



Federal Emergency Management Agency

Region V

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

August 2, 2002

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

Dear Mr. Dyer:

Enclosed is the Final Report for the Radiological Emergency Preparedness Plume Pathway Exercise conducted on June 4, 2002, for the Palisades Nuclear Power Plant. Copies of this report were transmitted to the Nuclear Regulatory Commission National Office, the Federal Emergency Management Agency National Office, and the State of Michigan.

No Deficiencies were identified for any jurisdiction. Two Areas Requiring Corrective Action (ARCA) were identified during this exercise. The first ARCA was identified for the State of Michigan under Criterion 2.b.2 – Radiological Assessment and Protective Action Recommendations and Decisions for the Plume Phase of the Emergency. The second ARCA was for Allegan County under Criterion 6.b.1 – Monitoring and Decontamination of Emergency Worker Equipment. There was one prior ARCA for the State of Michigan identified under Criterion 5.b.1 - Emergency Information and Instructions for the Public and the Media, and two prior ARCAs for Allegan County identified under Criteria 1.c.1 - Direction and Control, and 3.c.1 - Implementation of Protective Actions for Special Populations. All three prior ARCAs were resolved during this exercise. A detailed description of each issue can be found in Part IV of the final report.

Based on the results of the June 4, 2002, exercise, the offsite radiological emergency response plans and preparedness for the State of Michigan, and the Counties of Van Buren, Allegan, and Berrien, site-specific to the Palisades Nuclear Power Plant, can be implemented. These plans are adequate to provide reasonable assurance that appropriate measures can be taken offsite to protect the health and safety of the public.

Therefore, Title 44 CFR, Part 350, approval of the offsite radiological emergency response plans and preparedness for the State of Michigan and the Counties of Van Buren, Allegan, and Berrien, granted on July 2, 1982, remains in effect.

If you have any questions, please let me know or have a member of your staff contact Woodie Curtis at (312) 408-5528.

Sincerely,

A handwritten signature in black ink, which appears to read "Edward G. Buikema".

Edward G. Buikema
Regional Director

Enclosure



Final Exercise Report

Palisades Nuclear Power Plant

Licensee: Nuclear Management Company

Exercise Date: June 4, 2002

Report Date: August 1, 2002

**FEDERAL EMERGENCY MANAGEMENT AGENCY
REGION V
536 S. Clark Street, 6th Floor
Chicago, IL 60605**

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1. EXECUTIVE SUMMARY

On June 4, 2002, an exercise was conducted in the plume exposure pathway emergency planning zones (EPZ) around the Palisades Nuclear Power Plant by the Federal Emergency Management Agency (FEMA), Region V. The purpose of this 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 (RERP's) and procedures.

The most recent exercise at this site was conducted on June 6-7, 2000. The qualifying emergency preparedness exercise was conducted on December 9, 1980.

FEMA wishes to acknowledge the efforts of the many individuals in the State of Michigan, Van Buren County, Allegan County, and Berrien County who participated in the exercise.

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.

This report contains the evaluation of the biennial exercise and the evaluation of the following out-of-sequence activities:

State of Michigan	Department of Environmental Quality Evacuee Vehicle Monitoring and Decontamination Evacuee Monitoring and Decontamination Emergency Worker/Vehicle Monitoring and Decontamination
Van Buren County	Dosimetry Distribution Point Evacuee/Vehicle Monitoring and Decontamination Public Reception Congregate Care Emergency Worker/Vehicle Monitoring/Decontamination Protective Actions for School Children - EV 2
Allegan County	Public Reception Congregate Care Evacuee Monitoring and Decontamination Emergency Worker/Vehicle Monitoring and Decontamination
Berrien County	Protective Actions for School Children - EV 2

The State and local organizations, except where noted in this report, demonstrated knowledge of their emergency response plans and procedures and adequately implemented them. No Deficiencies were identified during this exercise. Two Areas Requiring Corrective Action (ARCA) were identified during this exercise. The first issue was identified for the State of Michigan under Criterion 2.b.2 wherein the Agricultural Advisories were issued after evacuation Protective Action Orders were given. The second issue was for Allegan County under Criterion 6.b.1 wherein the vehicle monitoring and decontamination area established at the Area Technical Education Center was not set up as identified in the Allegan County Emergency Worker Decontamination Center Procedure. There was one prior issue for the State of Michigan identified under Criterion 5.b.1. Emergency Information and Instructions for the Public and the Media, and two prior issues for Allegan County identified under Criteria 1.c.1. Direction and Control, and 3.c.1 Implementation of Protective Actions for Special Populations that were resolved during this exercise.

II. INTRODUCTION

On December 7, 1979, the President directed FEMA to assume the lead responsibility for all off-site 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 off-site emergency planning and in the review and evaluation of RERPs and procedures developed by State and local governments;
- Determining whether such plans and procedures can be implemented on the basis of observation and evaluation of exercises 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, dated September 14, 1993); and
- Coordinating the activities of Federal agencies with responsibilities in the radiological emergency planning process:
 - U.S. Department of Agriculture;
 - U.S. Department of Commerce;
 - U.S. Department of Energy;
 - U.S. Department of Health and Human Services;
 - U.S. Department of the Interior;
 - U.S. Department of Transportation;
 - U.S. Environmental Protection Agency;
 - U.S. Food and Drug Administration; and
 - U.S. Nuclear Regulatory Commission.

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

Formal submission of the RERPs for the Palisades 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 RERPs was granted by FEMA to the State of Michigan on July 2, 1982, under 44 CFR 350.

A REP exercise was conducted on June 4, 2002 by FEMA Region V, to assess the capabilities of State and local emergency preparedness organizations in implementing their RERPs and procedures to protect the public health and safety during a radiological emergency involving the Palisades Nuclear Power Plant. The purpose of this exercise report is to present the exercise results and findings on the performance of the off-site 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 "Radiological Emergency Preparedness: Exercise Evaluation Methodology" as published in the Federal Register Notice/Vol. 67, No. 80, dated April 25, 2002.

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, which 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 criteria at each jurisdiction or functional entity evaluated in a jurisdiction-based, issues-only format. This section also contains: (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 June 4, 2002 exercise to test the off-site emergency response capabilities in the area surrounding the Palisades Nuclear Power Plant. This section of the exercise report includes a description of the 10-mile plume pathway EPZ, a listing of all participating jurisdictions and functional entities that 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 Palisades Nuclear Power Plant is a single unit pressurized water reactor with a net capacity of 805 megawatts. The facility, owned by Consumers Energy and operated by Nuclear Management Company (NMC), commenced commercial operation in 1971. Lake Michigan is the cooling water source for the plant.

The plant is located in northwestern Van Buren County, Michigan, on the shore of Lake Michigan, approximately five miles south-southwest of South Haven. The 10-mile EPZ of the Palisades Nuclear Power Plant encompasses parts of Allegan, Berrien, and Van Buren Counties, with the major portion of the zone falling within Van Buren County. The total plume pathway EPZ population is 35,220 (NMC data) persons.

Approximately 50 percent of the 10-mile EPZ lies within Lake Michigan. The lake attracts a large number of vacationers during the summer. The area includes various summer resorts, which offer camping facilities, light housekeeping cottages, tourist's attractions and the Van Buren State Park. The City of South Haven, with a tourism-based economy, is located five miles north of the plant. The population varies from summer to winter months.

Agricultural use of the land includes seasonal fresh fruit and vegetable farming and processing. Peak agricultural use takes place during the spring, summer, and fall months.

B. Exercise Participants

The following agencies, organizations, and units of government participated in the Palisades Nuclear Power Plant exercise on June 4, 2002.

