, 5, 10, 11, 12, 14, 15, and 16
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ARCAs - RESOLVED: NONE
- f. PRIOR ARCAs - UNRESOLVED: NONE

2.1.2 Initial Notification (Monroe County Central Dispatch)

- a. MET: Objective 1
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ARCAs - RESOLVED: NONE
- f. PRIOR ARCAs - UNRESOLVED: NONE

2.1.3 Dosimetry Distribution (Monroe County Environmental Health Department)

- a. MET: Objectives 5 and 14
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ARCAs - RESOLVED: NONE
- f. PRIOR ARCAs - UNRESOLVED: NONE

2.1.4 Emergency Worker Monitoring and Decontamination Center (County Fair Grounds)

- a. MET: Objectives 5, 14 and 22
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ARCAs - RESOLVED: NONE
- f. PRIOR ARCAs - UNRESOLVED: NONE

2.1.5 Public Reception, Monitoring, and Decontamination Center (Dundee High School)

- a. MET: Objectives 5, 14 and 18
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ARCAs - RESOLVED: NONE
- f. PRIOR ARCAs - UNRESOLVED: NONE

2.1.6 Congregate Care Center

- a. MET: Objective 19
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: Objective 19
- e. PRIOR ARCAs - RESOLVED: NONE
- f. PRIOR ARCAs - UNRESOLVED: NONE

2.1.7 Traffic/Access Control

- a. MET: Objectives 5 and 14
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ARCAs - RESOLVED: NONE
- f. PRIOR ARCAs - UNRESOLVED: NONE

2.1.8 Joint Public Information Center - County

- a. MET: Objective 13
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ARCAs - RESOLVED: NONE
- f. PRIOR ARCAs - UNRESOLVED: NONE

2.1.9 Protective Actions - Schools (Jefferson District Schools)

- a. MET: Objectives 5 and 16
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ARCAs - RESOLVED: NONE
- f. PRIOR ARCAs - UNRESOLVED: NONE

2.2 WAYNE COUNTY

2.2.1 Emergency Operations Center

- a. **MET: Objectives 1, 2, 3, 4, 5, 10, 11, 13 and 15**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ARCAs - RESOLVED: NONE**
- f. **PRIOR ARCAs - UNRESOLVED: NONE**

2.2.2 Initial Notification

- a. **MET: Objective 1**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ARCAs - RESOLVED: NONE**
- f. **PRIOR ARCAs - UNRESOLVED: NONE**

2.2.3 Dosimetry Distribution (Brownstown Fire Station #4)

- a. **MET: Objectives 5 and 14**
- b. **DEFICIENCY: NONE**
- b. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ARCAs - RESOLVED: NONE**
- f. **PRIOR ARCAs - UNRESOLVED: NONE**

**2.2.4 Emergency Worker Monitoring and Decontamination Center
(Brownstown Fire Station #4)**

- a. MET: Objective 14 and 22
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ISSUES: NONE
- f. PRIOR ARCAs - UNRESOLVED: NONE

2.2.5 Public Reception, Monitoring, and Decontamination Center (Taylor Center)

- a. MET: Objectives 4, 5, 14 and 18
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ARCAs - RESOLVED: NONE
- f. PRIOR ARCAs - UNRESOLVED: NONE

2.2.6 Congregate Care Center (Taylor Center)

- a. MET: Objectives 5, 14, 18 and 19
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ARCAs - RESOLVED: NONE
- f. PRIOR ARCAs - UNRESOLVED: NONE

2.2.7 Traffic/Access Control

- a. MET: Objectives 14 and 17
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ARCAs - RESOLVED: NONE
- f. PRIOR ARCAs - UNRESOLVED: NONE

2.2.8 Joint Public Information Center—County

- a. MET: Objectives 12 and 13
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ARCAs - RESOLVED: NONE
- f. PRIOR ARCAs - UNRESOLVED: NONE

2.2.9 Protective Actions—Schools (Flat Rock School District)

- a. MET: Objectives 4, 5, 14 and 16
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ARCAs - RESOLVED: NONE
- f. PRIOR ARCAs - UNRESOLVED: NONE

2.2.10 Emergency Broadcast System – Radio Station WJR Detroit

- a. MET: Objective 11**
- b. DEFICIENCY: NONE**
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. NOT DEMONSTRATED: NONE**
- e. PRIOR ARCAs - RESOLVED: NONE**
- f. PRIOR ARCAs - UNRESOLVED: NONE**

APPENDIX 1

ACRONYMS AND ABBREVIATIONS

The following is a list of the acronyms and abbreviations that were used in this report.

A&N	Alert and Notification
ANL	Argonne National Laboratory
ARCA	Area Requiring Corrective Action
CFR	Code of Federal Regulations
CPM	Count Per minute
DRD	Direct Reading Dosimeter
EAS	Emergency Alerting System
EBS	Emergency Broadcast System
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EPZ	Emergency Planning Zone
EV-2	FEMA Guidance Memorandum EV-2, <i>Protective Actions for School Children</i> , November 13, 1986
FEMA	Federal Emergency Management Agency
FTC	Field Team Center
JPIC	Joint Public Information Center
KI	Potassium Iodide
KLT	K.L. Travis and Associates, Inc.
mR/hr	milliRoentgen per hour
NRC	U.S. Nuclear Regulatory Commission
NUREG-0654	NUREG-0654/FEMA-REP-1, Rev. 1, <i>Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants</i> , November 1980
ORO	Offsite Response Organization
PAD	Protective Action Decision
PAR	Protective Action Recommendation
R	Roentgen

RAC	Regional Assistance Committee
REP	Radiological Emergency Preparedness
RERP	Radiological Emergency Response Plan
RRT	Radiological Response Team
TL	Team Leader
TLD	Thermoluminescent Dosimeter

APPENDIX 2

EXERCISE EVALUATORS AND TEAM LEADERS

The following is a list of the personnel who evaluated the Enrico Fermi 2 Nuclear Power Plant exercise on October 25, 2000. Team Leaders are indicated by the letters "(TL)" after their names. The organization which each evaluator represents is indicated by the following abbreviations:

FEMA - Federal Emergency Management Agency
 ANL - Argonne National Laboratory

Regional Assistance Committee Chair	Woodie Curtis	FEMA
Exercise Director	Woodie Curtis	FEMA

<u>EVALUATION SITE</u>	<u>EVALUATOR</u>	<u>ORGANIZATION</u>
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STATE OF MICHIGAN

EOC	C. Lloyd (TL)	FEMA
	R. Hatcher	FHA
	R. Grundstrom	KTL
FTC	D. Thome'	ANL
	K. Barrett	USDA
Field Teams	H. Harrison	ANL
	K. Flynn	ANL
	C. Herzenberg	ANL
Joint Public Information Center (State)	C. Saricks	ANL
	S. Curtis	ANL

MONROE COUNTY

County Emergency Operations Center	G. Naskrent (TL)	FEMA
	B. Pfaff	FEMA
	L. Poch	ANL
County Initial Notification Point Dosimetry Distribution	G. Naskrent	FEMA
	S. Sturghill	FEMA
Emergency Worker Decontamination	B. Murphy	FEMA
	L. Poch	ANL
	H. Harrison	ANL
Public Reception, Monitoring and Decon.	C. Crackel	FEMA
	B. Pfaff	FEMA
Congregate Care Center	G. Naskrent	FEMA
	A. Birman	FEMA

EVALUATION SITE	EVALUATOR	ORGANIZATION
Traffic/Access Control Point	L. Poch	ANL
Emergency Broadcast System (EAS/EBS)	C. Crackel	FEMA
	T. Connors-Murphy	FEMA
Joint Public Information Center (County)	C. Saricks	ANL
Rumor Control	S. Curtis	ANL
Protective Actions – Schools	G. Naskrent	FEMA

WAYNE COUNTY

County Emergency Operations Center	T. Connors-Murphy (TL)	FEMA
	A. Birman	FEMA
	R. Smith	ANL
County Initial Notification Point	T. Connors-Murphy	FEMA
Dosimetry Distribution	J. Austin	ANL
Emergency Worker Decontamination	J. Austin	ANL
Public Reception, Monitoring and Decon.	B. Pfaff	FEMA
	C. Crackel	FEMA
	T. Connors-Murphy	FEMA
Congregate Care Center	G. Naskrent	FEMA
	R. Smith	ANL
Traffic/Access Control Point	B. Lueders	ANL
Joint Public Information Center (County)	S. Curtis	ANL
Rumor Control	B. Pfaff	FEMA
Protective Actions – Schools		

APPENDIX 3

EXERCISE OBJECTIVES AND EXTENT-OF-PLAY AGREEMENT

This appendix lists the exercise objectives that were scheduled for demonstration in the Enrico Fermi 2 Nuclear Power Plant exercise on October 25, 2000 and the extent-of-play agreement approved by FEMA Region V on September 15, 2000.