STATE OF MICHIGAN

Department of Agriculture
Department of Community Health
Department of Natural Resources
Department of State Police

Department of Transportation
Emergency Management Division
Family Independence Agency
Office of the Governor - Executive Office
Office of Services to the Aging
Special Operation Division

RISK JURISDICTIONS

VAN BUREN COUNTY

Emergency Management Division
Emergency Medical Services
Executive Group – Chief Elected Official
Family Independence Agency
Fire Services
Health Services
Human Services
Intermediate School District
Michigan State Liaison
Office of Services to the Aging
Road Commission
Police Services
Sheriff's Office
Social Services

ALLEGAN COUNTY

Emergency Management Division
Executive Group – Chief Elected Official
Family Independence Agency
Fire Services
Health Services
Human Services
Intermediate School District
Mental Health
Michigan State Liaison
Office of Services to the Aging
Police Services
Road Commission
Sheriff's Department
Social Services

BERRIEN COUNTY

Emergency Management Division
Executive Group – Chief Elected Official
Family Independence Agency
Fire Services
Health Services
Human Services
Intermediate School District
Michigan State Liaison
Office of Services to the Aging
Police Services
Road Commission
Sheriff's Department
Social Services

RISK SCHOOL DISTRICTS

Bangor School District (Van Buren County)
Bangor Middle School
Bangor High School

Coloma School District (Allegan County)
Coloma Elementary School

PRIVATE/VOLUNTEER ORGANIZATIONS

Allegan County Sheriffs Posse
American Red Cross
Area Technical Education Center
Bangor Emergency Medical Services
Decatur High School
Fennville Fire Department
Fennville High School
Fennville Middle School
Gobles High School
Hartford Fire Department
Life Emergency Medical Services
Medic
Pride Care
Radio Amateur Civil Emergency Services
South Haven Fire and Emergency Medical Services
Van Buren Transit
WCSY-FM Radio

C. Exercise Timeline

Table 1, on the following page, presents the times at which key events and activities occurred during the Palisades Nuclear Power Plant plume pathway exposure exercise on June 4, 2002. Also included are times that notifications were made to the participating jurisdictions/functional entities.

Table 1. Exercise Timeline

DATE AND SITE: June 4, 2002 – Palisades Nuclear Power Plant

Emergency Classification Level	Time Utility Declared	Time That Notification Was Received or Action Was Taken				
		State of Michigan EOC	Allegan County EOC	Berrien County EOC	Van Buren County EOC	Joint Public Information Center
Unusual Event	0835	0841	0900	0850	0841	N/A
Alert	0851	0858	0912	0908	0858	0929
Site Area Emergency	1026	1030	1039	1040	1041	1038
General Emergency	1038	1053	1055	1056	1055	1055
SIM Radiation Release Started	1035	1045	1153	1228	1106	1055
SIM Radiation Release Terminated	N/A	N/A	N/A	N/A	N/A	N/A
Facility Declared Operational		0955	0955	0950	0925	0955
Declaration of State of Emergency	State Local	1035 N/A	1035 1035	1040 1031	1038 1038	1053 N/A
Exercise Terminated		1250	1250	1305	1250	1315
1 st Early Precautionary Advisory: Livestock Advisory – Dairy animals and livestock placed under shelter and fed stored feed and well water in Van Buren County – Areas 1, 2, and 3.		1040	1113	1119	1055	1110
2 nd Early Precautionary Advisory: Livestock Advisory – Dairy animals and livestock placed under shelter and fed stored feed and well water in Areas 1, 2, 3, 4, and 5.		1124	1215	1228	1127	1215
1 st Protective Action Order: Evacuate Areas 1, 2, and 3. Restrict marine and lake traffic out to 5 miles.		1053	1055	1056	1055	1059
1 st Siren Activation		1056	1102	1056	1056	N/A
1 st EAS Message		1055	1102	1056	1109	N/A
2 nd Protective Action Order: Evacuate Areas 1, 2, 3, 4, and 5. Restrict marine and lake traffic out to 10 miles.		1124	1125	1126	1127	1129
2 nd Siren Activation		1126	1140	1126	1127	N/A
2 nd EAS Message		1128	1140	1128	1137	N/A
KI Administration Decision: Ingestion of KI to all EWs in Areas 1, 2, and 3. Ingestion of KI to all EWs in Areas 1, 2, 3, 4, and 5.		1048 1122	1053 1127	1105 1134	1054 1130	1053 1143

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 June 4, 2002 exercise to test the off-site emergency response capabilities of State and local governments in the 10-mile EPZ surrounding the Palisades Nuclear Power Plant.

Each jurisdiction and functional entity was evaluated based on its demonstration of exercise criteria delineated in Federal Register Notice/Vol. 67, No. 80, dated April 25, 2002. Detailed information on the exercise criteria and the extent-of-play agreement used in this exercise are 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 criteria from Federal Register Notice/Vol. 67, No. 80, dated April 25, 2002 that were scheduled for demonstration during this exercise by all participating jurisdictions and functional entities. Exercise criteria are listed by number and the demonstration status of those criteria are indicated by the use of the following letters:

- M – Met (No Deficiency or ARCAs assessed and no unresolved ARCAs from prior exercises)
- D – Deficiency/(ies) assessed
- A – ARCA(s) assessed or unresolved ARCA(s) from prior exercise(s)
- N – Not Demonstrated (Reason explained in Section IV.B.)
- Blank – Not scheduled for demonstration

Table 2. Summary Results of Exercise Evaluation

DATE AND SITE: June 4, 2002 – Palisades Nuclear Power Plant (Sheet 1 of 2)

JURISDICTIONS/ FUNCTIONAL ENTITY	1. a.	1. b.	1. c.	1. d.	1. e.	2. a.	2. b.	2. b.	2. c.	2. d.	2. e.	3. a.	3. b.	3. c.	3. c.	3. d.	3. e.	3. e.	3. f.	4. a.	4. a.	4. a.	4. b.	4. c.	5. a.	5. a.	5. a.	5. b.	6. a.	6. b.	6. c.	6. d.		
STATE OF MICHIGAN																																		
Initial Notification Point	M			M																														
Emergency Operations Center	M	M	M	M	M	M	M	A	M																M			M						
Technical Support Group			M	M	M	M		M																										
Joint Public Information Center	M	M		M	M																										M			
Public Inquiry Hotline				M																														
DEQ - Evacuee Vehicle M&D (Van Buren Co.)				M	M							M																			M			
DEQ - Evacuee M&D (Allegan Co.)				M	M							M																			M			
DEQ - Evacuee M&D (Van Buren Co.)				M	M							M																			M			
DEQ - EW & Vehicle M&D (Allegan Co.)				M	M							M																			M	M		
DEQ - EW & Vehicle M&D (Van Buren Co.)				M	M							M																			M	M		
RISK COUNTIES																																		
VAN BUREN																																		
Initial Notification Point	M			M																														
Emergency Operations Center	M	M	M	M	M				M			M	M	M	M	M	M									M			M					
Joint Public Information Center	M			M	M																										M			
EAS Radio Station				M																														
Evacuation & ACP				M	M							M	M			M										M								
Dosimetry Distribution Point				M								M	M																					

LEGEND: M = Met (No Deficiency or ARCA(s) assessed)
D = Deficiency assessed

A = ARCA(s) assessed (Not affecting health and safety of public)
U = Unresolved ARCA(s) from prior exercises

Blank = Not scheduled for demonstration
N = Not demonstrated as scheduled (Reason explained in Section IV.B.)

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Table 2. Summary Results of Exercise Evaluation

DATE AND SITE: June 4, 2002 – Palisades Nuclear Power Plant (Sheet 2 of 2)

JURISDICTIONS/ FUNCTIONAL ENTITY	1. a. 1	1. b. 1	1. c. 1	1. d. 1	1. e. 1	2. a. 1	2. b. 1	2. b. 2	2. c. 1	2. d. 1	2. e. 1	3. a. 1	3. b. 1	3. c. 1	3. c. 2	3. d. 1	3. d. 2	3. e. 1	3. e. 2	3. f. 1	4. a. 1	4. a. 2	4. a. 3	4. b. 1	4. c. 1	5. a. 1	5. a. 2	5. a. 3	5. b. 1	6. a. 1	6. b. 1	6. c. 1	6. d. 1			
Evacuee Vehicle M&D				M	M							M																								
Evacuee M&D				M	M							M																					M			
Public Reception				M	M																												M			
Congregate Care				M	M																															
EW & Vehicle M&D				M	M							M																						M		
Protective Actions for School Children – EV2															M																		M	M		
ALLEGAN COUNTY																																				
Initial Notification Point	M			M																																
Emergency Operations Center	M	M	M	M	M				M			M	M	M		M	M										M				M					
Joint Public Information Center	M			M	M																															
Evacuation & ACP				M	M							M	M			M																				
Public Reception				M	M																															
Congregate Care				M	M																															
Evacuee M&D				M	M							M																							M	
EW & Vehicle M&D				M	M							M																						M	A	
BERRIEN COUNTY																																				
Initial Notification Point	M			M																																
Emergency Operations Center	M	M	M	M	M							M		M	M	M	M										M						M	M	M	
Joint Public Information Center	M			M	M																															
Protective Actions for School Children – EV2																M																				

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LEGEND: M = Met (No Deficiency or ARCA(s) assessed) A = ARCA(s) assessed (Not affecting health and safety of public) Blank = Not scheduled for demonstration
 D = Deficiency assessed U = Unresolved ARCA(s) from prior exercises N = Not demonstrated as scheduled (Reason explained in Section IV.B.)

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 are definitions of the terms used in this subsection relative to criteria demonstration status.

- **Met** – Listing of the demonstrated exercise criteria 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 criteria under which one or more Deficiencies was assessed during this exercise. Included is a description of each Deficiency and recommended corrective actions.
- **Area Requiring Corrective Actions** – Listing of the demonstrated exercise criteria 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 criteria that were not demonstrated as scheduled during this exercise and the reason(s) they were not demonstrated.
- **Prior Issues – Resolved** – Descriptions of ARCAs assessed during previous exercises that were resolved in this exercise and the corrective actions demonstrated.
- **Prior Issues – Unresolved** – Descriptions of ARCAs assessed during prior exercises that were not resolved in this exercise. Included is the reason the ARCA 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 that 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 of 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.
- **Criterion Number** – An alpha and two-digit number corresponding to the criteria numbers in the six Exercise Evaluation Areas described in Federal Register Notice/Vol. 67, No. 80 dated April 25, 2002, which amends FEMA-REP 14, Radiological Emergency Preparedness Exercise Manual.
- **Issue Classification Identifier** – (D = Deficiency, A = ARCA). Only Deficiencies and ARCAs are included in exercise reports. Plan Issues are reported to the State(s) via a letter from the Regional Director. Therefore, standardized issue numbers are not assigned to Plan Issues.
- **Exercise Identification Number** – A separate two- (or three-) digit indexing number assigned to each issue identified in the exercise.

1. STATE OF MICHIGAN

1.1 Initial Notification Point

- a. MET: Criteria 1.a.1 and 1.d.1
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ISSUES – RESOLVED: NONE
- f. PRIOR ISSUES – UNRESOLVED: NONE

1.2 Emergency Operations Center

- a. MET: Criteria 1.a.1; 1.b.1; 1.c.1; 1.d.1; 1.e.1; 2.a.1; 2.b.1; 2.c.1; 5.a.1; and 5.b.1
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: Criterion 2.b.2.

Issue No: 44-02-2.b.2-A-01

Condition: The first Livestock Advisory was broadcast to the EPZ population immediately prior to the first Protective Action Order (PAO) to evacuate, while the second Livestock Advisory was issued in conjunction with the second PAO to extend the evacuated area.

Possible Cause: Neither state procedures, nor guidance address a situation of placing livestock indoors and on stored feed and protected water when an evacuation order is implemented before the advisories are made.

Reference: NUREG-0654, J.9, 10.m

Effect: Livestock Advisories were issued in conjunction with and immediately after PAOs to evacuate the EPZ population.

Recommendation: Plans, procedures, and prescribed messages should be revised to address the issuance of a Livestock Advisory after a PAO to evacuate is issued; keeping exposure “as low as reasonably achievable” (ALARA).

Schedule Of Corrective Actions: State Emergency Operations Center Procedures and Michigan Department of Agriculture Procedures are being modified to include a caution on avoiding this situation in the future. This issue will be demonstrated for resolution during the September 24, 2002 Fermi 2 REP Exercise.

- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ISSUES – RESOLVED: NONE**
- f. **PRIOR ISSUES – UNRESOLVED: NONE**

1.3 Technical Support Group

- a. **MET: Criteria 1.c.1; 1.d.1; 1.e.1; 2.a.1; and 2.b.2**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ISSUES – RESOLVED: NONE**
- f. **PRIOR ISSUES – UNRESOLVED: NONE**

1.4 Joint Public Information Center

- a. **MET: Criteria 1.a.1; 1.b.1; 1.d.1; 1.e.1; and 5.b.1**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ISSUES – RESOLVED:**

Issue No: 44-00-13-A-02 (New Criterion 5.b.1.)

Description: The response time, for the Joint Public Information (JPIC) Center Rumor Control section, to the Consumers Energy Customer Service Center after the messages were completed ranged from six minutes to 73 minutes. Of the 10 messages forwarded, seven took over 36 minutes to respond to rumor control

questions. This kind of delay results in the service center staff answering the public rumor control questions with potentially obsolete information.

Corrective Action Demonstrated: The JPIC replaced the older facsimile transmission machines with newer machines that have greater memories, greater speed, and do not use thermal paper. Quick transmission of information between the two locations allowed public inquiry questions to be answered with current information.

- f. **PRIOR ISSUES – UNRESOLVED: NONE**

1.5 Public Inquiry Hotline

- a. **MET: Criteria 1.d.1 and 5.b.1**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ISSUES - RESOLVED: NONE**
- f. **PRIOR ISSUES – UNRESOLVED: NONE**

1.6 Department of Environmental Quality (DEQ) - Evacuee Vehicle Monitoring and Decontamination, Gobles High School – Van Buren County

- a. **MET: Criteria 1.d.1; 1.e.1; 3.a.1; and 6.a.1**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ISSUES – RESOLVED: NONE**
- f. **PRIOR ISSUES – UNRESOLVED: NONE**

**1.7 DEQ - Evacuee Monitoring and Decontamination,
Fennville High School – Allegan County**

- a. MET: Criteria 1.d.1; 1.e.1; 3.a.1; and 6.a.1
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ISSUES – RESOLVED: NONE
- f. PRIOR ISSUES – UNRESOLVED: NONE

**1.8 DEQ - Evacuee Monitoring and Decontamination,
Gobles High School – Van Buren County**

- a. MET: Criteria 1.d.1; 1.e.1; 3.a.1; and 6.a.1
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ISSUES – RESOLVED: NONE
- f. PRIOR ISSUES – UNRESOLVED: NONE

**1.9 DEQ – Emergency Worker (EW) and Vehicle Monitoring and
Decontamination, Area Technical Education Center – Allegan County**

- a. MET: Criteria 1.d.1; 1.e.1; 3.a.1; 6.a.1; and 6.b.1.
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ISSUES – RESOLVED: NONE
- f. PRIOR ISSUES – UNRESOLVED: NONE

**1.10 DEQ – EW and Vehicle Monitoring and Decontamination,
Hartford Fire Department – Van Buren County**

- a. MET: Criteria 1.d.1; 1.e.1; 3.a.1; 6.a.1; and 6.b.1.
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ISSUES – RESOLVED: NONE
- f. PRIOR ISSUES – UNRESOLVED: NONE

2. RISK COUNTIES

2.1 VAN BUREN COUNTY

2.1.1 Initial Notification Point

- a. MET: Criteria 1.a.1 and 1.d.1
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ISSUES – RESOLVED: NONE
- f. PRIOR ISSUES – UNRESOLVED: NONE

2.1.2 Emergency Operations Center

- a. MET: Criteria 1.a.1; 1.b.1; 1.c.1; 1.d.1; 1.e.1; 2.c.1; 3.a.1; 3.b.1; 3.c.1; 3.c.2; 3.d.1; 3.d.2; 5.a.1; and 5.b.1
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE

- e. **PRIOR ISSUES – RESOLVED: NONE**
- f. **PRIOR ISSUES – UNRESOLVED: NONE**

2.1.3 Joint Public Information Center, County Public Information Officer

- a. **MET: Criteria 1.a.1; 1.d.1; 1.e.1; and 5.b.1**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ISSUES – RESOLVED: NONE**
- f. **PRIOR ISSUES – UNRESOLVED: NONE**