The exercise objectives, contained in FEMA-REP-14, "Radiological Emergency Preparedness Exercise Evaluation Methodology," September 1991, represent a functional translation of the planning standards and evaluation criteria of NUREG-0654/FEMA-REP-1, Rev. 1, "Criteria for the Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980.

Because the exercise objectives are intended for use at all nuclear power plant sites, and because of variations among offsite plans and procedures, an extent-of-play agreement is prepared by the State and approved by FEMA to provide evaluators with guidance on expected actual demonstration of the objectives.

Exercise Objectives and Extent-of-Play Agreement

Listed below are the specific REP objectives scheduled for demonstration during this exercise.

GROUP A OBJECTIVES

These objectives should be demonstrated in every biennial exercise by all Offsite Response Organizations (OROs) that have responsibility for them.

OBJECTIVE 1: MOBILIZATION OF EMERGENCY PERSONNEL

Demonstrate the capability to alert and fully mobilize personnel for both emergency facilities and field operations. Demonstrate the capability to activate and staff emergency facilities for emergency operations.

State of Michigan:	Yes
Monroe County	Yes
Wayne County	Yes

Extent of Play:

Personnel at the Monroe County EOC will demonstrate alert, mobilization, and activation in sequence with the exercise. Monroe County will also demonstrate alert, mobilization, and activation of JPIC personnel. Alert, mobilization, and activation procedures can be observed at the sheriff department.

Wayne County EOC and JPIC personnel will be pre-positioned. Pending FEMA approval, this objective will be demonstrated but not evaluated.

The State demonstrated this objective for the SEOC for the Palisades Exercise on June 6-7, 2000. The state will demonstrate this objective with sufficient staff to insure successful completion of the selected exercise objectives. The state will provide, to the FEMA evaluators, current rosters for those positions not staffed.

All personnel involved in county emergency worker decontamination centers; public reception/decontamination and congregate care centers will be pre-positioned at their facilities/locations

No individual will serve as a player in more than one location.

OBJECTIVE 2: FACILITIES - EQUIPMENT, DISPLAYS, AND WORK ENVIRONMENT

Demonstrate the adequacy of facilities, equipment, displays, and other materials to support emergency operations.

State of Michigan:	Yes
Monroe County	Yes
Wayne County	Yes

Extent of Play:

This objective will include the demonstration of the setup of the Field Team Center, but not the state emergency worker decontamination center at the FTC, which was demonstrated during the Palisades exercise on June 6-7, 2000.

The Monroe and Wayne County EOCs are permanently set up as is the SEOC. Pending FEMA approval this objective will be demonstrated but not evaluated.

Utility personnel will set up the JPIC in advance of the exercise.

OBJECTIVE 3: DIRECTION AND CONTROL

Demonstrate the capability to direct and control emergency operations.

State of Michigan:	Yes
Monroe County:	Yes
Wayne County:	Yes

Pending FEMA approval, this objective will be demonstrated but not be evaluated for Wayne County.

OBJECTIVE 4: COMMUNICATIONS

Demonstrate the capability to communicate with all appropriate emergency personnel at facilities and in the field.

State of Michigan:	Yes
Monroe County	Yes
Wayne County	Yes

Extent of Play:

Pending FEMA approval, this objective will be demonstrated but not be evaluated for Wayne County.

OBJECTIVE 5: EMERGENCY WORKER EXPOSURE CONTROL

Demonstrate the ability to continuously monitor and control radiation exposure to emergency workers.

State of Michigan:	Yes
Monroe County	Yes
Wayne County	Yes

Extent of Play:

Dosimetry will be distributed to personnel for access control point demonstrations in Monroe and Wayne Counties in sequence at the respective EOC's. County Emergency Worker Decontamination Center and Public Reception/Decontamination Centers will be demonstrated out of sequence and will be provided dosimetry at the time of the demonstration.

Personnel assigned to field teams and the Field Team Center (FTC) will receive dosimetry from the FTC.

OBJECTIVE 6: FIELD RADIOLOGICAL MONITORING - AMBIENT RADIATION

Demonstrate the appropriate use of equipment and procedures for determining field radiation measurements.

State of Michigan:	Yes
Monroe County	N/A
Wayne County	N/A

OBJECTIVE 7: PLUME DOSE PROJECTION

Demonstrate the capability to develop dose projections and protective action recommendations regarding evacuation and sheltering.

State of Michigan:	Yes
Monroe County	N/A
Wayne County	N/A

OBJECTIVE 8: FIELD RADIOLOGICAL MONITORING - AIRBORNE RADIOIODINE AND PARTICULATE ACTIVITY MONITORING

Demonstrate the appropriate use of equipment and procedures for the measurement of airborne radioiodine concentrations as low as 10^{-7} (0.0000001) microcuries per cubic centimeter in the presence of noble gases and obtain samples of particulate activity in the airborne plume.

State of Michigan:	Yes
Monroe County	N/A
Wayne County	N/A

OBJECTIVE 9: PLUME PROTECTIVE ACTION DECISION MAKING

Demonstrate the capability to make timely protective action decisions (PADs).

State of Michigan:	Yes
Monroe County	N/A
Wayne County	N/A

OBJECTIVE 10: ALERT AND NOTIFICATION

Demonstrate the capability to promptly alert and notify the public within the 10-mile plume pathway emergency planning zone (EPZ) and disseminate instructional messages to the public on the basis of decisions by appropriate state and local officials.

State of Michigan:	Yes
Monroe County	Yes
Wayne County	Yes

Extent of Play:

Under current county plans, both Monroe and Wayne Counties activate sirens for their portions of the primary EPZ. EBS (EAS) activation will be done from Wayne County, with Monroe County supporting this activity by providing the Wayne County EOC with the appropriate information for inclusion in the EBS (EAS) message. Wayne County will then prepare the message and forward it to the EBS (EAS) station (WJR, Detroit) for simulated broadcast. Both counties will simulate activation of their portions of the siren system by talking through the steps necessary with the FEMA evaluator after activation simulation is complete.

OBJECTIVE 11: PUBLIC INSTRUCTIONS AND EMERGENCY INFORMATION

Demonstrate the capability to coordinate the formulation and dissemination of accurate information and instructions to the public.

State of Michigan	Yes (JPIC Only)
Monroe County	Yes
Wayne County	Yes

Extent of Play:

This objective will be demonstrated through EAS announcements from the Wayne County EOC and at the JPIC. (Also, see Objective 10 Extent of Play.)

OBJECTIVE 12: EMERGENCY INFORMATION - MEDIA

Demonstrate the capability to coordinate the development and dissemination of clear, accurate, and timely information to the news media at the JPIC.

State of Michigan	Yes
Monroe County	Yes
Wayne County	Yes

OBJECTIVE 13: EMERGENCY INFORMATION - RUMOR CONTROL

Demonstrate the capability to establish and operate rumor control in a coordinated and timely manner.

State of Michigan	Yes
Monroe County	Yes
Wayne County	Yes

Extent of Play:

Rumor Control for Enrico Fermi 2 is located at the Joint Public Information Center and is staffed by Monroe County. Trending is performed by the Rumor Control Manager, who also ensures appropriate information is provided to the rumor control operators. Rumor control staff will demonstrate alert and notification.

GROUP B OBJECTIVES

These objectives should be demonstrated in every biennial exercise by some OROs. Specific participation is dependent on scenario events and exercise play. Should be demonstrated every six years by the responsible ORO.

OBJECTIVE 14: IMPLEMENTATION OF PROTECTIVE ACTIONS - USE OF KI FOR EMERGENCY WORKERS, INSTITUTIONALIZED INDIVIDUALS

Demonstrate the capability and resources to implement potassium iodide (KI) protective actions for emergency workers, institutionalized individuals, and, if the State Plan specifies, the general public.