2.1.4 Emergency Alert System Radio Station, WCSY

- a. **MET: Criteria 1.d.1 and 5.a.1**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ISSUES – RESOLVED: NONE**
- f. **PRIOR ISSUES – UNRESOLVED: NONE**

2.1.5 Evacuation and Access Control Point

- a. **MET: Criteria 1.d.1; 1.e.1; 3.a.1; 3.b.1; and 3.d.1**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ISSUES – RESOLVED: NONE**

- f. **PRIOR ISSUES – UNRESOLVED: NONE**

2.1.6 Dosimetry Distribution Point, County Health Department

- a. **MET: Criteria 1.e.1; 3.a.1; and 3.b.1**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ISSUES – RESOLVED: NONE**
- f. **PRIOR ISSUES – UNRESOLVED: NONE**

2.1.7 Evacuee Vehicle Monitoring and Decontamination, Gobles High School

- a. **MET: Criteria 1.d.1; 1.e.1; 3.a.1; and 6.a.1**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ISSUES – RESOLVED: NONE**
- f. **PRIOR ISSUES – UNRESOLVED: NONE**

2.1.8 Evacuee Monitoring and Decontamination, Gobles High School

- a. **MET: Criteria 1.d.1; 1.e.1; 3.a.1; and 6.a.1**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ISSUES – RESOLVED: NONE**
- f. **PRIOR ISSUES – UNRESOLVED: NONE**

2.1.9 Public Reception, Gobles High School

- a. **MET: Criteria 1.d.1; 1.e.1; and 6.a.1**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ISSUES – RESOLVED: NONE**
- f. **PRIOR ISSUES – UNRESOLVED: NONE**

2.1.10 Congregate Care, Decatur High School

- a. **MET: Criteria 1.d.1; 1.e.1; and 6.c.1**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ISSUES – RESOLVED: NONE**
- f. **PRIOR ISSUES – UNRESOLVED: NONE**

2.1.11 Emergency Worker and Vehicle Monitoring and Decontamination, Hartford Fire Department

- a. **MET: Criteria 1.d.1; 1.e.1; 3.a.1; 6.a.1; and 6.b.1**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ISSUES – RESOLVED: NONE**
- f. **PRIOR ISSUES – UNRESOLVED: NONE**

**2.1.12 Protective Actions for School Children - EV2,
Bangor Middle School and Bangor High School**

- a. MET: Criterion 3.c.2
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ISSUES – RESOLVED: NONE
- f. PRIOR ISSUES UNRESOLVED: NONE

2.2 ALLEGAN COUNTY

2.2.1 Initial Notification Point

- a. MET: Criteria 1.a.1 and 1.d.1
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ISSUES – RESOLVED: NONE
- f. PRIOR ISSUES – UNRESOLVED: NONE

2.2.2 Emergency Operations Center

- a. MET: Criteria 1.a.1; 1.b.1; 1.c.1; 1.d.1; 1.e.1; 2.c.1; 3.a.1; 3.b.1; 3.c.1; 3.d.1; 3.d.2; 5.a.1; and 5.b.1
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE
- d. NOT DEMONSTRATED: NONE
- e. PRIOR ISSUES – RESOLVED:

Issue No.: 44-00-03-A-03 (New Criterion 1.c.1.)

Description: The State provided the County with the second protective action order (PAO) at 1105 hours. The PAO included the requirement to evacuate sub-areas 1, 2, 3, 4, and 5 out to 10-miles. This PAO included a portion of Allegan County. There was discussion on the evacuation of 2,500 students from the schools in Van Buren County. However, there was no discussion of the general public and the special populations in Allegan County (Objective No. 15) during the roundtable briefing in the Allegan County Emergency Operations Center.

Corrective Action Demonstrated: The Family Independence Agency (FIA) representative contacted a sufficient number of appropriate transportation providers placing them on stand-by. Thereby, ensuring their availability in the event that Area 4 of Allegan County, which is within the 10-mile Emergency Planning Zone, would be available if the special needs population required additional transportation. During the exercise, the FIA representative simulated contacting each of the special needs population groups ensuring that their transportation requirements were adequate and that no additional assets were required. In addition, periodic updates by law Enforcement concerning the status of the evacuation of the general population was furnished to the Emergency Operations Center staff members once the PAO was implemented by Allegan County.

Issue No.: 44-00-15-A-04 (New Criterion 3.c.1.)

Description: The FIA representative did not receive confirmation that simulated telephone calls were made to the special populations. The FIA representative did not confirm that equipment and personnel required to evacuate transportation dependent people to a shelter were available.

Corrective Action Demonstrated: The FIA representative placed Allegan County Transportation on stand-by status during the Alert Emergency Classification Level in the event that the special needs populations residing in Areas 4 and 5 were required to be evacuated. In addition, the Fennville High School Reception Center was activated when the Governor signed the Protective Action Order to evacuate Areas 4 and 5. All special needs individuals were contacted (simulated) to determine if they required transportation to evacuate from the impacted areas.

f. **PRIOR ISSUES – UNRESOLVED: NONE**

2.2.3 Joint Public Information Center, County Public Information Officer

a. **MET:** Criteria 1.a.1; 1.d.1; 1.e.1; and 5.b.1.

- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ISSUES – RESOLVED: NONE**
- f. **PRIOR ISSUES – UNRESOLVED: NONE**

2.2.4 Evacuation and Access Control Point

- a. **MET: Criteria 1.d.1; 1.e.1; 3.a.1; 3.b.1; and 3.d.1**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ISSUES – RESOLVED: NONE**
- f. **PRIOR ISSUES – UNRESOLVED: NONE**

2.2.5 Public Reception, Fennville High School

- a. **MET: Criteria 1.d.1; 1.e.1; and 6.a.1**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ISSUES – RESOLVED: NONE**
- f. **PRIOR ISSUES – UNRESOLVED: NONE**

2.2.6 Congregate Care, Fennville Middle School

- a. **MET: Criteria 1.d.1; 1.e.1; and 6.c.1**
- b. **DEFICIENCY: NONE**

- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ISSUES – RESOLVED: NONE**
- f. **PRIOR ISSUES – UNRESOLVED: NONE**

2.2.7 Evacuee Monitoring and Decontamination, Fennville High School

- a. **MET: Criteria 1.d.1; 1.e.1; 3.a.1; and 6.a.1**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ISSUES – RESOLVED: NONE**
- f. **PRIOR ISSUES – UNRESOLVED: NONE**

2.2.8 Emergency Worker and Vehicle Monitoring and Decontamination, Area Technical Education Center

- a. **MET: Criteria 1.d.1; 1.e.1; 3.a.1; and 6.a.1.**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: Criterion 6.b.1.**

Issue No: 44-02-6.b.1-A-02

Condition: The vehicle monitoring and decontamination area was not set up as identified in the Allegan County Emergency Worker Decontamination Center Procedure. Center supervisory personnel did not insure that the facility setup, workflow, and conduct were correctly accomplished. Barriers, plastic ribbon, or marking tape identification tools were not used to designate vehicle control areas. Sufficient personnel and decontamination equipment was not provided to perform center mission.

Possible Cause: The Allegan County Emergency Worker Procedures, dated March 2002, is not descriptive enough to enable facility personnel to correctly

setup the desired vehicle flow path, identifying clean, contaminated, and decontamination areas for vehicles, and identifying sufficient personnel and equipment to manage and perform mission tasks. Equipment such as traffic cones and barriers were not provided.

Reference: NUREG-0654, J.10.h.; K.5.b.

Effect: Emergency workers could have driven their vehicles onto the property through several existing entrances potentially contaminating the entire area. Clean and contaminated vehicles could be intermingled causing cross contamination. Emergency workers again could contaminate themselves or a medical patient by using a vehicle that had not been decontaminated. Emergency workers and vehicles, waiting to be checked, were subjected to long lines, which kept them from being available quickly for reassignment.

Recommendation: Review and revise the Allegan County Emergency Worker Procedure. Provide training to all center personnel on the revised procedure. Provide trained personnel and equipment needed to accomplish the tasks. Include descriptive supervisory tasks in procedures, covering overall center management.

Schedule of Corrective Actions: Supervision and staff personnel will be trained on setup of the facility. Provisions will be made to ensure that contamination control barrier tape and traffic cones to control vehicular and personnel traffic flow are available to the Voc-Tech Center facility. Allegan County will request a staff assistance visit during 2003 to demonstrate this issue for resolution.

- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ISSUES – RESOLVED: NONE**
- f. **PRIOR ISSUES – UNRESOLVED: NONE**

2.3. BERRIEN COUNTY

2.3.1 Initial Notification Point

- a. **MET: Criteria 1.a.1 and 1.d.1**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**

- e. **PRIOR ISSUES – RESOLVED: NONE**
- f. **PRIOR ISSUES – UNRESOLVED: NONE**

2.3.2 Emergency Operations Center

- a. **MET: Criteria 1.a.1; 1.b.1; 1.c.1; 1.d.1; 1.e.1; 3.a.1; 3.c.1; 3.c.2; 3.d.1; 3.d.2; 5.a.1; 6.a.1; 6.b.1; and 6.c.1**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ISSUES – RESOLVED: NONE**
- f. **PRIOR ISSUES – UNRESOLVED: NONE**

2.3.3 Joint Public Information Center, County Public Information Officer

- a. **MET: Criteria 1.a.1; 1.d.1; 1.e.1; and 5.b.1**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ISSUES – RESOLVED: NONE**
- f. **PRIOR ISSUES – UNRESOLVED: NONE**

2.3.4 Protective Actions for School Children – EV2, Coloma Elementary School

- a. **MET: Criterion 3.c.2**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**

e. PRIOR ISSUES – RESOLVED: NONE

f. PRIOR ISSUES UNRESOLVED: NONE

APPENDIX 1

ACRONYMS AND ABBREVIATIONS

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

ACP	Access Control Point
ALARA	As Low As Reasonable Achievable
ARCA	Area Requiring Corrective Action
CFR	Code of Federal Regulations
cpm	counts per minute
DEQ	Department of Environmental Quality
EAS	Emergency Alert System
EMD	Emergency Management Division
EOC	Emergency Operations Center
EPZ	Emergency Planning Zone
EW	Emergency Worker
FEMA	Federal Emergency Management Agency
FIA	Family Independence Agency
FTC	Field Team Center
HP	Health Physics or Health Physicist
HS	High School
ICF	ICF Consulting
JPIC	Joint Public Information Center
KI	Potassium Iodide
M&D	Monitoring and Decontamination
mR	milliroentgen
mR/hr	milliroentgen per Hour
MSP	Michigan State Police
N/A	Not Applicable
NMC	Nuclear Management Company
NRC	U.S. Nuclear Regulatory Commission

NUREG-0654	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
ORO	Off-site Response Organization
PAO	Protective Action Order
PAD	Protective Action Decision
R	Roentgen
R/hr	Roentgen per hour
RAC	Regional Assistance Committee
RACES	Radio Amateur Civil Emergency Services
RASCAL	Radiological Assessment System for Consequence Analysis
RCP	Reactor Coolant Pump
RCS	Reactor Coolant System
REA	Radiation Emergency Area
rem	Roentgen Equivalent Man
REP	Radiological Emergency Preparedness
RERP	Radiological Emergency Response Plan
SEOC	State Emergency Operations Center
T/L	Team Leader

APPENDIX 2

EXERCISE EVALUATORS AND TEAM LEADERS

The following is a list of the personnel who evaluated the Palisades Nuclear Power Plant exercise on June 4, 2002. Evaluator 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
 ICF ICF Consulting

	<u>NAME</u>	<u>ORGANIZATION</u>
RAC Chairperson	Woody Curtis	FEMA
Exercise Director	Woody Curtis	FEMA

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

Initial Notification Point	Jennifer Roberson	ICF
Emergency Operations Center	Clint Crackel (TL) Jennifer Roberson Arthur Ball	FEMA ICF ICF
Technical Support	Richard Grundstrom	ICF
Joint Public Information Center	George Mac Donald	ICF
Public Inquiry Hotline	Tommy Brown	ICF
DEQ - Evacuee Vehicle Monitoring and Decontamination, Gobles HS - Van Buren County	Hollis Berry	ICF
DEQ - Evacuee Monitoring and Decontamination, Fennville HS - Allegan County	Frank Bold	ICF
DEQ - Evacuee Monitoring and Decontamination, Gobles HS - Van Buren County	Hollis Berry	ICF

<u>EVALUATION SITE</u>	<u>EVALUATOR</u>	<u>ORGANIZATION</u>
DEQ - Emergency Worker and Vehicles Monitoring and Decontamination, Area Technical Education Center- Allegan County	Bill Neidermeyer	ICF
DEQ - Emergency Worker and Vehicles Monitoring and Decontamination, Hartford Fire Department – Van Buren County	Richard Grundstrom	ICF

VAN BUREN COUNTY

Initial Notification Point	Sandra Bailey	FEMA
Emergency Operations Center	Sandra Bailey (TL) Robert Rospenda Harold Spedding	FEMA ICF ICF
Joint Public Information Center, County Public Information Officer	George Mac Donald	ICF
EAS Radio, WCSY	Rosemary Samsel	ICF
Evacuation and Access Control Point	Harold Spedding	ICF
Dosimetry Distribution	Tommy Brown	ICF
Evacuee Monitoring and Decontamination, Gobles HS	Hollis Berry	ICF
Evacuee Vehicle Monitoring and Decontamination, Gobles HS	Hollis Berry	ICF
Public Reception, Gobles HS	Hollis Berry	ICF
Congregate Care, Decatur HS	Rosemary Samsel	ICF
Emergency Worker and Vehicles Monitoring and Decontamination, Hartford Fire Department	Richard Grundstrom David Jacobson	ICF ICF
Protective Actions for School Children - EV2, Bangor Schools	Sandra Bailey	FEMA

<u>EVALUATION SITE</u>	<u>EVALUATOR</u>	<u>ORGANIZATION</u>
ALLEGAN COUNTY		
Initial Notification Point	Carolyn Sturghill	FEMA
Emergency Operations Center	Carolyn Sturghill (TL) Gary Naskrent Paul Nied	FEMA FEMA ICF
Joint Public Information Center, County Public Information Officer	George Mac Donald	ICF
Evacuation and Access Control Point	Paul Nied	ICF
Public Reception, Fennville HS	Rosemary Samsel	ICF
Congregate Care, Fennville Middle School	Rosemary Samsel	ICF
Evacuee Monitoring and Decontamination, Fennville HS	Frank Bold William Neidermeyer	ICF ICF
Emergency Worker and Vehicles Monitoring and Decontamination, Area Technical Education Center	Frank Bold William Neidermeyer	ICF ICF
BERRIEN COUNTY		
Initial Notification Point	Roy Smith	ICF
Emergency Operations Center	Roy Smith (TL) David Jacobson	ICF ICF
Joint Public Information Center, County Public Information Officer	George Mac Donald	ICF
Protective Actions for School Children - EV2, Coloma Schools	Sandra Bailey	FEMA

APPENDIX 3

EXERCISE CRITERIA AND EXTENT-OF-PLAY AGREEMENT

This appendix lists the exercise criteria that were scheduled for demonstration in the Palisades Nuclear Power Plant exercise on June 4, 2002 and the off-site extent-of-play agreement approved by FEMA Region V on May 22, 2002.

The exercise criteria, contained in FEMA "Radiological Emergency Preparedness Exercise Evaluation Methodology" as published in the Federal Register Notice/Vol.67, No 80, dated April 25, 2002, 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 criteria are intended for use at all nuclear power plant sites, and because of variations among off-site 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 criteria.

A. Exercise Criteria and Extent-of-Play

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

PALISADES NUCLEAR POWER PLANT EXERCISE

June 4, 2002

Extent Of Play Agreements for Allegan County, Berrien County, Van Buren County, and the State of Michigan

Criteria that can be re-demonstrated immediately for credit, at the discretion of the evaluator, include the following: 3.a.1, 3.d.1, 3.d.2, 6.a.1, 6.b.1, 6.c.1 and 6.d.1. Criteria that may be re-demonstrated, as approved on a case-by-case basis by the Chairperson of the Regional Assistance Committee, include the following: 2.a.1, 2.b.1, 2.b.2, 5.a.1 and 5.b.1.