State of Michigan	Yes
Monroe County	Yes
Wayne County	Yes

Extent of Play:

KI will be distributed to county and state emergency workers along with their dosimetry. The State will also demonstrate this objective through decision-making and orders to the Field Team Center and counties to ingest KI.

OBJECTIVE 15: IMPLEMENTATION OF PROTECTIVE ACTIONS - SPECIAL POPULATIONS

Demonstrate the capability and resources necessary to implement appropriate protective actions for special populations.

State of Michigan	N/A
Monroe County	Yes
Wayne County	Yes

Extent of Play:

Lists of transportation dependent and special needs populations are kept by both Monroe and Wayne Counties. No personnel will be moved. Equipment lists and rosters will be available in the county EOCs.

OBJECTIVE 16: IMPLEMENTATION OF PROTECTIVE ACTIONS - SCHOOLS

Demonstrate the capability and resources necessary to implement protective actions for school children within the plume pathway emergency planning zone (EPZ).

State of Michigan	No
Monroe County	Yes
Wayne County	Yes

Extent of Play:

EV-2 interview arrangements will be provided in the Table of Facilities submitted with the exercise scenario. There will be no EOC demonstration of this objective.

OBJECTIVE 17: TRAFFIC AND ACCESS CONTROL

Demonstrate the organizational capability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas.

State of Michigan	Yes
Monroe County	Yes
Wayne County	Yes

Extent of Play:

Monroe and Wayne Counties will each demonstrate one Access Control Point in sequence with the exercise.

The state has requested that this objective not be evaluated based on actions taken during the June gasoline spill in Jackson County.

OBJECTIVE 18: RECEPTION CENTER - MONITORING, DECONTAMINATION, AND REGISTRATION

Demonstrate the adequacy of procedures, facilities, equipment, and personnel for the radiological monitoring, decontamination, and registration of evacuees.

State of Michigan	Yes
Monroe County	Yes
Wayne County	Yes

Extent of Play:

Monroe and Wayne Counties will each fully demonstrate a reception center out of sequence with the exercise.

State DEQ HP personnel will provide assistance as requested during Monroe and Wayne County demonstrations.

OBJECTIVE 19: CONGREGATE CARE

Demonstrate the adequacy of facilities, equipment, supplies, personnel, and procedures for congregate care of evacuees.

State of Michigan	No
Monroe County	Yes
Wayne County	Yes

Extent of Play:

Monroe and Wayne Counties will each fully demonstrate a congregate care center out of sequence with the exercise.

OBJECTIVE 20: MEDICAL SERVICES - TRANSPORTATION

Demonstrate the adequacy of vehicles, equipment, procedures, and personnel for transporting contaminated, injured, or exposed individuals.

State of Michigan	No
Monroe County	Yes (Conducted March 8, 2000)
Wayne County	Yes (Conducted March 8, 2000)

OBJECTIVE 21: MEDICAL SERVICES - FACILITIES

Demonstrate the adequacy of the equipment, procedures, supplies, and personnel of medical facilities responsible for treatment of contaminated, injured, or exposed individuals.

State of Michigan	Yes (Conducted March 8, 2000)
Monroe County	No
Wayne County	Yes (Conducted March 8, 2000)

OBJECTIVE 22: EMERGENCY WORKERS, EQUIPMENT, AND VEHICLES - MONITORING AND DECONTAMINATION

Demonstrate the adequacy of procedures for monitoring and decontamination of emergency workers, equipment, and vehicles.

State of Michigan	Yes
Monroe County	Yes
Wayne County	Yes

Extent of Play:

Monroe and Wayne Counties will each fully demonstrate an emergency worker decontamination center out of sequence with the exercise.

State DEQ HP personnel will provide assistance to the county as requested during demonstrations. The demonstrated this objective on June 7, 2000 during the Palisades Exercise at the Field Team Center and will not perform emergency worker decontamination at the FTC.

OBJECTIVE 23: SUPPLEMENTARY ASSISTANCE (FEDERAL/OTHER)

Demonstrate the capability to identify the need for external assistance and to request such assistance from federal or other support organizations.

State of Michigan	Yes
Monroe County	N/A
Wayne County	N/A

Extent of Play:

The SEOC will notify the FEMA V Regional Duty Officer and request assistance through the DOE Region V RAP in Argonne, Illinois and/or the NRC Operations Center in Rockville, Maryland.

GROUP C OBJECTIVES

These objectives should be demonstrated at least once every six years by each organization with responsibility for them as determined by the organization's plans and procedures.

OBJECTIVE 24: POST-EMERGENCY SAMPLING

Demonstrate the use of equipment and procedures for the collection and transportation of samples from areas that received deposition from the airborne plume.

State of Michigan	No
Monroe County	N/A
Wayne County	N/A

OBJECTIVE 25: LABORATORY OPERATIONS

Demonstrate laboratory operations and procedures for measuring and analyzing samples.

State of Michigan	No
Monroe County	N/A
Wayne County	N/A

OBJECTIVE 26: INGESTION EXPOSURE PATHWAY - DOSE PROJECTION AND PROTECTIVE ACTION (PA) DECISION MAKING

Demonstrate the capability to project dose to the public for the ingestion exposure pathway and to recommend PAs.

State of Michigan	No
Monroe County	N/A
Wayne County	N/A

OBJECTIVE 27: INGESTION EXPOSURE PATHWAY - PROTECTIVE ACTION IMPLEMENTATION

Demonstrate the capability to implement protective actions for the ingestion exposure pathway.

State of Michigan	No
Monroe County	No
Wayne County	No

OBJECTIVE 28: RELOCATION, RE-ENTRY, AND RETURN - DECISION MAKING

Demonstrate the capability to develop decisions on relocation, re-entry, and return.

State of Michigan	No
Monroe County	N/A
Wayne County	N/A

OBJECTIVE 29: RELOCATION, RE-ENTRY, AND RETURN - IMPLEMENTATION

Demonstrate the capability to implement appropriate measures for relocation, re-entry, and return.

State of Michigan	No
Monroe County	No
Wayne County	No

OBJECTIVE 30: CONTINUOUS, 24-HOUR STAFFING

Demonstrate the capability to maintain staffing on a continuous, 24-hour basis through an actual shift change.

State of Michigan	No
Monroe County	No
Wayne County	No

OBJECTIVE 31: OFF-SITE SUPPORT FOR THE EVACUATION OF ON-SITE PERSONNEL

Demonstrate the capability to provide off-site support for the evacuation of on-site personnel.

State of Michigan	No
Monroe County	No
Wayne County	No

OBJECTIVE 32: UNANNOUNCED DRILL

Demonstrate the capability to carry out emergency response functions in an unannounced exercise or drill.

State of Michigan	No
Monroe County	No
Wayne County	No

OBJECTIVE 33: OFF-HOURS DRILL

Demonstrate the capability to carry out emergency response functions during an off-hours exercise or drill.

State of Michigan	No
Monroe County	No
Wayne County	No

APPENDIX 4

EXERCISE SCENARIO

This appendix contains a summary of the simulated sequence of events – Exercise Scenario -- that was used as the basis for invoking emergency response actions by OROs in the Enrico Fermi 2 Nuclear Power Plant exercise on October 25, 2000.

This exercise scenario was submitted by the State of Michigan and approved by FEMA Region V on September 18, 2000.

During the exercise, controllers from the State of Michigan gave “inject messages,” containing scenario events and/or relevant data, to those persons or locations who would normally receive notification of such events. These inject messages were the method used for invoking response actions by OROs.

EXERCISE SCOPE

This exercise will be a full participation exercise conducted at Fermi 2 during normal working hours on October 25, 2000. The date and approximate time of the exercise will be announced to all exercise participants in advance.

The State of Michigan, Wayne County and Monroe County will be participating. All onsite Emergency Response Facilities will be activated. The Joint Public Information Center (JPIC) will be activated.

The exercise will be conducted from the Fermi 2 Simulator Control Room, located on the second floor of the Nuclear Operations Center. The simulator will be preprogrammed with equipment malfunctions that will drive scenario events in accordance with a prescribed sequence. The dynamic simulator response to operator actions in the Simulator Control Room allows maximum free play by emergency responders.