Evaluation Area 1 - Emergency Operations Management

Criterion 1.a.1: OROs use effective procedures to alert, notify and mobilize emergency personnel and activate facilities in a timely manner.

The State Emergency Operations Center (SEOC) will be fully activated. State personnel will be mobilized in accordance with procedures with the exception of personnel reporting to local government EOCs and the JPIC, who will be pre-positioned. Pre-positioned personnel will begin participation no earlier than the Alert classification. The Field Team Center and associated personnel will not be demonstrated for this exercise. A cell will be established to initiate exercise data inputs for SEOC players. Personnel involved in out of sequence demonstrations will be prestaged. A roster will be provided to demonstrate 24-hour staffing.

The Allegan and Van Buren County EOCs will be fully activated. Personnel will be mobilized in accordance with procedures with the exception of those reporting to the JPIC, who will be pre-positioned. Pre-positioned personnel will begin participation no earlier than the Alert classification. Personnel involved in out of sequence demonstrations will be pre-positioned. Rosters will be provided to demonstrate 24-hour staffing.

The Berrien County EOC will be partially activated and mobilized in accordance with procedures. EOC staff will be limited to the Chief Executive, Chief of Staff, Public Information, RADPRO, Fire Services, and Social Services representatives. A roster will be provided to demonstrate 24-hour staffing of the EOC.

Criterion 1.b.1: Facilities are sufficient to support the emergency response.

This objective will include the demonstration of the setup of the State, Allegan County, and Van Buren County EOCs. The JPIC and Berrien County EOC will be set-up in advance of the exercise. The Van Buren County EOC was built during 2001.

Criterion 1.c.1: Key personnel with leadership roles for the ORO provide direction and control to that part of the overall response effort for which they are responsible.

This criterion will be demonstrated at the SEOC, Allegan County EOC, Berrien County EOC, and the Van Buren County EOC.

Criterion 1.d.1: At least two communication systems are available, at least one operates properly, and communication links are established and maintained with appropriate locations. Communications capabilities are managed in support of emergency operations.

This criterion will be demonstrated at the SEOC, Allegan County EOC, Berrien County EOC, and the Van Buren County EOC.

Criterion 1.e.1: Equipment, maps, displays, dosimetry, potassium iodide (KI) and other supplies are sufficient to support emergency operations.

Equipment, maps, displays, and other supplies will be demonstrated to support emergency operations at the SEOC, JPIC, Allegan County EOC, Berrien County EOC, and the Van Buren County EOC. The FTC will not be demonstrated. Potassium iodide and dosimetry are stored at the Emergency Management Office in Allegan County; at the Emergency Management Office in Berrien County; at the Emergency Management Office, Health Department, and South Haven Fire Department in Van Buren County, and at the MSP/EMD office in Lansing. The Michigan Department of Environmental Quality also maintains supplies of potassium iodide and dosimetry for use by its personnel.

EVALUATION AREA 2 - PROTECTIVE ACTION DECISION MAKING

Criterion 2.a.1: OROs use a decision-making process, considering relevant factors and appropriate coordination, to ensure that an exposure control system, including the use of KI, is in place for emergency workers including provisions to authorize radiation exposure in excess of administrative limits or protective action guides.

The ability to make the decision to recommend the use of KI to emergency workers will be demonstrated by the SEOC. Authorization to exceed state exposure limits will be demonstrated as driven by the scenario. Exposure record keeping will be demonstrated at out of sequence emergency worker and public decontamination center activities in Van Buren and Allegan Counties.

Criterion 2.b.1: Appropriate protective action recommendations are based on available information on plant conditions, field monitoring data and licensee and ORO dose projections, as well as knowledge of on-site and off-site environmental conditions.

The Technical Support Group in the SEOC will evaluate licensee and FTC Cell provided information and complete an independent analysis of scenario data. Dose assessment evaluation will be conducted via interview with the individual performing the FTC Cell role at the MSP/EMD office in Lansing.

This criterion does not apply to Allegan, Berrien, and Van Buren Counties.

Criterion 2.b.2: A decision-making process involving consideration of appropriate factors and necessary coordination is used to make protective action decisions (PADs) for the general public (including the recommendation for the use of KI, if ORO policy).

This criterion will be demonstrated by the Executive Group in the SEOC in conjunction with applicable support staff.

This criterion does not apply to Allegan, Berrien, and Van Buren Counties.

Criterion 2.c.1: Protective action decisions are made, as appropriate, for special population groups.

This criterion will be demonstrated by the Executive Group in the SEOC in conjunction with applicable support staff via the ability to make the decision to recommend the use of KI to institutionalized persons will be demonstrated by the SEOC.

Lists of transportation dependent and special needs populations are kept by each county. No personnel will be moved. Equipment lists and rosters will be available in the Van Buren and Allegan County EOCs. No phone calls to transportation dependent persons will be made. Berrien County will not demonstrate this criterion.

Criterion 2.d.1: Radiological consequences for the ingestion pathway are assessed and appropriate protective action decisions are made based on the ORO's planning criteria.

This criterion will not be demonstrated during this exercise.

Criterion 2.e.1: Timely re-location, re-entry and return decisions are made and coordinated as appropriate, based on assessments of the radiological conditions and criteria in the OROs plan and/or procedures.

This criterion will not be demonstrated during this exercise.

EVALUATION AREA 3 - PROTECTIVE ACTION IMPLEMENTATION

Criterion 3.a.1: The OROs issue appropriate dosimetry and procedures, and manage radiological exposure to emergency workers in accordance with the plan and procedures. Emergency workers periodically and at the end of each mission read their dosimeters and record the readings on the appropriate exposure record or chart.

Issuance of dosimetry will be discussed during scheduled interviews, which may occur during the exercise. Refer to the Table of Exercise Demonstrations for specific times and locations.

This criterion will be demonstrated by the State of Michigan, Allegan County, and Van Buren County during out of sequence reception and decontamination center demonstrations.

This criterion will be demonstrated during the traffic and access control demonstration

for Van Buren County and Allegan County. Berrien County has no scheduled field demonstrations during this exercise. The RadPro Officer may be interviewed by FEMA to assess the ability to effectively distribute dosimetry.

Criterion 3.b.1: KI and appropriate instructions are available should a decision to recommend use of KI be made. Appropriate record keeping of the administration of KI for emergency workers and institutionalized individuals (not the general public) is maintained.

This will be demonstrated during the traffic and access control demonstrations in Allegan and Van Buren Counties. Berrien County will not demonstrate this objective.

Simulated KI will be distributed to emergency workers in Van Buren and Allegan Counties along with their dosimetry if driven by the scenario. The State will demonstrate this objective through decision-making and orders to the counties to implement appropriate Protective Action Orders.

Criterion 3.c.1: Protective action decisions are implemented for special population groups within areas subject to protective actions.

This criterion will be demonstrated in the Allegan, Berrien, and Van Buren County EOCs via EOC staff discussions, which will be documented in situation logs. Telephone calls will be made to demonstrate the ability to contact providers of transportation services. Each county will contact one public transit authority, one school system for buses, one local ambulance service, and one fire/rescue service. There will be no discussion of scenario information during these calls.

Criterion 3.c.2: OROs/School officials decide upon and implement protective actions for schools.

This criterion will be demonstrated in the Berrien and Van Buren County EOCs. EV-2 interviews will be conducted in Berrien and Van Buren Counties. There are no Allegan County schools in the 10-mile EPZ. Refer to the Table of Exercise Demonstrations for specific times and locations.

Criterion 3.d.1: Appropriate traffic and access control is established. Accurate instructions are provided to traffic and access control personnel.

Decisions related to traffic and access control will be demonstrated in the Allegan, Berrien, and Van Buren County EOCs. Allegan and Van Buren counties will demonstrate one traffic and access control post each during the exercise. Demonstration locations will be determined during the exercise at a time agreed upon by the FEMA evaluator, the State Controller, and the county emergency management coordinator. Staffing of the all other access and traffic control points will be simulated.

Criterion 3.d.2: Impediments to evacuation are identified and resolved.