SEQUENCE OF EVENTS

<u>TIME</u>	<u>KEY EVENTS</u>
0730	Commence turnover (message 1). Initial Conditions: Reactor operating at 98% power. SBFW (mini scenario 30A) is out of service for maintenance to (N2103-F001). Division 1 RHR (mini scenario 30B) is out of service for maintenance to E1150-F047A.
0800	Announcement for the start of the exercise (message 2).
0820	IPS Manual Scram Functional surveillance is in progress. A 1/2 scram occurs as part of the surveillance actions. Annunciator indications of the 1/2 SCRAM go away with no operator action. A loss of annunciators

occurs due to a blown fuse in panel 2PC3-17, circuit 16 (**mini scenario 30C**).

0835* **Nuclear Shift Supervisor declares an Unusual Event due to (SU3) loss of most Safety System Annunciation in the Control Room for greater than 15 minutes.**

0845* **A plant runback > 25% occurs.**

0850* **Nuclear Shift Supervisor declares an Alert due to (SA4) Unplanned loss of most all Safety System Annunciation in the Control Room with a Significant Transient Progress. Assembly and Accountability ordered.**

0920* OSC/TSC functional, Assembly and Accountability complete (**message 3**).

0925 Loss of Non-Interruptible Air Supply (**message 4**), (**mini scenario 30D**).

0930* Inboard MSIVs go closed resulting in a transient that results in exceeding a Reactor Protection System (RPS) setpoint. The required automatic reactor scram does not occur. Attempts to manually scram the reactor are also unsuccessful.

0935* Emergency Director declares a Site Area Emergency due to (**SS2**) Failure of Reactor Protection System Instrumentation to complete or initiate an Automatic Reactor Scram once a Reactor Protection System setpoint has been exceeded and Manual Scram was NOT successful. EOF and JPIC are activated.

0950* Control Rods drift into the core due to the blockage in scram discharge line clearing. Small break LOCA occurs in containment.

1015* Containment High Range Radiation Monitor (CHRRMs) reading is greater than 10,000 R/hr.

1020* Emergency Director declares a General Emergency due to loss of 3 fission product barriers (**FG1**). EOF and JPIC are activated. The expected PAR is: Evacuate Area 1, and Evacuate the downwind area to 5 miles.

1115* CHRRMs reading exceeds 67,000 R/hr. A **change in PAR** is required. The expected PAR is: Evacuate Areas 1, 2, and 3 and Evacuate the downwind area to 10 miles

1145* Failure of Primary Containment at the flange upstream of excess flow check valve B21-F506 (**mini scenario 30E**). Release to environment occurs.

1145 ERO takes actions to:
to end 1. Isolate the primary containment leak.

2. Restore reactor water level and stabilize the plant
3. Walkdown affected areas, and take actions to ensure no further damage occurs.

Exercise will be terminated when the following actions have been completed and all other objectives are demonstrated:

1330* Provide exercise termination announcement. (message 5).

Note: * Indicated times are based on Emergency Response Organization actions and are approximate.

EXERCISE DESCRIPTION

Initial Conditions

Reactor operating at 98% power. SBFW and Division 1 RHR are out of service for maintenance.

Active Malfunctions

Loss of Annunciators

Non-Interruptible Air Supply system leak

Reactor Core Injection Cooling (RCIC) steam leak in containment

Containment leak through B21-F506 flange

Release Paths

After the primary containment break, there is a release through the flange upstream of excess flow check valve B21-F506. The release will reach the environment through the Standby Gas Treatment System (SGTS).

Emergency Response Organization Activation

The plant runback without annunciators at 0845 requires an Alert declaration (SA4), resulting in activation of the Operations Support Center and the Technical Support Center.

A Site Area Emergency should be declared at approximately 0935 when The Emergency Director determines there was a failure of reactor protection instrumentation to complete or initiate an automatic scram and manual scram was not successful meeting conditions for a Site Area Emergency (SS2). This declaration will activate the Emergency Operations Facility and the Joint Public Information Center (simulated).

DATA

Radiation Monitors

Containment High Range Radiation Monitor (CHRRM)

If CHRRMs become unavailable, players should utilize PASS samples and EP-546 to estimate CHRRMs; Controllers see AB-1 survey map.

Effluent Monitor Readings

Unavailable for this scenario.

Area Radiation Monitors (ARM)

Monitor readings for all select building ARM channels are provided when necessary to reflect changing plant conditions. Values for channels not provided are "as read".

Meteorology

The simulator will generate data reflecting the onsite 60-meter Met Tower. Met data is provided to Controllers as a backup.