This will be demonstrated through discussions at the Allegan and Van Buren County EOCs. Messages will be injected by the State Controller to drive this demonstration.

Personnel will deal with the impediment by discussing the need for equipment, discussing its estimated time of arrival, etc. The State of Michigan and Berrien County will not demonstrate this objective. If the impediment posed involves road closures that would have been known to exercise participants during the course of normal operations, this information will be provided to the players as part of the initial conditions for the exercise.

Criterion 3.e.1: The ORO demonstrates the availability and appropriate use of adequate information regarding water, food supplies, milk and agricultural production within the ingestion exposure pathway emergency planning zone for implementation of protective actions.

This criterion will not be demonstrated during this exercise.

Criterion 3.e.2: Appropriate measures, strategies and pre-printed instructional material are developed for implementing protective action decisions for contaminated water, food products, milk and agricultural production.

This criterion will not be demonstrated during this exercise.

Criterion 3.f.1: Decisions regarding controlled re-entry of emergency workers and relocation and return of the public are coordinated with appropriate organizations and implemented.

This criterion will not be demonstrated during this exercise.

EVALUATION AREA 4 - FIELD MEASUREMENT AND ANALYSIS

Criterion 4.a.1: The field teams are equipped to perform field measurements of direct radiation exposure (cloud and ground shine) and to sample airborne radioiodine and particulates.

This criterion will not be demonstrated during this exercise.

Criterion 4.a.2: Field teams are managed to obtain sufficient information to help characterize the release and to control radiation exposure.

This criterion will not be demonstrated during this exercise.

Criterion 4.a.3: Ambient radiation measurements are made and recorded at appropriate locations, and radioiodine and particulate samples are collected. Teams will move to an appropriate low background location to determine whether any significant (as specified in the plan and/or procedures) amount of radioactivity has been collected on the sampling media.

This criterion will not be demonstrated during this exercise.

Criterion 4.b.1: The field teams demonstrate the capability to make appropriate measurements and to collect appropriate samples (e.g., food crops, milk, water, vegetation, and soil) to support adequate assessments and protective action decision-making.

This criterion will not be demonstrated during this exercise.

Criterion 4.c.1: The laboratory is capable of performing required radiological analyses to support protective action decisions.

This criterion will not be demonstrated during this exercise.

EVALUATION AREA 5 - EMERGENCY NOTIFICATION AND PUBLIC INFORMATION

Criterion 5.a.1: Activities associated with primary alerting and notification of the public are completed in a timely manner following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. The initial instructional message to the public must include as a minimum the elements required by current FEMA REP guidance.

The Van Buren County Sheriff's Department is the primary activation point for the public warning sirens and Emergency Alert System for Van Buren, Allegan, and Berrien Counties. Allegan and Berrien Counties do not control the sirens or issue separate EAS messages. To demonstrate this criterion, the State will provide information to Van Buren County for release in the initial Emergency Alert System message. Allegan and Berrien Counties will provide information for inclusion only if the initial Protective Action Order affects their jurisdiction.

Criterion 5.a.2: [RESERVED]

Criterion 5.a.3: Activities associated with FEMA approved exception areas (where applicable) are completed within 45 minutes following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. Backup alert and notification of the public is completed within 45 minutes following the detection by the ORO of a failure of the primary alert and notification system.

This objective does not apply to the State of Michigan, Allegan County, Berrien County, or Van Buren County.

Criterion 5.b.1: OROs provide accurate emergency information and instructions to the public and the news media in a timely manner.

This will be demonstrated at the JPIC via dissemination of Emergency Alert System announcements in coordination with the SEOC, Allegan County EOC, Berrien County EOC, and Van Buren County EOC. All media briefings will be conducted at the JPIC.

A public inquiry hotline will be operated by Consumers Energy during the exercise. Refer to the Table of Exercise Demonstrations for specific time and location.

Evaluation Area 6 - Support Operation/Facilities

Criterion 6.a.1: The reception center/emergency worker facility has appropriate space, adequate resources, and trained personnel to provide monitoring, decontamination, and registration of evacuees and/or emergency workers.

Van Buren and Allegan Counties will each fully demonstrate separate emergency worker and public reception/decontamination centers during out-of sequence demonstrations. Personnel will not go through alert, mobilization, activation, or shift changes. Berrien County will demonstrate its capabilities through interviews at the BEOC. State DEQ HP personnel will provide assistance as requested during Allegan and Van Buren County demonstrations. Public reception centers will demonstrate the ability to screen evacuees within established guidelines to meet the 20% in 12-hour requirement. The State of Michigan Field Team Center is not being demonstrated.

Criterion 6.b.1: The facility/ORO has adequate procedures and resources for the accomplishment of monitoring and decontamination of emergency worker equipment including vehicles.

Van Buren and Allegan Counties will each fully demonstrate an emergency worker decontamination center out of sequence with the exercise. Emergency vehicles will be monitored and decontaminated as appropriate. State DEQ HP personnel will provide assistance as requested during Allegan and Van Buren County demonstrations. The State of Michigan Field Team Center is not being demonstrated. Berrien County will demonstrate its capabilities in an interview at its EOC.

Criterion 6.c.1: Managers of congregate care facilities demonstrate that the centers have resources to provide services and accommodations consistent with American Red Cross planning guidelines. Managers demonstrate the procedures to assure that evacuees have been monitored for contamination and have been decontaminated as appropriate prior to entering congregate care facilities.

Van Buren and Allegan Counties will each fully demonstrate a congregate care center out of sequence with the exercise. Personnel manning the centers will not go through alert, mobilization, activation, or shift changes. Berrien County will demonstrate its capabilities in an interview at its EOC.

Criterion 6.d.1: The facility/ORO has the appropriate space, adequate resources, and trained personnel to provide transport, monitoring, decontamination, and medical services to contaminated injured individuals.

This criterion will be demonstrated during the MS-1 exercise scheduled for October 2, 2002.

APPENDIX 4

EXERCISE SCENARIO

This appendix contains a summary of the simulated sequences of events that were used as the basis for invoking emergency response actions by OROs in the Palisades Nuclear Power Plant exercise on June 4, 2002.

The plume exercise scenario was submitted by the State of Michigan and Nuclear Management Company, and approved by FEMA Region V on May 23, 2002.

During the exercises, controllers from the State of Michigan either gave or telephoned "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.

SCENARIO SUMMARY

Palex 2002

The plant is operating at 100% power and has been for the last 6 months with exception of power changes for testing. Chemistry results have indicated a potential clad failure. Dose equivalent I-131 has risen steadily over the last 17 days. The scenario will present the Operators with a small Primary Coolant Leak that will develop into a Large Break LOCA. The leak rate will rise after the switchyard Front (F) Bus is lost due to some perturbation on the grid. The Front Bus will cause the Turbine to trip and the reactor will not auto trip on loss of load. But can be manually tripped from the C-02 Panel. This will prompt the SED to declare an Alert emergency classification.

One of the HPSI pumps is Out of Service due to a breaker P.M. The other HPSI pump will operate as designed at the SIAS but one of the re-circulation valves will not open. The pump may overheat and seize if it is not discovered that the recirc valve is not open.

Instrument and Control Technicians are trouble shooting a problem with the Containment Isolation Actuation System due to an Engineering Assist Report (EAR). Their work in the Control Room will begin with them in the Control Room and continue until the Primary Coolant Leak is introduced to the crew. At this time it would be expected that the SS/CRS would ask the Technicians to restore the system and leave the Control Room. A problem with Containment Isolation will become evident later when the Containment Isolation System is initiated due to RIA 1807 (one of the Containment High Radiation monitors) goes into alarm. This has the Control Room, per procedure, manually isolate the containment. At this point the containment vent valves do not indicate closed on the Control Room panel.

If both HPSI pumps are unavailable the SIRWT should not lose level appreciably. Level should not drop unless Containment Sprays initiate. If level does reach 2% there will be no HPSI pumps available for injection during a Re-circulation Actuation System if the HPSI pumps= re-circulation valve is not opened.

The cladding fault will eventually develop into a fuel failure sufficient to create a significant radiation level in the containment and a radioactive release to the environment that will affect Van Buren and Allegan Counties. This will prompt two Protective Action Recommendations to be made. The initial PAR should be Evacuate the 2 miles radius and to 5 miles in the affected AREAS. The second PAR will involve evacuation of the 5 mile radius and evacuation

of the affected AREA out to the 10 mile radius.

The emergency procedures that will be entered will consist of ONP 23.1 Primary Coolant Leak, EOP-4 Loss of Coolant Accident and EOP-9.

The Emergency Action Levels that those people with Command and Control should be utilizing will be EI 1 Primary Coolant System Integrity to declare the Unusual Event when the PCS Leak is equal to or exceeds 10 gallons per minute. The Alert will be declared from the Engineered Safeguards Features when the plant does not trip from the Loss of Load and must be tripped manually; exceeding an RPS Set point and Manual Trip was successful.

The Site Area Emergency (possibly a General Emergency) will be initiated from losing PCS integrity and fuel cladding in the Fission Product Barrier category. The projected General Emergency will stem from containment integrity being lost about this same time. If all three fission products are lost a General Emergency will be appropriate.

A radioactive release will be evident due to the Stack Gas Monitors (RGEM) indicating a rise at the Normal Range Stack Monitor (RIA 2326) then the High Range Stack Monitor (RIA 2327). The release will produce two Protective Action Recommendations. The first will be projected to include the 2-mile radius and the affected area within the 5 mile radius. The second PAR will be for the entire 5-mile radius and the affected area within the 10 mile radius.

A 24-hour time jump will be initiated to enter the Re-entry phase and eventually the Recovery phase of the exercise.

The exercise will be terminated upon satisfying all the objectives for the 2002 Palisades graded exercise.

Time:	Initial conditions:
0800	<p>A team of two Instrument and Control Technicians are in the Control Room working on the Containment Isolation System Logic due to a Engineering Assistance Report (EAR) modification.</p> <p>Plant is at 100% Core age; Xenon and Boron concentration is per the Forced Outage Book.</p> <p>High Pressure Safety Injection pump (Pump 66B) is Out of Service due to Electricians performing Preventive Maintenance on breaker 152-113 (B pump). Technical Specifications LCO 3.5.2 B 1 is in affect for 72 Hours.</p> <p>Chemistry samples have indicated a steady rise in the Primary Coolant Dose equivalent I-131. This has been trended over the last 14 days and shown a steady rise to the present value of 0.09 ϕCi/gm.</p> <p>No other equipment is degraded or out of service.</p>
0810	<p>Chemistry will call Control Room for permission to draw a Primary Coolant Sample for trending PCS Iodine activity. Request CV-1910 and CV-1911 opened.</p>
0815	<p>The simulator operator will insert the Primary Coolant System leak at 12 gallons per minute ramped in over 30 seconds.</p>
0818	<p>Gaseous Waste Monitor annunciator alarms. (Window EK-1364)</p>
0819	<p>The CRS request that the NCO <i>at the controls</i> (ATC) quantify the suspected Primary Coolant Leak. The CRS enters ONP 23.1 Primary Coolant Leak. Announcement of entering ONP 23.1 is made to the plant.</p>

- 0820 The Chemistry Technician calls inquiring if they should secure the sampling. (Need to ensure Controller hands the message to the Chem. Tech. to call Simulator for this. Correct phone number needs to be given to the Chem. Tech.) Letdown is isolated per ONP 23.1.
- 0822 A crew brief is conducted. A plant trip is discussed if the leak approaches 20 gpm per ONP 23.1.
- 0823 The leak rate should be calculated at 10-12 gpm and the Shift Supervisor should be into EI 1-Category-"Primary Coolant Integrity"-Unidentified leakage greater than 10 gallons per minute.
- 0825 The Shift Supervisor should be declaring an Unusual Event emergency classification for reasons mentioned above.
- 0828 The emergency notifications should be initiated to Van Buren County, the State of Michigan and the NRC.
- 0835 The crew prepares to reduce power.
- 0845 The leak rate is calculated is calculated at approximately 18 gpm.
- 0848 The CRS calls for a crew brief to discuss tripping the plant due to the approaching 20 gpm leak rate.
- 0850 Before the crew can trip the plant the switchyard Front Bus trips. The safeguards buses swap to Startup Transformers but the Turbine trips but the reactor does not trip. The reactor must be tripped manually from C-02.
- 0851 The crew enters EOP 1.0.
- 0853 The Shift Supervisor declares an ALERT classification, due to the Failure of the RPS to automatically trip exceeding an RPS set point and the manual trip from C-02 trips the reactor.
- 0900 The CRS/SS-SED discuss removing the I&C Technicians from the Control Room.
- 0901 EOP 1 verbal verifications completed.
- 0902 The I&C Technicians are ordered to restore the CIS to normal and exit the Control Room when they are through. EOP 1.0 completed.
- 0919 Leak rate calculated to be 36 gpm.
- 0920 The TSC is declared Operational, the Shift Supervisor relieved of SED duties. Communications is moved to the TSC.
- 0924 PCS cool down commenced
- 0930 SO- Fail fuel malfunction initiated.
- 0942 Leak calculated to be 68 gpm. Radiation monitors at the 590 elevation and the High Range monitors are rising steadily. The area monitor at the NSSS panel is indicating a steady rise.
- 0948 SIS is initiated automatically at 1605 psia. No mini flow (recirculation flow) is indicated on Pump 66 "A", nor on any of the Low Pressure Safety Injection pump.

- 0953 "E" electrical bus is restored
- 1007 RIA 1805,1806, 1807, 1808 are all greater than 6 R/hour. Leak rate is calculated to be 90 gpm.
- 1023 RIA 1807 reaches 10 R/hour (CIS will be manually initiated or if the second RIA reaches 10 R/hour CIS will occur automatically). CV-1065 and CV-1064 will not show closed indications.
- 1024 The EOF Director is advised to declare a Site Area Emergency. There are 2 out of 3 fission product barriers breached.
- 1026 A new message has gone out to the county, state and NRC.
- 1030 I&C come to the Control Room to open CV-1910 and CV-1911 for EI 7.
- 1045 The Health Physics Technician at the NSSS panel has a number that indicates a fuel failure in excess of <1%.
- 1055 This information arrives at the TSC. The HP Supervisor and Operations Support Group recommend upgrading the emergency classification to a General Emergency.
- 1100 RIA 2326 goes into Alert and indicates a steady rise to the High Alarm Set point. If a General Emergency has not been declared at this time, a leak path for the containment should be investigated and found to be CV-1065 and CV-1064
- 1105 A General Emergency is declared at this time with a Protective Action Recommendation made to evacuate the 2-mile radius and out to 5 miles in the affected areas.
- 1130 RIA 2327 is indicating xx mR/hour. RIA 2321 and 2322 are showing 1.0E04 Rem/hour in containment and is rising slowly. (at this point the radiation level should level off and within the next hour start to drop - it cannot exceed the limit for 20% core damage per EI-11). At 4.5 hours after reactor trip the 20% limit will be 10,000 Rem/hr.
- 1155 The Dose Assessor indicates that the plume has exceeded 1 Rem at the 5-mile radius. The EOF Director calls the State Emergency Management Director in Lansing and changes the PAR to evacuate the 5-mile radius and out to the 10-mile radius in the affected areas.
- 1158 The OSC informs the TSC/Control Room that the breaker for Pump (P-66B is restored and ready to place in service.
- 1200 SIRWT is at 2% and RAS is initiated. If the re-circulation valve(s) that did not open were not discovered in time to prevent the HPSI pump that was available from seizing their will not be a pump to add water to the PCS. If the valve failure was discovered in time then the operators can operate the pump as necessary in attempt to keep the core covered.
- 1215 I&C resolve the containment vent valve isolation opening and gets one them to close and isolates the release.
- 1230 RIA 2327 continues to drop from the isolation of the containment vent CV.
- 1245 The breaker that was out for Preventative Maintenance is restored to operability and ready to be closed.

- 1300 The RVLMS lights have been restored to normal and pressurizer level is beginning to register.
- 1330 Primary Coolant System pressure is 280 psia and temperature is 250EF. Cool down continues.
- 1335 Terminate/Critique

Time jump to 24 hours from termination for Re-entry/Recovery.